



FRIENDS OF THE COLUMBIA GORGE

July 3, 2014

Katey Grange
Environmental Lead, WRE Project (DOE/EIS-0419)
Bonneville Power Administration - KEC-4
P.O. Box 3621
Portland, OR 97208-3621

Amy M. Gardner
Project Manager, WRE Project (DOE/EIS-0419)
Bonneville Power Administration - TEP-TPP-1
P.O. Box 61409
Vancouver, WA 98666-1409

Re: Whistling Ridge Energy Project (DOE/EIS-0419), Skamania County, Washington

Dear Ms. Grange and Ms. Gardner:

This letter is written on behalf of Friends of the Columbia Gorge (“Friends”) and Save Our Scenic Area (“SOSA”). Friends and SOSA are nonprofit conservation advocacy organizations dedicated to the protection and enhancement of the resources of the Columbia River Gorge region. Friends’ and SOSA’s members live in the communities and use and enjoy the resources that would be affected by the Whistling Ridge Energy Project (“Project” or “WREP”), proposed by Whistling Ridge Energy LLC (“WRE” or “Applicant”).

As organizations and individuals interested in the Whistling Ridge project and the future of the Columbia Gorge, we write today to ask that BPA *deny* the generation interconnection request (“GIR”) sought by WRE.

In addition, for the reasons explained below, BPA must prepare and issue a supplemental environmental impact statement (“EIS”) for the Project prior to making a decision on the interconnection request. Given that the basic Project details, likely impacts, and mitigation measures have yet to be disclosed by the Applicant and have yet to be reviewed or decided by the State of Washington, BPA should coordinate with the Washington Energy Facility Site Evaluation Council (“EFSEC”) in the preparation and issuance of a supplemental EIS.

1. Background

A. The Proposal

BPA is currently reviewing a generation interconnection request for the Whistling Ridge Energy Project, which BPA describes on its website as follows:

In June 2002, SDS Lumber Company submitted a generation interconnection request for 70-MW on the North Bonneville-Midway 230-kV transmission line approximately five miles West of BPA's Underwood Substation. Subsequently, SDS Lumber Company created a new limited liability company called Whistling Ridge Energy LLC, which submitted an application with WA EFSEC for site certification for the wind project. Whistling Ridge Energy LLC would finance, develop, own and operate the proposed wind project. The proposed wind facility would consist of up to approximately 50, 1.2- to 2.5-MW wind turbines up to 426 feet tall, as well as infrastructure such as newly-constructed and improved roads, transformers, underground collector lines, a substation, and an operations and maintenance (O&M) facility.¹

B. The Project Site

The Project is proposed to be sited immediately adjacent to the Columbia River Gorge National Scenic Area ("National Scenic Area"), and along several forested peaks within the Cascade Mountain Range, including Chemawa Hill, Underwood Mountain, and Saddleback Mountain. The Project site is adjacent to the rural community of Underwood, and is near the communities of Mill A and Willard. The Project site is visible from a number of cities and rural communities,² nationally designated travel corridors,³ and scenic and recreational vantage points on nearby state and federal public lands.⁴

The Columbia River Gorge, including the Project site, is truly a special place. In 2009 the Gorge was ranked sixth internationally and second in North America among sustainable destinations by the National Geographic Society's Center for Sustainable Destinations, which called the Gorge "the U.S.A.'s Rhineland."⁵ In a recent letter commemorating the twenty-fifth anniversary of the creation of the National Scenic Area, former Washington Governor Gregoire referred to the Columbia River Gorge as "a spectacular river canyon slicing through the

¹ BPA, *Whistling Ridge Energy Project (DOE/EIS-0419)*, Skamania County, Washington, http://efw.bpa.gov/environmental_services/Document_Library/Whistling_Ridge/ (accessed June 10, 2014) (attached as Exhibit A.1).

² In addition to the rural communities discussed above, these include the cities of White Salmon, Washington and Hood River, Oregon.

³ These include the Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Historic Columbia River Highway, and the Ice Age Floods National Geological Trail.

⁴ These include numerous hiking trails and peaks within the Gifford Pinchot National Forest and on Washington Department of Natural Resources ("DNR") lands.

⁵ EFSEC, Council Order No. 868, Whistling Ridge Final Adjudicative Order, Concurring Opinion of Chairman James Luce, at n.iii (attached as Exhibit B.3).

Cascades Mountains” and called the Gorge a “wild and beautiful place,” “like no place on Earth,” and an “international treasure.”⁶

The Project site is also located within a designated Northern Spotted Owl Special Emphasis Area (“SOSEA”) and is highly diverse in wildlife. The site provides habitat for more than ninety species of birds,⁷ and as many as fifteen species of bats may occupy the site.⁸ Most of these species are associated with forested habitat,⁹ and many are of special federal and state concern.¹⁰ The mountain ridges running through the Project site, as well as the nearby Columbia River, are important migration routes for raptors and other birds.¹¹ Because the WREP would be the first large-scale, commercial wind energy project built in a Pacific Northwest coniferous forest, it would be the first time many of these species would be exposed to such a project.¹²

C. Procedural History

In August 2011, BPA and EFSEC jointly issued a Final Environmental Impact Statement (“FEIS”) for the Project.¹³

On March 5, 2012, Governor Gregoire adopted EFSEC’s recommendation and executed a Site Certification Agreement (“SCA”) for the Project.¹⁴ The Governor’s decision and SCA have three primary components. First, the Governor denied wind turbines within several specific portions of the Project site because of aesthetic and cultural heritage concerns. Second, the Governor approved turbines at yet-to-be-determined locations within the remainder of the

⁶ Ex. B.9 (letter by Washington and Oregon governors regarding the Columbia River Gorge); *see also Skamania County v. Columbia River Gorge Comm’n*, 144 Wash. 2d 30, 59, 62, 26 P.3d 241 (2001) (Ireland, J., concurring) (referring to the Columbia River Gorge as “a pristine national treasure” and a “unique and irreplaceable landscape”); Whistling Ridge Adjudicative Order, Concurrence of EFSEC Chair Luce at n.iii (attached as Ex. B.3) (referring to the Gorge as “a natural wonder” and “an environmental treasure” with “majestic boundaries.”).

⁷ Ex. B.3 (EFSEC Adjudicative Order) at 25, 38; *see also* K. Shawn Smallwood, Comments on the Whistling Ridge Wind Energy Power Project DEIS (Aug. 27, 2010), at 17 (previously submitted as Exhibit C with Friends’ comments on the Whistling Ridge DEIS) (hereinafter “Smallwood DEIS Comments”) (“WEST, Inc. detected 90 species of bird, which etranscriptquals >1 species per hour detected. For comparison, 979 hours of survey at Altamont Pass detected 35 bird species, or 0.036 species per hour. Bird species diversity is much greater at Whistling Ridge than at the Altamont Pass, where bird fatalities caused by wind turbines are notoriously high.”) (endnote omitted).

⁸ *See* FEIS at 3-67.

⁹ Ex. B.3 (EFSEC Adjudicative Order) at 25.

¹⁰ FEIS at 3-46, 3067

¹¹ Prefiled Direct Testimony of Counsel for the Environment’s Witness Don McIvor at 3 (hereinafter “McIvor Direct Testimony”) (attached as Exhibit D.18).

¹² *See id.* at 3-4; Transcript of EFSEC Adjudicative Hearing at 828 (attached as Exhibit B.6) (cross-examination of Don McIvor) (“[T]his is a new habitat-type that we are considering for siting this wind facility. . . [P]redominantly our experience [in the Pacific Northwest] has been with facilities sited in shrub-steppe and agricultural settings. . . [M]y concern is that the resident bird community in the Western Coniferous Forest is a different suite of birds [than] one would encounter, and, therefore, have experience with out in the shrub-steppe.”).

¹³ ER-FRL-8998-8, Environmental Impact Statements; Notice of Availability, 76 Fed. Reg. 54,767 (Sep. 2, 2011). The Whistling Ridge FEIS is available at <http://www.efsec.wa.gov/Whistling%20Ridge/SEPA/FEIS/FEIS.shtml>.

¹⁴ A copy of the Governor’s letter of approval is attached to these comments as Exhibit B.2. Copies of EFSEC’s Adjudicative Order (Order No.868), Recommendation Order (Order No. 869), and letter transmitting these orders to the Governor are attached to these comments as Exhibits B.3, B.4, and B.7, respectively.

Project site. Finally, the Governor limited the maximum number of turbines to 35, rather than the 50 turbines proposed by WRE.¹⁵

Friends and SOSA appealed EFSEC’s and the Governor’s decisions to the Washington state courts. The appeal resulted in a decision by the Washington Supreme Court on August 30, 2013.¹⁶

As is pertinent here, the Washington Supreme Court held that “the final size and location of the [Project] site is not known” and that “further study and agreement [between the Applicant, EFSEC, and/or the Governor] would be required on several issues.”¹⁷ The court further held that multiple issues—including the final project details and impacts, mitigation measures, forest practices, and compliance with the standards in WAC Chapter 463-62¹⁸—remain unresolved and are not yet “ripe” for public review.¹⁹ The court also acknowledged statements made by EFSEC and the Governor that the public will be allowed to participate in the decision-making processes for the unresolved and deferred issues.²⁰

D. The Current Status of the Project

In an April 17, 2014 letter addressed to Friends and SOSA, EFSEC Chair William Lynch reiterated, as decided by the Washington Supreme Court, that further review and decisions by the State of Washington are necessary for the Whistling Ridge Energy Project and its likely impacts before the Project may proceed.²¹

In the same letter, Chair Lynch also stated that the Applicant has not indicated it wants to move forward with the Project or with review of the Project:

If [WRE] wishes to move forward with the Whistling Ridge Energy Project, additional work and review will be needed. EFSEC has not established a timeline for Project development because [WRE] has not requested such action.²²

Finally, Chair Lynch stated that EFSEC will not determine the processes and expected timelines for further Project review unless and until the Applicant notifies EFSEC that it wishes to move forward with the Project:

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¹⁵ See Ex. B.2 (Governor’s approval letter); Ex. B.4 (EFSEC’s Recommendation Order) at 19.

¹⁶ *Friends of the Columbia Gorge, Inc. v. State Energy Facility Site Evaluation Council* (“*Friends v. EFSEC*”), 178 Wash. 2d 320, 310 P.3d 780 (2013).

¹⁷ *Friends v. EFSEC*, 178 Wash. 2d at 331, 339.

¹⁸ WAC Chapter 463-62 contains EFSEC’s “performance standards and mitigation requirements specific to seismicity, noise limits, fish and wildlife, wetlands, water quality, and air quality, associated with site certification for construction and operation of energy facilities under the jurisdiction of the council.” WAC 463-62-010.

¹⁹ *Friends v. EFSEC*, 178 Wash. 2d at 331, 339–43, 347–48.

²⁰ See, e.g., *id.* at 343, 347–48.

²¹ A copy of Mr. Lynch’s letter is attached as Exhibit B.8.

²² *Id.*

Similarly, the specific processes that EFSEC will utilize in conducting its review and public involvement will be determined after [WRE] contacts the Council about moving forward with the project.²³

2. The project details for the proposed Whistling Ridge Project are currently unknown, making any generation interconnection approval premature and inappropriate.

As noted above, the application for generation interconnection indicates that the WRE project “would consist of up to approximately 50, 1.2- to 2.5-MW wind turbines up to 426 feet tall.”²⁴ However, this information is now inaccurate for two reasons.

First, Governor Gregoire reduced the maximum number of turbines from 50 to 35.

Second, the Applicant has not disclosed the number, size, locations, capacity or manufacturer of the turbines proposed for the site. Indeed, according to the applicant, 35 turbines with a nameplate capacity of 2.5 MW cannot be located in the turbine corridors approved by the Governor.

By way of background, following EFSEC’s recommendation to the Governor, WRE filed a petition for reconsideration of EFSEC’s decision and recommendation.²⁵ In its petition, WRE stated that two specific turbine corridors containing five turbines (E-1–E-2 and F-1–F-3) “likely are not viable if turbines larger than 2 MW are used.”²⁶ WRE went on to state that “thirty 2.5-MW turbines cannot physically be sited in [the] remaining . . . corridors.”²⁷ WRE did state that thirty smaller (1.5-MW) turbines could be sited in the remaining corridors, but claimed that such a layout would not be economically viable.²⁸

Accordingly, there is no current plan for the Project reflecting the restrictions imposed by the Governor. The Applicant has failed to disclose the number, size, layout, locations, capacities, and manufacturer of the turbines, as well the total nameplate capacity of the Project as a whole. Nor, to our knowledge, has WRE submitted to BPA or EFSEC any additional technical or other information that might describe WRE’s intentions.²⁹

Lacking this information, the proposal fails to supply the “Information Required for Interconnections” in the *Technical Requirements for Interconnection to the BPA Transmission*

²³ *Id.*

²⁴ Ex. A.1 (BPA’s Whistling Ridge website).

²⁵ WRE’s Petition for Reconsideration is attached to these comments as Exhibit B.5.

²⁶ *Id.* at 2.

²⁷ *Id.*

²⁸ *See id.* at 2–3 (citing Whistling Ridge FEIS at 2-21).

²⁹ On March 20, 2014, and again on June 27, 2014, we emailed BPA asking whether it has been provided with any information regarding the size, rated capacity, anticipated output and/or location of the wind turbines proposed for the Project. To date, we have not received an answer to this question. Therefore, we assume BPA does not hold any information responsive to our requests.

Grid STD-N-000001 (November 2013) (“Technical Requirements”).³⁰ These Technical Requirements require an applicant to provide generator data as follows:

4.3.2 Generator Data

If one or more generators are included as part of the connection request, the following is typical data needed. If different types of generators are included, data for each different type of generator and generator step up transformer is needed.

4.3.2.1 Typical Generator data:

- Energy source (e.g., wind, natural gas, hydro, bio-mass, bio-gas, solar, geothermal, etc.)
- Number of rotating generators
- Number of turbines and type: wind, combustion, steam, hydro, engine generator, etc.
- Number and nameplate rating of static conversion devices (e.g. inverters for solar photovoltaic projects)
- Total nameplate rating in MW
- Nameplate power factor
- Station service load for plant auxiliaries, kW and Kvar
- Station service connection plan (specifically, which distribution utility will provide station service to the project when all generation is off line)³¹

As for variable generation facilities, such as wind energy projects, the following additional information is required:

4.3.2.3 Variable Generation

The following data is generally required of each asynchronous variable Large Generation Plant consisting of multiple generation units connected via a network (collector) system proposed or in operation within BPA’s Balancing Area. Similar data may be required for Small Generation consisting of multiple generation units and other asynchronous generation. The information is required to meet the WECC/NERC compliance requirements for Generation Owners / Generation Operators (GO/GOp).

- Proposed Wind Turbine Generator (WTG) or other variable generator manufacturer and data sheet(s), and main transformer(s) size and impedance.
- Collector system single line diagram that includes any proposed reactive equipment.
- Plant equivalent representation as defined by WECC.
- Submit post construction “as built” updates per WECC/NERC requirements to BPA following project commissioning. Include measured net reactive capability as measured at the POI.
- The owner must submit periodic updates of the Wind Generation Plant to BPA as required for WECC compliance with NERC Reliability Standards.³²

³⁰ A copy of the Technical Requirements is attached to these comments as Exhibit A.2.

³¹ Exhibit A.2 at 18.

³² *Id.*

WRE has not, to our knowledge, submitted a plan for the number, nameplate rating, manufacturer or other pertinent information regarding its generation facilities proposed to be connected to the Federal Columbia River Transmission System (“FCRTS”).

Nor has WRE, to our knowledge, provided a dynamic model of generating plant as required by section 5.3.7:

5.3.7 Generator Performance Testing, Monitoring and Validation

Each generator owner is responsible to provide a dynamic model of its generating plant to BPA. The model will characterize plant responses to system disturbances (voltage and frequency deviations at point of interconnection, oscillations) and control signals (power and voltage schedule). The dynamic model will be a part of the power system model used in system studies to determine operating transfer limits and network reinforcements. An incorrect model may result in incorrect transfer limits, which can either put the system at risk of failure or unnecessarily restrict transmission use.³³

Furthermore, given the current lack of information regarding WRE’s intentions, it cannot provide the “Plant Operational Data” required by section 12.2.6.3.1, as follows:

12.2.6.3.1 Plant Operational Data

Each wind generation plant should provide the Number of turbines and total rated capacity installed (MW). For each turbine:

- model/type, nameplate capacity
- turbine identification number (string/collector line if available)
- individual turbine coordinates (Latitude/Longitude)³⁴

WRE, as an interconnection applicant, has failed to supply the basic information necessary for consideration of the Project, *i.e.*, the type, nameplate rating, and locations of the turbines, to even begin the GIR review process. Accordingly, based on the scant information available about the Project, the GIR should be denied.

In the alternative, if BPA *does* have the required information discussed above, it has an obligation to make this information public and to request public comment, and to issue a supplemental EIS, before it makes a decision to approve the interconnection. BPA’s obligations under NEPA to prepare a supplemental EIS are discussed further below.

3. BPA should not act on the interconnection request until the System Impact Study is revised and updated.

As noted above, the Applicant has not provided any detail regarding the Project and therefore does not meet BPA’s Technical Requirements for Interconnection. In addition, there is apparently no current analysis of the impact this Project will have on the FCRTS.

³³ Exhibit A.2 at 28–29.

³⁴ *Id.* at 98.

In 2008, Puget Sound Energy (“PSE”) requested that BPA prepare a “System Impact Study” (“SIS”) for this project, which at the time was called the “Saddleback Project.” A SIS was prepared, dated April 3, 2008.³⁵ However, after the SIS was completed, PSE abandoned its role in the Project.

In an October 28, 2010 email to SOSA, BPA confirmed that the information in the 2008 SIS is “out of date, but there are no updated reports or studies done since the April 3, 2008 report regarding the connection of the Whistling Ridge project.”³⁶ As far as Friends and SOSA are aware, BPA has yet to update the 2008 SIS.

Now that the State of Washington has denied 15 of the proposed 50 wind turbines, the proposal is in an amorphous state, with no designation of turbine locations or sizes and no information concerning anticipated output. Accordingly, there is no available information that could form the basis for evaluating the Project’s impact on BPA’s transmission system.

The April 2008 SIS also identifies constraints to the delivery of power from this Project caused by limitations in transmission capacity from the Project to load centers in western Washington. Though PSE is no longer the transmission customer, the Applicant has consistently advertised this Project as intended to satisfy power needs in the State of Washington. Accordingly, the SIS needs to be updated to determine if the relevant power flow paths are still constrained.

The April 3, 2008 study is also out of date for other reasons. Since that date, significant additional wind capacity has been added to the FCRTS. BPA’s records show that as of the date the SIS was issued (April 3, 2008), there were 1,301 MW of installed wind capacity in BPA’s balancing authority area, and that since then the capacity has more than tripled.³⁷ The SIS was also prepared before BPA began encountering serious issues with overcapacity because of wind projects.

Whistling Ridge is currently a non-project, with no specifications of the number, size, location, and manufacturer of the turbines. Nor is there any indication when this ambiguous proposal might be ready for review. As such, it is not currently possible to assess the potential impacts of the project on the BPA transmission system. If and when the Applicant supplies basic information about the Project and the requested interconnection, BPA should then prepare a new System Impact Study, prior to acting on the Applicant’s request.

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³⁵ A copy of the 2008 SIS is attached to these comments as Exhibit A.3.

³⁶ A copy of BPA’s email to SOSA is attached to these comments as Exhibit A.4.

³⁷ BPA, Wind Generation Nameplate Capacity in the BPA Balancing Authority Area (Apr. 10, 2013) (attached as Exhibit A.5 and available at http://transmission.bpa.gov/Business/Operations/Wind/WIND_InstalledCapacity_DATA.pdf).

4. Because the Applicant concedes that the Whistling Ridge Energy Project is not economically viable as approved by Governor Gregoire, BPA should deny the interconnection request.

In the attached petition for reconsideration filed with EFSEC, WRE emphatically claimed that the reduction from 50 to 35 turbines renders the entire Whistling Ridge Project economically unviable.³⁸ For example, WRE said the following:

- “In fact, extensive testimony in the record evidences that the recommended Project [with the deleted turbine strings] likely is *not* economically viable.”³⁹
- In reference to EFSEC’s decision to eliminate specific turbine strings, WRE said, “[t]he A1–A7 turbine corridor has a robust wind resource, and eliminating it and the C1–C8 turbine corridor ‘kills the project.’”⁴⁰
- “In sum, the Project size was selected to optimize Project energy output and economic feasibility. A smaller wind turbine facility would be unlikely to offset Project development costs. A larger project would require additional infrastructure capacity and transmission capacity.”⁴¹
- WRE concluded by stating that “an economically unviable project results in no project.”⁴²

In summary, the Applicant claims that the Whistling Ridge project is not economically viable at 35 or fewer turbines in the locations approved by Governor Gregoire. Perhaps this is the reason why WRE has not presented even general details for a revised project, such as the number, size, and locations of the proposed turbines, to EFSEC or other regulators.

Under these circumstances, and given the multiple other wind energy applicants currently seeking generation interconnection, it makes no sense for BPA to approve Whistling Ridge’s GIR. BPA first needs to know that there is strong indication of a serious project.

The Whistling Ridge project is different from other projects vying for a position in the transmission queue. *According to the Applicant itself*, the Whistling Ridge Project is not economically viable as approved by the Governor. As WRE itself has stated, “an economically unviable project results in no project.”⁴³ Because there is no project, there is no basis for approving WRE’s request for interconnection to the FCRTS.

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³⁸ See Ex. B.5 (WRE’s Petition for Reconsideration).

³⁹ *Id.* at 2 (emphasis in original).

⁴⁰ *Id.*

⁴¹ *Id.* at 2–3.

⁴² Ex. B-5 at 3.

⁴³ *Id.*

5. Because the Project has been substantially changed by the decisions of EFSEC and Governor Gregoire, BPA must prepare and issue for public comment a supplemental EIS.

When substantial changes are made to a proposed action, or when there are significant new circumstances or new information relevant to environmental concerns, federal agencies are obligated to prepare a draft supplemental EIS (“SEIS”).⁴⁴ Even after an agency has begun to implement an approved project, it is obligated to supplement the EIS “[i]f there remains major Federal action to occur, and if the new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered.”⁴⁵ Here, the Governor’s reduction of the Whistling Ridge Project from 50 turbines to 35 represents a substantial change to the proposed action. Furthermore, it also represents an alternative that the FEIS rejected out-of-hand as not meeting the project’s purpose and need, and therefore an alternative that has never been evaluated under NEPA.⁴⁶

As noted in the FEIS, BPA eliminated from review any alternatives that would result in a small generation facility, offering the following rationale:

The Applicant also considered the feasibility of a smaller generation facility within the proposed Project Area, either by removing turbines or utilizing a smaller Project Area. However, the Project is being proposed as an “integrated whole”—in other words, as a single generation facility, not pieces of a whole, where some turbines may be eliminated. The proposed Project includes a defined energy output, based on site and design characteristics, market demand, and Applicant objectives. . . . The number of wind turbines within the Project Area already has been minimized to the extent practicable in light of the Applicant’s objectives. Accordingly, if any turbines are removed from the Project design, other locations must be found to replace those turbines to maintain the minimum necessary capacity. The constrained site location and topography limits the ability to relocate turbines within the Project Area.

In sum, the Project size was selected to optimize Project energy output and economic feasibility. A smaller wind turbine facility would be unlikely to offset Project development costs.⁴⁷

In light of the Governor’s decision to limit the Project to 35 turbines instead of the 50 turbines in the original proposed action, the Project no longer meets the Applicant’s stated need, nor the agencies’ stated purpose and need for the Project. Furthermore, as explained above, the Applicant has failed to disclose the number, size, locations, capacity, or manufacturer of the turbines proposed for the site in light of the changes required by Governor Gregoire.⁴⁸

⁴⁴ 40 C.F.R. § 1502.9(c)(1); *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 556–59 (9th Cir. 2000).

⁴⁵ *Friends of the Clearwater*, 222 F.3d at 559.

⁴⁶ See FEIS at 1-13,1-14.

⁴⁷ FEIS 1-14 to 1-15.

⁴⁸ See *supra* Parts 1.C, 1.D, 2.

BPA must reexamine whether a 35-turbine configuration satisfies the Project's purpose and need, and must consider other alternatives for achieving the agencies' and the Applicant's purposes and needs. BPA must then make a new, properly informed decision after issuing an SEIS that fully discloses and discusses the implications of alternative configurations containing 35 or fewer turbines.

Furthermore, as Friends and SOSA previously explained in their April 13, 2012 letter to BPA, it is likely that the Project as modified by Governor Gregoire will never be built, and a BPA decision approving an interconnection would arbitrarily block out other generation facilities waiting in the interconnection queue in favor of the diminished WREP. BPA must prepare an SEIS to fully disclose to the public the likely impacts on other energy projects and the energy grid of a decision to lock up part of the FCRTS's capacity with a project that is now more speculative than ever.

6. A supplemental EIS, jointly prepared by BPA and EFSEC, is necessary to review the numerous unresolved and undecided aspects of the Project.

BPA's NEPA rules require it to "determine the applicability of other environmental requirements early in the planning process, in consultation with other agencies when necessary or appropriate, to ensure compliance and to avoid delays, and [to] incorporate any relevant requirements as early in the NEPA review process as possible."⁴⁹ Similarly, BPA must list in any EIS all government approvals that will be necessary for the Project.⁵⁰

As the Washington Supreme Court held in *Friends v. EFSEC*, numerous aspects of the Whistling Ridge Energy Project have yet to be reviewed, resolved, and decided by the State of Washington. As discussed above, the final project details, including the proposed total nameplate capacity and the capacities, sizes, configuration, layout, and manufacturer(s) of the individual wind turbines have yet to be disclosed by the Applicant and have yet to be approved by EFSEC or Washington's Governor.⁵¹ Because the final Project details are not yet known, the resulting impacts have in turn also not yet been reviewed or decided by the State of Washington.

Furthermore, as held by the Washington Supreme Court, the Applicant has yet to propose or receive approval for the mitigation measures for the Project (in particular for wildlife impacts),⁵² nor for the forest practice activities for the Project, which would inevitably result in the permanent conversion of multiple areas of commercial forest lands to industrial use.⁵³

Perhaps most importantly, as decided by the Supreme Court, the Applicant has yet to demonstrate compliance with the construction and operational standards of WAC Chapter 463-62, and has yet to receive approval from EFSEC under those standards.⁵⁴ In other words, the Project has yet to be reviewed or receive approval for construction purposes under EFSEC's seismicity, noise, fish and wildlife, wetlands, water quality, and air quality standards.

⁴⁹ 10 C.F.R. § 1021.341(b).

⁵⁰ 40 CFR § 1502.25(b).

⁵¹ See *supra* Part 1.C, 2.

⁵² *Friends v. EFSEC*, 178 Wash. 2d at 339-43.

⁵³ *Id.* at 347-48.

⁵⁴ *Id.* at 340-43.

Finally, in addition to the issues discussed by the Supreme Court, the Applicant has yet to submit, and EFSEC has yet to approve, numerous other Project plans and specifications required by EFSEC. These include a final turbine layout and micrositing plan that will minimize scenic impacts when viewed from important public viewing areas,⁵⁵ a construction stormwater pollution prevention plan⁵⁶; an erosion and sediment control plan⁵⁷; a construction spill prevention, control, and countermeasures plan⁵⁸; construction plans for wetlands, streams, and riparian areas⁵⁹; traffic management plans⁶⁰; and a cultural resources monitoring and mitigation plan.⁶¹

If and when the Applicant notifies EFSEC that it wishes to move forward with review of the Project, EFSEC's review of and decisions on the Project will be subject to environmental review under Washington's State Environmental Policy Act ("SEPA")⁶² and EFSEC's SEPA rules,⁶³ and a supplemental EIS will be required under SEPA.⁶⁴ When EFSEC reviews a project for which federal approval is also required (such as the BPA approval required for WRE's pending interconnection request), EFSEC "shall attempt to coordinate" with the relevant federal agency in preparing a joint EIS.⁶⁵

Similarly, BPA's NEPA rules require it to "integrate the NEPA process and coordinate NEPA compliance with other environmental review requirements to the fullest extent possible,"⁶⁶ to "[e]liminat[e] duplication with State and local procedures . . . by providing for joint preparation" of environmental documents,⁶⁷ to "cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements" (*e.g.*, EFSEC's construction and operation standards for energy facilities at WAC Chapter 463-62),⁶⁸ to "cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and comparable State and local requirements" (*e.g.*, Washington's SEPA),⁶⁹ to "cooperate . . . to the fullest extent possible [to prepare] joint environmental impact statements,"⁷⁰ to "cooperate in fulfilling [state environmental review] requirements [such as SEPA] as well as those of Federal laws so that one document will comply with all applicable laws,"⁷¹ to "prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by . .

⁵⁵ See Ex. B.3 (EFSEC Adjudicative Order) at 24 (requiring the Applicant "to prepare [for] approval a micrositing plan that minimizes visual impacts from the Project on sensitive resources (viewing areas identified in [the adjudicative] record plus Mitchell Point").

⁵⁶ See Ex. B.1 (Whistling Ridge SCA) at 18, art. IV.C.2

⁵⁷ See *id.* at 19, art. IV.C.3.

⁵⁸ See *id.* at 19, art. IV.C.4.

⁵⁹ See *id.* at 22, art. IV.E.3.

⁶⁰ See *id.* at 25, art. IV.F.4; Ex. B.3 (EFSEC Adjudicative Order) at 29.

⁶¹ See Ex. B.1 (Whistling Ridge SCA) at 26, art. IV.H.

⁶² RCW Chapter 43.21C.

⁶³ WAC Chapter 463-47.

⁶⁴ See RCW 43.21C.034; WAC 197-11-600(3)(b), (4)(d).

⁶⁵ WAC 463-47-150.

⁶⁶ 10 C.F.R. § 1021.341(a).

⁶⁷ 40 C.F.R. § 1500.4(n).

⁶⁸ *Id.* § 1506.2(b).

⁶⁹ *Id.* § 1506.2(c).

⁷⁰ *Id.*

⁷¹ *Id.*

. other environmental review laws,”⁷² and to combine “[a]ny environmental document [prepared] in compliance with NEPA . . . with any other agency document to reduce duplication and paperwork.”⁷³

Here, BPA and EFSEC should comply with their respective authorities by coordinating to prepare a joint supplemental EIS that will address the remaining agency reviews and decisions regarding the Whistling Ridge Energy Project. BPA should not proceed by itself with a piecemeal environmental review at this time, especially when WRE has not given EFSEC any indication that it wishes to “move forward” with the Project.⁷⁴

7. The cumulative impacts analysis in the 2011 final EIS must be updated in a supplemental EIS.

In preparing an EIS, agencies are required to consider the cumulative impacts a project may have on the environment when “added to other past, present, and reasonably foreseeable future action.”⁷⁵ Review of cumulative impacts must include ecological and aesthetic effects.⁷⁶ Here, because both wind energy capacity and other sizable development projects within the analysis area have increased dramatically since 2011, the cumulative impacts analysis in the 2011 FEIS is outdated and inadequate.

A. Because installed wind energy capacity has increased dramatically since 2011, the cumulative impacts analysis in the FEIS is outdated and inadequate.

At the end of 2010 (six months after the Whistling Ridge DEIS was issued and eight months before the FEIS was issued), Oregon and Washington each had 2,104 MW of installed wind energy capacity.⁷⁷ Only three years later, at the end of 2013, these figures had increased dramatically: Washington had added 704 MW, for a total of 2,808 MW, and Oregon had added 1,049 MW, for a total of 3,153MW—increases of 33.5% and 49.9%, respectively.⁷⁸ These newly constructed projects require an updated cumulative impacts analysis to properly consider cumulative impacts to scenic and natural resources.

For example, according to the “Cumulative Impacts Analysis” section of the FEIS, as of 2011, only eighteen existing wind projects were located in the analysis area.⁷⁹ Since that 2011 analysis, however, several additional wind projects have been completed and connected to the energy grid in the analysis area. These include three of the Shepherds Flat projects (North

⁷² *Id.* § 1502.25(a).

⁷³ *Id.* § 1506.4.

⁷⁴ Ex. B.8 (EFSEC letter).

⁷⁵ 40 CFR § 1508.7.

⁷⁶ *Id.* § 1508.8.

⁷⁷ American Wind Energy Association, *AWEA U.S. Wind Industry Annual Market Report Year Ending 2010* at 11 (2011) (attached as Exhibit C.1).

⁷⁸ American Wind Energy Association, *AWEA U.S. Wind Industry Fourth Quarter 2013 Market Report* at 6 (Jan. 30, 2014) (attached as Exhibit C.2).

⁷⁹ Whistling Ridge FEIS at 3-273–276; fig. 3.14-1 (map of existing and proposed development at 3-276).

Hurlburt , South Hurlburt, and Horseshoe Bend).⁸⁰ These three projects alone total 845 MW in wind energy capacity that has been added to the grid since 2011 within the analysis area.

Other wind projects have been proposed in the analysis area since 2011, or were proposed before then but were omitted from the cumulative impacts analysis in the 2011 FEIS. These include the Saddle Butte Wind Park (399 MW), Rock Creek Wind (550 MW), the Baseline Wind Energy Facility (500 MW), Goodnoe Hills II (56 MW), Imrie/Goodnoe Hills II (34 MW), Lund Hill Wind Farm (60 MW), and School Section Wind Project (20 MW).⁸¹ These seven projects total another 1,619 MW of proposed wind energy capacity that BPA did not consider in the original analysis.

In addition, the FEIS understates the total capacity of the projects in Klickitat County initiated by Cannon Power. The FEIS lists Windy Point (Tuolomne) (137 MW) and Windy Flats–Dooley (113 MW), for a total of only 250 MW,⁸² and also shows Windy Flats 2–Dooley on the analysis map as a project that was then under construction.⁸³ A Klickitat County map, however, identifies four Cannon Power Projects that have a combined capacity of 629.5 MW: Windy Flats, Windy Flats West, Windy Point, and Windy Point II.⁸⁴ Cannon Power’s own website, on the other hand, identifies two phases of a single project with a total capacity of 500 MW, 400 MW of which has been constructed.⁸⁵ The true scope of Cannon’s project(s) must be determined and identified in order for a meaningful analysis of cumulative impacts to occur. This is particularly important given the fact that the Windy Flats West project (not shown on Figure 3.14-1 in the Whistling Ridge FEIS but shown on the Klickitat County map) is the closest proposed wind project to the Whistling Ridge site and, like Whistling Ridge, would be sited immediately north of the Columbia River Gorge National Scenic Area.⁸⁶

Furthermore, the cumulative impacts analysis in the 2011 FEIS contains additional errors that should be corrected. For instance, the narrative omits the existing 72 MW Willow Creek Project,⁸⁷ even though that project is depicted on the map at Figure 3.14-1.⁸⁸

In summary, the portions of the cumulative impacts analysis addressing wind energy in the 2011 FEIS are erroneous, incomplete, and outdated. Overall, the FEIS understates the

⁸⁰ BPA, *Current and Proposed Wind Project Interconnections to BPA Transmission Facilities*, http://www.bpa.gov/transmission/Projects/wind-projects/Documents/BPA_wind_map_2012.pdf (July 11, 2012) (attached as Exhibit C.3); Renewable Northwest Project, *Renewable Energy Projects*, http://rnp.org/project_map (accessed June 27, 2014); Klickitat County, *Klickitat County Wind Projects*, <http://www.klickitatcounty.org/planning/FilesHtml/windprojects.pdf> (July 6, 2011) (attached as Exhibit C.4); U.S. Geological Survey Energy Resources Program, *windFarm* (interactive map of U.S. wind turbines), available at <http://eerscmap.usgs.gov/windfarm/> (accessed June 30, 2014).

⁸¹ See wind project maps in prior footnote.

⁸² FEIS at 3-274.

⁸³ FEIS at 3-276

⁸⁴ Exhibit C.4 (Klickitat County map).

⁸⁵ Cannon Power Group, *Windy Point/Windy Flats, State of Washington* (available at <http://www.cannonpowergroup.com/wind/projects/wp-wf/>) (accessed June 27, 2014).

⁸⁶ See Exhibit C.4 (Klickitat County map).

⁸⁷ See FEIS at 3-274–3-275.

⁸⁸ FEIS at 3-276.

cumulative impacts of wind energy in the region. A supplemental EIS should be prepared to revise, correct, and update the cumulative impacts analysis.

B. The cumulative impacts analysis in the FEIS must be supplemented to evaluate the cumulative impacts of several large-scale transmission and energy projects (other than wind projects) within the analysis area.

The cumulative impacts analysis in the 2011 FEIS also reviews reasonably foreseeable large-scale development projects other than wind energy projects, such as “transportation improvements, communications facilities, and power line improvements.”⁸⁹ The FEIS concluded that, as of 2011, “only the Oregon Department of Transportation bridge replacement projects, now in progress along I-84, were considered close enough to the Project Area to be included in the cumulative impact analysis.”⁹⁰ Since the issuance of the FEIS, however, other large-scale projects have been proposed and/or constructed within the analysis area.

One such project is BPA’s Big Eddy-Knight transmission project, a 28-mile long transmission line through the analysis area.⁹¹ Construction of the Big-Eddy Knight project began in 2011 and has been temporarily halted because of concerns over cultural resources, but is estimated to be complete by 2015.⁹² The Big Eddy-Knight’s transmission lines and towers will affect resources in the analysis area, particularly scenic, natural, and cultural resources. The Big Eddy-Knight project needs to be included in an updated cumulative impacts analysis.

Another large-scale transmission project, still in scoping at this time, is the Bonneville-Hood River Transmission Line Rebuild project. This project would rebuild a 24-mile-long transmission line through the analysis area, including locations south of the Whistling Ridge site.⁹³ As with the project described above, the Bonneville-Hood River project will impact scenic and natural resources in the analysis area and needs to be included in order for BPA’s cumulative impacts analysis to be meaningful.

In addition, the cumulative impacts analysis in the Whistling Ridge FEIS does not consider two other BPA transmission projects within the analysis area: the McNary-John Day Transmission Project⁹⁴ and the I-5 Corridor Reinforcement Project.⁹⁵ Construction for the

⁸⁹ 2011 FEIS at 3-275–3-276.

⁹⁰ *Id.* at 3-275.

⁹¹ BPA, Map of Big Eddy-Knight Transmission Project (Sept. 2011) (available at http://efw.bpa.gov/environmental_services/Document_Library/Big_Eddy-Knight/pdf/Map_for_ROD.pdf and attached as Exhibit C.6); BPA letter regarding Big Eddy-Knight Transmission Project (June 6, 2014) (available at http://efw.bpa.gov/environmental_services/Document_Library/Big_Eddy-Knight/pdf/BigEddyKnightLetterJune_6_2014.pdf and attached as Exhibit C.7).

⁹² Ex. C.7.

⁹³ BPA, Proposed Bonneville-Hood River Transmission Line Rebuild Project (Feb. 19, 2014) (available at http://efw.bpa.gov/environmental_services/Document_Library/HoodRiver/Bonneville-Hood-River_2D_SCOPING_PROJECT_MAP.pdf and attached as Exhibit C.8); BPA letter regarding Bonneville-Hood River Transmission Line Rebuild (Mar. 4, 2014) (available at http://efw.bpa.gov/environmental_services/Document_Library/HoodRiver/Bonneville-Hood-River_2B_SCOPING_PUBLIC_LETTER.pdf and attached as Exhibit C.9).

⁹⁴ BPA, McNary-John Day Transmission Line Project, (Feb. 9, 2009) (available at http://www.bpa.gov/transmission/Projects/line-projects/Documents/map-McNary-John_Day-October_2008.pdf and

McNary-John Day project is either entirely or mostly complete,⁹⁶ and the I-5 Project is currently planned for 2018.⁹⁷ Both of these projects need to be included in an updated cumulative impacts analysis for the Whistling Ridge proposal.

Similarly, the Whistling Ridge cumulative impacts analysis omits the Cascade Crossing Transmission Project, a double-circuit 500 kV transmission line proposed by Portland General Electric that would extend from Boardman, Oregon, through the Whistling Ridge analysis area, to Salem, Oregon.⁹⁸ The cumulative impacts of the Cascade Crossing project must be evaluated in a supplemental EIS for the Whistling Ridge proposal.

Finally, the cumulative impacts analysis in the Whistling Ridge FEIS does not consider the Troutdale Energy Center, a proposal to construct a 653 MW natural gas power plant and associated transmission lines at the Port of Troutdale, within the Whistling Ridge cumulative impacts analysis area.⁹⁹ This industrial energy project, if built, would contribute to cumulative adverse resource impacts within the analysis area, including the impacts of air pollution as well as the scenic impacts of the facility's structures (exhaust stacks, cooling towers, and transmission lines). BPA must prepare a supplemental EIS that evaluates the Troutdale Energy Center in the cumulative impacts analysis.

8. BPA should evaluate whether the dramatic increases in regional wind energy capacity and transmission capacity since the 2011 FEIS affect the stated purposes and need for the Whistling Ridge Project.

As discussed in the previous section of this comment letter, there has been a rapid and dramatic increase in the region in wind energy capacity (both installed and proposed) and in transmission capacity since issuance of the 2011 FEIS. BPA should evaluate whether these substantial changes in conditions affect the purposes and need for the Whistling Ridge Project as identified in the FEIS.

For instance, among BPA's stated purposes in deciding whether to allow WRE's requested interconnection are to "[m]aintain the electrical stability and reliability of the FCRTS"

attached as Exhibit C.10).

⁹⁵ See BPA, I-5 Corridor Reinforcement Project Update (June 2014) (available at <http://www.bpa.gov/Projects/Projects/I-5/2013Documents/I-5%20Corridor%20Newsletter%20-%20JUNE2014-FINAL.PDF> and attached as Exhibit C.12); BPA, *I-5 Project Interactive Map 2012*, available at <http://gis.bpa.gov/gis/i5/gmviewer.html> (accessed June 30, 2014).

⁹⁶ See BPA Memo regarding Supplemental Analysis for the McNary-John Day Transmission Line Project Final EIS (Aug. 6, 2012) (available at http://efw.bpa.gov/environmental_services/Document_Library/Mcnary-John_Day/FEIS-0332-SA-04-McNary-JohnDayFY12_WEB.pdf and attached as Exhibit C.11).

⁹⁷ Ex. C.12 (I-5 Corridor Reinforcement Project Update).

⁹⁸ Portland General Electric, Map of Cascade Crossing Project (Jan. 14, 2013) (available at http://www.portlandgeneral.com/our_company/energy_strategy/proposed/cascade_crossing/docs/cc_map.pdf and attached as Exhibit C.13); BPA, *Regional Transmission Projects: BPA and Other Northwest Utilities* (Apr. 30, 2012) (available at http://www.bpa.gov/transmission/Projects/Documents/regional_tx_projects_map.pdf and attached as Exhibit C.5).

⁹⁹ Or. Dept. of Energy, Public Notice, Troutdale Energy Center Thermal Combustion Power Project (Jan. 12, 2012) (available at http://www.oregon.gov/energy/Siting/docs/TEC/TEC_NOI_PublicNotice.pdf and attached as Exhibit C.14).

and to “[c]ontinue to meet BPA’s statutory and contractual obligations.”¹⁰⁰ As has been well-documented by BPA outside of the review of this Project, even where contracts exist with wind power companies, BPA has often been forced to deny these companies access to the FCRTS because of overgeneration and environmental redispatch issues.¹⁰¹ Contracting with WRE to allow more wind energy to connect to the FCRTS would only exacerbate these problems.

Another of BPA’s stated purposes in the FEIS is to “[a]ct consistently with BPA’s environmental and social responsibilities.”¹⁰² As more wind energy connects to the grid, the same environmental redispatch issues will frustrate BPA’s efforts to act consistently with its environmental responsibilities, such as its requirements to protect imperiled salmonids listed under the Endangered Species Act.

BPA’s final stated purpose is to “[p]rovide for cost and administrative efficiency.”¹⁰³ Oversupply and environmental redispatch have already proven costly and time-consuming for the agency. The more wind energy is added to the grid, the more money and time must be allocated to coming up with solutions to the problems of oversupply. This provides for neither cost efficiency nor administrative efficiency.

As for the Applicant’s stated purposes and needs, the FEIS identifies a “Regional Need for New Sources of Renewable Energy.”¹⁰⁴ However, with the substantial increases in installed and proposed wind energy since issuance of the 2011 FEIS discussed above, any regional need has likely changed, requiring further review. BPA and EFSEC should evaluate current regional need in a supplemental EIS.

Furthermore, the FEIS supposedly identifies a “[r]egional [n]eed” for wind energy,¹⁰⁵ but the narrative discussion of this so-called regional need focuses almost exclusively on the state of Washington, virtually ignoring Oregon (and briefly mentioning California,¹⁰⁶ which is not in the Pacific Northwest). A supplemental EIS is needed to evaluate actual regional need, and as part of that analysis the Applicant should clarify whether the project is proposed to meet demand specifically in Washington, the Pacific Northwest, or some other state.

¹⁰⁰ FEIS at 1-4.

¹⁰¹ BPA, *Potential for Seasonal Power Oversupply in 2013* (Feb. 20, 2013) (available at <https://www.bpa.gov/Projects/Initiatives/Oversupply/OversupplyDocuments/2013/20130222-Potential-for-seasonal-power-oversupply-in-2013.pdf> and attached as Exhibit C.15); BPA, *OS-14 Oversupply Rate Proceeding Administrator’s Record of Decision* (Mar. 27, 2014) (available at <http://www.bpa.gov/news/pubs/RecordsofDecision/rod-20140327-OS-14-Oversupply-Rate-Proceeding.pdf> and attached as Exhibit C.16); BPA, *Request for Approval of Revised Oversupply Management Protocol* (Mar. 1, 2013) (available at <http://www.bpa.gov/Projects/Initiatives/Oversupply/OversupplyDocuments/2013/20130301-Revised-Attachment-P-Filing.pdf> and attached as Exhibit C.17); FERC, *Order Conditionally Accepting Compliance Filing* (Dec. 20, 2012) (available at <http://elibrary.ferc.gov/IDMWS/common/opennat.asp?fileID=13138292> and attached as Exhibit C.18); FERC, *Order Denying Rehearing* (Dec. 20, 2012) (available at <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13138195> and attached as Exhibit C.19).

¹⁰² FEIS at 1-4.

¹⁰³ FEIS at 1-4.

¹⁰⁴ FEIS at 1-4.

¹⁰⁵ FEIS at 1-4.

¹⁰⁶ *See id.* at I-4-I-7 (“In 2008, California increased its [Renewable Portfolio Standard] goal from 20 percent to 33 percent renewable energy by 2020.”).

In addition, the discussion of regional need in the 2011 FEIS relies on the September 2009 *draft* Sixth Northwest Power Plan.¹⁰⁷ The *final* version of that plan, however, was released in February 2010 and thus was available at the time the 2011 FEIS was issued.¹⁰⁸ The revised analysis of regional need should consider the *final* Sixth Northwest Power Plan.

Finally, the FEIS asserts an Applicant-identified “Need for Reliable Transmission for the Proposed Project.”¹⁰⁹ The FEIS further states that the Applicant needs “to provide new energy resources within the next three to five years” and asserts that “it is critical to locate projects in areas where transmission lines currently exist.”¹¹⁰ Currently, however, the Applicant is giving EFSEC no indication that it desires to proceed with the proposed Project within the three- to five-year window stated in the FEIS (*i.e.*, 2014 to 2016), thus obviating the expressly stated need for the Project during the stated time period.¹¹¹ The stated purposes and needs for the Project should be reevaluated in the form of a supplemental EIS.

9. An SEIS is required to evaluate new information regarding impacts to wildlife and to fully disclose the Project’s impacts to wildlife.

A. Noise Impacts

The FEIS for this Project contains no meaningful discussion of the impacts from noise on birds and other wildlife.¹¹² However, independent of this EIS, noise impacts to wildlife have been widely studied. For example, after the public comment period on the draft EIS for the WREP closed in August 2010, the National Park Service’s Natural Sounds Program published a bibliography of noise impacts on wildlife that includes more than 150 publications.¹¹³ BPA should evaluate this bibliography and the sources cited therein in a supplemental EIS.

Noise from the construction and operation of industrial-scale wind energy projects is likely to significantly affect birds and other wildlife within the Project site and in the surrounding area. In a summary of noise effects from wind projects on wildlife published in late 2010 (after the NEPA public comment process closed for the WREP), the U.S. Fish & Wildlife Service (“USFWS”) described that “[t]urbine blades at normal operating speeds can generate significant levels of noise” and that “it is possible that effects to sensitive species may be occurring at ≥ 1 mile from the center of a wind facility at periods of peak sound production.”¹¹⁴ Furthermore,

¹⁰⁷ FEIS at I-5.

¹⁰⁸ A copy of the Northwest Power and Conservation Council’s Final Sixth Northwest Power Plan (2010) can be found at <https://www.nwcouncil.org/media/6284/SixthPowerPlan.pdf> and is attached to these comments as Exhibit C.20.

¹⁰⁹ FEIS at I-6.

¹¹⁰ *Id.*

¹¹¹ *See* Ex. B.8.

¹¹² *See, e.g.*, FEIS at 3-115 to 3-138 (“Noise” section evaluating only noise impacts to humans); FEIS at 3-291 (noise impacts section with no discussion of noise impacts to wildlife); FEIS at 3-33 to 3-85 (“Biological Resources” section with no discussion of turbine noise impacts to wildlife).

¹¹³ National Park Service Natural Sounds Program, *Annotated Bibliography, Noise Impacts on Wildlife* (Aug. 2011) (available at http://www.nature.nps.gov/naturalsounds/pdf_docs/wildlifebiblio_Aug2011.pdf and attached as Exhibit D.1).

¹¹⁴ U.S. Fish & Wildlife Service, *The Effects of Noise on Wildlife* (2011), at 1 (available at

“[n]oise does not have to be loud to have negative effects.”¹¹⁵ USFWS expressly draws a connection between studies of traffic noise and the noise generated by wind turbines, noting that because “wind-generated noise including blade turbine noise produces a fairly persistent, low frequency sound similar to that generated by traffic noise . . . it is plausible that wildlife effects from these two sound sources could be similar.”¹¹⁶

The USFWS states that “noise impacts to wildlife should clearly be included as a factor in wind turbine siting, construction and operation.”¹¹⁷ Some of the key issues to be addressed are:

- 1) how wind facilities affect background noise levels;
- 2) how and what fragmentation, including acoustical fragmentation, occurs especially to species sensitive to habitat fragmentation;
- 3) comparison of turbine noise levels at lower valley sites – where it may be quieter – to turbines placed on ridge lines above rolling terrain where significant topographic sound shadowing can occur having the potential to significantly elevate sound levels above ambient conditions; and
- 4) correction and accounting of a 15 decibel (dB) underestimate from daytime wind turbine noise readings used to estimate nighttime turbine noise levels.¹¹⁸

USFWS’s direction to thoroughly evaluate the potential noise impacts of proposed wind energy projects is unambiguous:

Given the mounting evidence regarding the negative impacts of noise—specifically low frequency levels of noise such as those created by wind turbines on birds, bats and other wildlife, it is important to take precautionary measures to ensure that noise impacts at wind facilities are thoroughly investigated prior to development. Noise impacts to wildlife *must* be considered during the landscape site evaluation and construction processes.¹¹⁹

USFWS points out that “[w]ind turbine noise results in a high infrasound component. Infrasound is inaudible to the human ear but this unheard sound can cause human annoyance, sensitivity, disturbance, and disorientation.”¹²⁰ These effects may be more profound on birds, bats, and other wildlife. This is because “[n]oise from traffic, wind and operating turbine blades

<http://www.fws.gov/windenergy/docs/Noise.pdf> and attached as Exhibit D.2).

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 2 (citation omitted).

¹¹⁷ *Id.* at 1.

¹¹⁸ *Id.* (citation omitted).

¹¹⁹ *Id.* at 3 (emphasis added).

¹²⁰ *Id.* at 1 (emphasis added) (citation omitted).

*produce low frequency sounds (< 1–2 kHz). Bird vocalizations are generally within the 2–5 kHz frequency range and birds hear best between 1–5 kHz.”*¹²¹

USFWS also notes the following:

[V]arying sources and levels noise can affect both the sending and receiving of important acoustic signaling and sounds. This also can cause behavioral modifications in certain species of birds and bats such as decreased foraging and mating success and overall avoidance of noisy areas. The inaudible frequencies of sound may also have negative impacts to wildlife.¹²²

Finally, USFWS notes that “data suggest noise increases of 3 dB to 10 dB correspond to 30% to 90% reductions in alerting distances for wildlife, respectively.”¹²³ Thus, USFWS concludes that the “[i]mpacts of noise could thus be putting species at risk by impairing signaling and listening capabilities necessary for successful communication and survival.”¹²⁴

Despite the overwhelming science showing that wind turbine noise has serious impacts to birds and other wildlife, the FEIS contains no analysis whatsoever of noise impacts to wildlife. The FEIS describes that “[p]otential operation-related impacts to avian species include turbine collision and displacement,”¹²⁵ but does not describe how noise from the constant operation of the turbines, which the FEIS elsewhere acknowledges to be as high as 40 dB, will affect birds and other wildlife species.¹²⁶ Other recent research has shown that some organisms never habituate to noise, and even those individuals that outwardly appear to habituate suffer decreased fitness.¹²⁷

B. Failure to Quantify Impacts to Birds and Bats from Mortality Caused by Blade Strikes

Despite the heavy use of the Project area’s forested environment by birds and bats, the FEIS does not make any attempt to quantify the likely number of bird, golden eagle, or bat deaths, except to predict a zero mortality for raptors.¹²⁸ In his written testimony attached to Friends’ August 2010 comments on the Whistling Ridge DEIS, Dr. K. Shawn Smallwood documented that the survey methodologies employed by WREP’s consultants were inadequate to accurately predict mortality. Applying methodologies similar to those used by several federal agencies that have evaluated the impacts of industrial-scale wind facilities, Dr. Smallwood estimated that “the minimum numbers of annual fatalities at Whistling Ridge would likely be 33 raptors, 422 birds (including raptors), and 86 bats.”¹²⁹

¹²¹ *Id.* at 1 (emphasis added) (citation omitted).

¹²² *Id.* at 3.

¹²³ *Id.* at 2–3.

¹²⁴ *Id.* at 3.

¹²⁵ FEIS at 3-80.

¹²⁶ FEIS at 3-123 (fig. 3.7-1).

¹²⁷ See Clinton D. Francis & Jesse R. Barber, *A Framework for Understanding Noise Impacts on Wildlife: an Urgent Conservation Priority*, *Frontiers in Ecology and the Environment* (2013) (attached as Exhibit D.3).

¹²⁸ See FEIS at 3-79–3-82.

¹²⁹ Smallwood DEIS Comments at 26.

Qualitative analyses are acceptable in an EIS only where an agency explains “why objective data *cannot* be provided.”¹³⁰ “[A] general statement about uncertainty does not satisfy the procedural requirement that an agency take a hard look at the environmental effects of an action. The BPA can certainly explain specific projections with reference to uncertainty; however, it may not rely on a statement of uncertainty to avoid even attempting the requisite analysis.”¹³¹ Here, BPA neither included a quantitative estimate nor any explanation why none could be provided. In similar wind projects reviewed under NEPA, other federal agencies, such as the Bureau of Land Management, have had no trouble estimating the potential number of bird and bat deaths and making this information available to the public and decision makers, as NEPA requires.¹³² BPA fails to meet that same standard here.

Since the DEIS and FEIS for this Project were issued, there have been several years of operations of industrial-scale wind energy projects around the country, and several studies of mortality at these projects. For example, a recent study of the 16-turbine, 40 MW Sheffield Wind project in a forested area of Vermont reported an estimated 13.17 birds and 14.65 bats killed per turbine during a seven-month period¹³³—suggesting that a larger project in a forested habitat like the WREP will likely result in a significant number of bird and bat deaths.

In addition, a 2013 joint study by biologists with the U.S. Fish and Wildlife Service and the Migratory Bird Center of the Smithsonian Conservation Biology Institute entitled “*Estimates of bird collision mortality at wind facilities in the contiguous United States*” concludes that avian mortality at wind facilities is a serious concern and stresses “the importance of considering species-specific and location-specific risks and the potential for cumulative impacts of multiple wind facilities and multiple mortality threats.”¹³⁴ The FEIS fails to contain the level of rigorous surveys and analysis that this recent science recommends.

The need to quantify and assess expected mortalities is especially important for the Whistling Ridge Project. The American Wind Wildlife Institute recently observed that bird fatalities “in the Pacific region may be significantly higher” than in other regions of the United States.¹³⁵

BPA’s failure to provide a quantitative estimate of bird mortality violates NEPA. Furthermore, despite the absence of any attempt to quantify the likely bird mortality caused by the WREP’s operations, the FEIS concludes that the Project’s impacts to bird and bat populations will be “extremely small.”¹³⁶ In light of the guidance and science discussed above, this conclusion is arbitrary and not supported by adequate analysis. BPA should prepare an SEIS

¹³⁰ *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 994 (9th Cir. 2004) (emphasis added); *see also id.* at 994 n.1 (A qualitative description, by itself, is suitable only for factors incapable of being quantified).

¹³¹ *Or. Natural Res. Council v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007).

¹³² *See, e.g.*, N. Steens Transmission Project FEIS (Oct. 2011) at 3.5-38, 3.5-39, 3.5-47 (attached as Exhibit D.4).

¹³³ Colleen Martin, Ed Arnett & Mark Wallace, Evaluating Bird and Bat Post-Construction Impacts at the Sheffield Wind Facility, Vermont, at 3 (Mar. 25, 2013) (attached as Exhibit D.5).

¹³⁴ Scott R. Loss, Tom Will & Peter P. Marra, Estimates of bird collision mortality at wind facilities in the contiguous United States, at 8 (Oct. 14, 2013) (attached as Exhibit D.6).

¹³⁵ American Wind Wildlife Institute, *Wind Turbine Interactions with Wildlife and their Habitats: A Summary of Research Results and Priority Questions* (Jan. 2014) (attached as Exhibit D.13).

¹³⁶ FEIS at 3-286.

that evaluates current guidance and science on avian and bat mortality, and should allow public comment on *quantitative estimates* of the likely numbers of birds and bats that the WREP will kill during its anticipated operative life.

Coupled with the FEIS's failure to evaluate noise impacts to wildlife,¹³⁷ which will likely harm the ability of birds in the proximity of the Project to communicate and survive, the FEIS's analysis of likely mortality impacts of birds and bats caused by blade strikes is inadequate and in violation of NEPA. An SEIS is necessary to address these impacts.

C. Golden Eagles and Bald Eagles

The FEIS documents that both bald and golden eagles use the Project site and relies on surveys conducted at various times from 2004 through 2009.¹³⁸ After the FEIS was prepared and issued, the USFWS has issued a series of guidance documents regarding wildlife impacts from industrial wind facilities, notably the 2012 Land-Based Wind Energy Guidelines¹³⁹ and the 2013 Eagle Conservation Plan Guidance.¹⁴⁰ These guidelines call for far more robust surveys of avian use for wind projects than were conducted by WREP's consultants for this Project more than five years ago.

The USFWS recommends that project proponents implement four types of surveys to assess risks to eagles at proposed wind projects: (1) point count surveys, which mainly generate occurrence data for use in risk assessment models; (2) migration ("hawk watch") counts, documenting hourly passage rates of eagles; (3) utilization distribution assessments, which account for intensities in use for different parts of species' home range within a project's footprint; and (4) surveys of nesting territory occupancy in the project area.¹⁴¹ The USFWS's guidance further describes the methods that should be used for each of the four types of surveys. WREP's consultant did not use these methods.

For example, USFWS's guidelines indicate that surveys for eagles and other large birds need to be conducted separate from those for small birds (*i.e.*, because it is ineffective to survey for large birds while searching and recording flight patterns of small birds).¹⁴² The stale surveys for the WREP did not satisfy these protocols. WREP's consultants did not conduct any surveys exclusively for eagles.

Even if one considers the WREP's general avian use surveys an acceptable substitute for the focused eagle surveys recommended by the USFWS, those surveys did not conform to the minimum levels needed to assess risk to eagles. The USFWS has established the *minimum* inventory and monitoring efforts that "are essential components" for avoiding and minimizing disturbance and other kinds of take of golden eagles.¹⁴³ The surveys that were conducted for the

¹³⁷ See *supra* Part 9.A.

¹³⁸ FEIS at 3-46, 3-47.

¹³⁹ Ex. D.8.

¹⁴⁰ U.S. Fish & Wildlife Service, Eagle Conservation Plan Guidance, Module 1 – Land-Based Wind Energy (Version 2) (Apr. 2013) (attached as Exhibit D.9).

¹⁴¹ See *id.* at app. C, pp. 53–65.

¹⁴² See *id.* at 55.

¹⁴³ U.S. Fish & Wildlife Serv., Interim Golden Eagle Inventory & Monitoring Protocols (Feb. 2010) at 1 (attached as Ex. D.7).

WREP did not meet the minimum requirements currently established by the USFWS and the scientific community as necessary to avoid taking bald and golden eagles. Furthermore, the 2012 Land-Based Wind Energy Guidelines specify more robust survey protocols to accurately assess the risk to *all* birds from industrial-scale energy facilities.¹⁴⁴ BPA should evaluate, in an SEIS, the Applicant's risk assessment for consistency with the current guidelines.

In addition, a recent study by several USFWS biologists documents that at least 85 golden eagles have been killed at industrial-scale wind projects.¹⁴⁵ The threats of wind energy projects to eagle populations is much greater now than when the Applicant's original avian surveys at the WREP site were conducted, some as far back as ten years ago. Given that golden eagles are declining, and that they have been observed at the WREP site, BPA should prepare an SEIS that discloses the most recent information regarding the status of eagles and all relevant expert agency guidance, and should require the Applicant to conduct surveys that allow an *accurate* estimate of the Project's likely impacts on eagles.

D. Failure to Evaluate Relative Abundance of Sensitive-Status Species

Not only does the FEIS fail to quantify likely impacts to birds and bats, it also fails to consider the relative abundance of sensitive-status species at the Project site.

The FEIS discusses impacts to a number of individual species, including bald eagle, golden eagle, northern goshawk, northern spotted owl, olive-sided flycatcher, and Vaux's swifts.¹⁴⁶ Yet nowhere does the FEIS attempt to calculate the relative abundance of these species at the Project site, or evaluate the number of likely fatalities by species. Instead, the FEIS simply compares the total number of *birds* observed at the project site—without regard to species—with the total number of birds estimated to inhabit the Columbia Plateau Ecoregion.¹⁴⁷

Nevertheless, it is black-letter law that NEPA requires a “hard look” not only at the bare number of wildlife fatalities that are expected to result from a project, but also at these fatalities in comparison to the abundance of each affected species.¹⁴⁸ Otherwise, the expected impacts of a project may be “diluted to insignificance” through the use of a scale of analysis so broad that it would mask the true impacts.¹⁴⁹ Obviously, killing a few individual animals from an abundant species will have a much different impact than killing a few individuals from a species that has already been depleted.

Here, documents cited in the FEIS indicate that certain sensitive species with overall low population levels in the state of Washington are found at the Whistling Ridge Project site in relatively high numbers, as compared to other sites in the state where wind energy projects have been proposed. For example, despite the fact that the sites of the proposed Coyote Crest and Radar Ridge wind facilities consist of commercial forestland similar to that at the Whistling

¹⁴⁴ Ex. D.8 (Land-Based Wind Energy Guidelines) at 26–32.

¹⁴⁵ Joel E. Pagel et al., *Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in the Contiguous United States*, 47 *Journal of Raptor Research* 311 (2013) (attached as Exhibit D.10).

¹⁴⁶ FEIS at 3-76–77, 3-79–80, 3-85, 4-5.

¹⁴⁷ See, e.g., FEIS at 3-287 (Table 3.14-1).

¹⁴⁸ See, e.g., *Anderson v. Evans*, 371 F.3d 475, 490 (9th Cir. 2004).

¹⁴⁹ *Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1036 (9th Cir. 2001).

Ridge site, no olive-sided flycatchers have been documented at those other project sites,¹⁵⁰ compared to 27 olive-sided flycatchers observed at Whistling Ridge.¹⁵¹ In addition, avian use studies for the Whistling Ridge Project documented Vaux's swifts 38 times more frequently¹⁵² and northern goshawks 14 times more frequently¹⁵³ than at the sites for EFSEC's previously approved wind facilities. In light of the relatively high numbers of sensitive-status species at the Whistling Ridge site, an SEIS should be prepared to evaluate the potential impacts on these species.

To aid BPA's analysis of the relative abundance of species at the Project site, attached to these comments are excerpts from the Partners in Flight ("PIF") Population Estimates Database.¹⁵⁴ These data contain Washington-specific population estimates for several sensitive-status species found at the Project site (including the olive-sided flycatcher and Vaux's swift). At EFSEC's adjudicative hearing, Greg Johnson, one of the consultants hired by the Applicant to work on the FEIS, admitted that he failed to consult this database.¹⁵⁵ BPA should review the PIF database and should ensure that the SEIS reflects the most up-to-date information on species abundance and distribution.

E. Failure to Include Critical Information on Impacts to Bats

In addition to its failure to quantify impacts to birds and bats and to consider the relative abundance of sensitive-status species at the Project site, the FEIS also fails to include critical information regarding impacts to bats.

As noted by Don McIvor, the consulting wildlife ecologist retained by the Counsel for the Environment for EFSEC's adjudication, the Applicant's pre-project bat surveys were seriously flawed. Because BPA's FEIS is based on these same flawed studies, BPA's analysis must be reconsidered as it relates to bat impacts.

¹⁵⁰ See Coyote Crest FEIS, at app. C, tables 1 & 2 (Jan. 2009) (2007–2008 Avian Baseline Study) (attached as Exhibit D.11); Wildlife Baseline Studies for the Radar Ridge Wind Resource Area, Pacific County, Washington: Final Report, April 15, 2008 – June 18, 2009 (2009), at Table 10 (attached as Exhibit D.12). The Whistling Ridge FEIS cites and relies on both of these bird survey reports. See Whistling Ridge FEIS at 3-287 (table 3.14-1), 3-299.

¹⁵¹ See FEIS at 3-57.

¹⁵² At the Whistling Ridge site, the mean numbers of Vaux's swifts observed per twenty-minute survey, averaged across all seasons, was .115 birds per survey. See Whistling Ridge FEIS at app. C-4, table 4. By contrast, the average frequency of observations of Vaux's swifts at the Kittitas Valley, Desert Claim, and Wild Horse facilities was only .003 birds per twenty-minute survey. See Western EcoSystems Technology, Inc., Cumulative Impacts Analysis for Avian and Other Wildlife Resources from Proposed Wind Projects in Kittitas County, Final Report (Feb. 1, 2007) (available at <http://www.efsec.wa.gov/kittitaswind/feis/Vol%20I%20Appendices/App.%20A%20text.pdf> and attached as Exhibit D.16) (summarizing bird observations for three wind projects in Kittitas County).

¹⁵³ Mean observations of northern goshawks at the Whistling Ridge site was .028 birds per survey. See Whistling Ridge FEIS at app. C-4, table 4. On average, at the Kittitas County project sites, only .002 northern goshawks were observed per survey. Ex. D.16 at app. A, table 2.

¹⁵⁴ See Exhibit D.17 on the enclosed CD. The database may also be accessed at the following URL: <http://rmbo.org/pifpopestimates/>.

¹⁵⁵ See Ex. B.6 at 710.

For example, Mr. McIvor explained that the Applicant's wildlife studies fail at even the most rudimentary level—namely, at the identification of affected bat species.¹⁵⁶ The FEIS itself acknowledges this fundamental shortcoming.¹⁵⁷ Without knowing which bat species use the Project site, the FEIS cannot draw credible conclusions about impacts.

In addition, the FEIS's analysis of bat impacts is premised on the false assumption that data from other wind facilities in non-forested habitats may be used to extrapolate impacts at the Project site.¹⁵⁸ However, as Mr. McIvor explained,

No wind energy sites have been developed in Western coniferous forest habitat. Other wind power projects in Washington are located in significantly different types of habitat and data gathered from these sites cannot be used to extrapolate potential impacts of the proposed project site. This is especially a concern in light of the disproportionate impact wind energy facilities are believed to have on forest bats.¹⁵⁹

Mr. McIvor's conclusions were recently echoed by the American Wind Wildlife Institute, which has explained that “[s]tudies have not found a consistent pattern of fatalities across landscape types.”¹⁶⁰ As a result, the FEIS's reliance on data from other wind projects, located in disparate habitat types, means that the FEIS likely misrepresents the Project's true impacts to bats.

Finally, the Applicant's pre-project studies failed to cover the breeding season for bats, which further undermines the reliability of the data and the FEIS's conclusions.¹⁶¹ The Applicant should be required to correct this skewed and misleading data, and BPA should reevaluate its analysis of impacts to bats.

In conclusion, an SEIS should be prepared to reevaluate the FEIS's conclusions regarding impacts to bats, and to include proper information and analysis regarding bat species' use and distribution at the Project site.

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¹⁵⁶ See McIvor Direct Testimony (Exhibit D.18) at 11 (“With the exception of the hoary bat, the bats using the site have not been identified by species. Accordingly, potential impacts to specific species of bats are impossible to assess. Any stated [e]ffect on populations, which are unknown, is purely conjectural”).

¹⁵⁷ See FEIS, app. C-9 (Final Report, Bat Acoustic Studies for the Saddleback Wind Resource Area, Skamania County, Washington) (Jan. 28, 2009), at 8 (“Acoustic bat surveys were unable to determine bat species present in the study area (except for hoary bats), but they were able to distinguish high frequency from low-frequency species.”).

¹⁵⁸ See FEIS, app. C-9 at 8–9 (concluding, based on a comparison to data obtained from Grayland Wind Resource Area in Pacific County, Washington, and the Maple Ridge project in New York, that the “relatively high use of the project area by bats . . . may not necessarily equate to high bat mortality levels”).

¹⁵⁹ McIvor Direct Testimony (Exhibit D.18) at 11.

¹⁶⁰ See Ex. D.13 at 4.

¹⁶¹ See McIvor Direct Testimony (Exhibit D.18) at 11 (explaining that the Applicant's survey equipment “worked less than 25 percent of the time and the breeding season for bats was missed. The value of that year's data is questionable because of the equipment problems, and a conservative analysis should not include that data because of its shortcomings”).

F. Mitigation Measures for Adverse Impacts to Wildlife

The FEIS should be supplemented to evaluate mitigation measures for adverse impacts to wildlife, particularly to birds.

NEPA regulations require BPA to discuss possible mitigation measures as a means to “mitigate adverse environmental impacts.”¹⁶² An EIS must show that the mitigation measures have been “developed to a reasonable degree.”¹⁶³ A perfunctory description, or ‘mere listing’ of mitigation measures, without supporting analytical data,” is insufficient.¹⁶⁴ In addition, the agency must analyze the *effectiveness* of the proposed mitigation.¹⁶⁵

The FEIS fails to disclose and discuss the effectiveness of potential mitigation, particularly with respect to avian impacts. Section 3.4.3 of the FEIS is precisely the sort of “mere listing” of mitigation measures that violates NEPA. Notably, the FEIS does not discuss the preparation of a Bird & Bat Protection Plan, which is a feature of the environmental analysis for virtually every other industrial-scale wind project (including those where a generation site is located on private land with a federal nexus via a transmission line, such as the Echanis Project on North Steens Mountain).¹⁶⁶ The FEIS does not adequately disclose or evaluate mitigation measures. An SEIS is required to rectify this error.

As a result of the shortcomings in the FEIS, the BPA cannot meaningfully evaluate the Project’s mitigation measures until EFSEC completes its internal review process. As the Washington Supreme Court recently held in *Friends v. EFSEC*, the project’s mitigation measures for wildlife impacts have yet to be proposed:

The only finding EFSEC made as to habitat mitigation was that it was required. Similarly, the SCA acknowledges that a [habitat mitigation] parcel has been proposed but makes no finding as to the adequacy of that parcel, instead requiring WREP to work with WDFW to take appropriate mitigation measures. As *the actual mitigation measures are yet to be determined . . .*¹⁶⁷

Accordingly, the Court held that issues involving mitigation for wildlife impacts were not “ripe” for review:

We need not address this argument because, regardless of whether [Friends and SOSA were given] enough time . . . to prepare a challenge to the [Applicant’s proposed habitat mitigation] parcel, EFSEC itself held that the parcel had not been formally offered and the issue is not ripe.¹⁶⁸

Because the Applicant has yet to propose detailed mitigation measures, such measures are no more ripe now (for BPA’s review) than they were two years ago (for EFSEC’s review).

¹⁶² 40 C.F.R. § 1502.16(h).

¹⁶³ *Nat’l Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001).

¹⁶⁴ *Id.*

¹⁶⁵ *S. Fork Band Council of W. Shoshone v. U.S. Dep’t of Interior*, 588 F.3d 718, 727 (9th Cir. 2009).

¹⁶⁶ See Ex. D.4 (North Steens Transmission Line EIS) at Appendix F.

¹⁶⁷ 178 Wash. 2d at 342 (emphasis added).

¹⁶⁸ *Id.* at 343 n.17.

As the Washington Supreme Court observed, the Applicant has yet to pursue the vast majority of the required steps for proposing mitigation measures, including delineating a process for determining the Project’s actual impacts to habitat; proposing habitat mitigation, which includes mapping habitat types within the project area and specifying mitigation ratios; preparing a habitat mitigation plan in consultation with the Washington Department of Fish and Wildlife; and creating a process for determining any future need for supplemental mitigation once the Project begins operation.¹⁶⁹ These steps are required now, in order to determine the true impacts of the Project. BPA should delay the issuance of an SEIS until after the Applicant proposes (and the State of Washington approves) each of these mitigation measures.

G. BPA should review the most recent science on wildlife impacts.

As discussed above, NEPA imposes on every federal agency the obligation to issue a supplemental EIS whenever there is “new information . . . that the remaining action will ‘affect the quality of the human environment’ in a significant manner or to a significant extent not already considered.”¹⁷⁰ To that end, the enclosed CD contains a recent report by the USDA Forest Service entitled “*Synthesis of Wind Energy Development and Potential Impacts on Wildlife in the Pacific Northwest, Oregon and Washington*” (herein “USDA Report”).¹⁷¹ This report contains a wealth of information on the most recent scientific analyses of wind energy impacts on wildlife. BPA should review this report to determine whether it contains new information warranting an SEIS.

Below, we include several quotes from the USDA report which cast doubt on the conclusions and analysis in the Whistling Ridge FEIS. After each quote, we provide a brief explanation of its relevance to BPA’s supplemental environmental review.

- “*Habitat loss resulting from noise is often associated with roads, but wind turbine noise has also been discussed in the literature on wildlife and wind energy.*”¹⁷²

As explained above, the Whistling Ridge FEIS contains a dearth of information on wildlife noise impacts.¹⁷³

- “*Wind energy development in forest areas may influence the availability of tree roosts through vegetation modification. Alternatively, researchers have also suggested that because bats use edge habitat between forest and nonforest areas, wind energy development may lead to higher bat activity at the site, and more collisions.*”¹⁷⁴

“*There are concerns that wind energy facilities themselves modify habitat in a manner that attracts bats. The forest edges created by access roads may create hotspots of bat activity because edges enhance bat foraging for insects.*”¹⁷⁵

¹⁶⁹ *Id.* at 339–43; see also Ex. B.1 (Whistling Ridge SCA) at 20–21.

¹⁷⁰ *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 374, 109 S. Ct. 1851 (1989) (quoting 42 U.S.C. § 4332(c)).

¹⁷¹ The USDA Report is attached as Exhibit D.14.

¹⁷² *Id.* at 13.

¹⁷³ See *supra* Part 9.A.

¹⁷⁴ Ex. D.14 (USDA Report) at 17.

¹⁷⁵ *Id.* at 25.

In contrast, the FEIS fails to discuss the Project’s potential to increase bat usage of the area.

- *“Beyond the direct changes associated with wind energy facility construction and operation, wind energy facilities may also lead to greater indirect effects on habitat that play out over longer timeframes, such as introduction of invasive species, alteration of fire regimes, and increased predator populations.”*¹⁷⁶

Relevant here, the FEIS contains information of the threat of wildfire to cultural resources and human health and safety,¹⁷⁷ but it does not analyze the threat of wildfire to the area’s wildlife populations.

- *“Understanding the population-level effects of these [bird] collisions requires information on species abundance and distribution, as well as the combined effects of other wind energy facilities.”*¹⁷⁸

In contrast, the FEIS does not contain information on the relative abundance of avian and bat species in comparison to other areas and regions of the Pacific Northwest.

- *“Placing wind energy facilities in areas commonly used by raptors, such as slopes of hills or ridges, is thought to increase mortalities.”*¹⁷⁹

The Project is proposed to be sited on high ridges above the Columbia River. As a result, the FEIS may underestimate impacts to raptors and other avian species.

- *“Bird mortality rates often differ seasonally (e.g., most passerine fatalities in North America occur between April and October).”*¹⁸⁰

In contrast, the FEIS reports that the Applicant performed avian use studies over a cumulative nine months of the year, completely failing to conduct any studies between mid-July and mid-September.¹⁸¹ Because the Applicant failed to perform studies during a substantial and important period of time, the FEIS likely underestimates impacts to avian species, including passerines and songbirds.

- *“Without more information on the relative abundance of different [bat] species prior to wind energy development, and the overall population abundance and distribution of bat species, it is challenging to evaluate the population-level impacts, or the cumulative effects of multiple wind-energy developments.”*¹⁸²

¹⁷⁶ *Id.* at 13.

¹⁷⁷ *See* FEIS at 3-248.

¹⁷⁸ Ex. D.14 (USDA Report) at 19.

¹⁷⁹ *Id.* at 21.

¹⁸⁰ *Id.* at 23.

¹⁸¹ *See* FEIS at 3-60.

¹⁸² Ex. D.14 (USDA Report) at 24.

As noted above, the FEIS fails to specify which bat species use the Project site, and in what relative abundance.¹⁸³ As a result, the FEIS likely underestimates impacts to bats.

- *“Bat fatalities at wind energy facilities increase exponentially with wind turbine height, with the highest mortalities experienced with turbines taller than 65 m.”*¹⁸⁴

The State of Washington has authorized the use of turbines as tall as 430 feet (*i.e.*, 131 meters, which is well above 65 meters).¹⁸⁵ BPA should reevaluate the project in light of the USDA’s acknowledgment of the special impacts associated with towers taller than 65 meters.

10. The Project and proposed interconnection require permits under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

The eagles that use the Project area and the migratory birds that will certainly be killed by the WREP’s operations are protected under the Migratory Bird Treaty Act (“MBTA”) and, in the case of eagles, the Bald and Golden Eagle Protection Act (“BGEPA”). The BGEPA provides that “[w]hoever ... without being permitted to do so ... shall knowingly, or with wanton disregard for the consequences of his act take” any bald or golden eagle is liable for criminal and civil penalties.¹⁸⁶ “Take” in the BGEPA includes killing, molesting or disturbing eagles.¹⁸⁷ Anyone who takes an eagle violates the BGEPA unless the take is authorized by a USFWS permit.¹⁸⁸ The MBTA protects migratory birds.

Like the BGEPA, the MBTA directs that “it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture [or] kill . . . any migratory bird . . . nest, or egg of any such bird” unless permitted by the Interior Secretary.¹⁸⁹ “Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect.”¹⁹⁰ USFWS regulations establish criteria for MBTA permits, including a provision that authorizes a permit when an applicant—which can include a federal agency—demonstrates a “compelling justification.”¹⁹¹ The MBTA requires that the USFWS enforce criminal penalties against “any person” that “by any means or in any manner” takes or kills a migratory bird.¹⁹² The killing of a migratory bird giving rise to take liability does not need to be intentional, and the killing can occur “by any means or in any manner.”¹⁹³

Any unpermitted taking of eagles and other birds therefore violates the BGEPA and MBTA.¹⁹⁴ Any person who is “‘adversely affected or aggrieved’ by an agency action alleged to

¹⁸³ See *supra* Part 9.E.

¹⁸⁴ Ex. D.14 (USDA Report) at 24.

¹⁸⁵ Ex. B.1 (Whistling Ridge SCA) at 9.

¹⁸⁶ 16 U.S.C. § 668(a)-(b).

¹⁸⁷ *Id.* § 668c.

¹⁸⁸ *Id.* § 668(a); 50 C.F.R. § 22.26.

¹⁸⁹ 16 U.S.C. § 703(a).

¹⁹⁰ 50 C.F.R. § 10.12.

¹⁹¹ 50 C.F.R. § 21.27.

¹⁹² 16 U.S.C. §§ 703, 707.

¹⁹³ *United States v. Moon Lake Electric Ass’n, Inc.*, 45 F. Supp. 2d 1070, 1075–79 (D. Col. 1999) (upholding prosecution of a utility for unintentionally electrocuting and killing seventeen birds).

¹⁹⁴ 16 U.S.C. § 703(a); 16 U.S.C. § 668(a)-(b).

have violated the MBTA” may bring a civil suit to challenge that action.¹⁹⁵ BPA will be in violation of these statutes if it authorizes the interconnection of the WREP project without first obtaining permits under these statutes, because the federal action will be the but-for cause of the avian deaths that will result from the project. Without the interconnection, the WREP project would not be built, and eagles and migratory birds would not be taken. Agency actions that directly kill migratory birds subject the agency to MBTA liability and the statute’s permitting requirement.¹⁹⁶ Furthermore, any interconnection approval by BPA is subject to revocation if these laws are violated. “The [APA] requires federal courts to set aside federal agency action that is ‘not in accordance with law,’ which means, of course, any law, and not merely those laws that the agency itself is charged with administering.”¹⁹⁷

11. An SEIS is required to evaluate new information regarding impacts to scenic resources and to fully disclose the Project’s impacts to scenic resources.

The FEIS does not adequately disclose the Project’s likely scenic impacts (including impacts to aesthetic, heritage, and recreation resources). In particular, the FEIS significantly understates the Project’s likely scenic impacts to the Columbia River Gorge and several communities in the vicinity of the Project site.

As determined by both EFSEC and Governor Gregoire, the Project would result in significant and unacceptable adverse impacts to scenic resources. For example, EFSEC’s Council members unanimously concluded that “the aesthetic and cultural values of the Gorge, irrespective of its designation as a NSA, require protection from pronounced visual intrusion” and that “entire wind production towers rising more than 40 stories above the skyline on a prominent ridge, with smooth modern designs contrasting markedly with rugged natural formations, would be readily noticeable and intrusive into the surrounding view.”¹⁹⁸ EFSEC ultimately concluded that “[r]emoving towers from corridors in which they would be prominently visible from numerous key viewing areas within and near the Gorge [was necessary to] protect the scenic and cultural heritage of the Gorge.”¹⁹⁹ EFSEC also determined that even with these reductions, the “remaining towers may be partially visible from some viewing areas, and significantly visible from a small number of locations.”²⁰⁰ Further, Governor Gregoire determined that “[e]ven with a reduction to 35 turbines, there would be unavoidable impacts on the unique visual resources of the Columbia River Gorge.”²⁰¹

These findings of Governor Gregoire and EFSEC stand in marked contrast to the analysis of scenic impacts in the FEIS. The FEIS repeatedly finds low to moderate scenic impacts, and

¹⁹⁵ *City of Sausalito v. O’Neill*, 386 F.3d 1186, 1204 (9th Cir. 2004) (quoting 5 U.S.C. § 702).

¹⁹⁶ *Humane Soc’y v. Glickman*, 217 F.3d 882, 884-88 (D.C. Cir. 2000) (intentional killing of geese as part of a control program); *Ctr. for Biol. Diversity v. Pirie*, 191 F. Supp. 2d 161, 174-78 (D.D.C. 2002) (direct but incidental killing of migratory birds as part of naval gunnery exercises).

¹⁹⁷ *FCC v. NextWave Pers. Commc’ns*, 537 U.S. 293, 300, 123 S. Ct. 832 (2003) (internal citation omitted).

¹⁹⁸ Ex. B.3 (EFSEC Adjudicative Order) at 20, 37. EFSEC Chair Jim Luce further found in his concurring opinion that the Project will result in a “significant impact in this environmentally sensitive area, especially to its unparalleled viewscapes.” Ex. B.3 (EFSEC Adjudicative Order, Concurrence of Chairman Jim Luce) at 46.

¹⁹⁹ Ex. B.3 (EFSEC Adjudicative Order) at 37.

²⁰⁰ *Id.*

²⁰¹ Ex. B.2 (Governor’s approval letter) at 2.

utterly fails to consider any alternatives, such as removing or relocating certain turbines, to reduce scenic impacts. In short, the FEIS does not fully disclose or evaluate the Project's true scenic impacts.²⁰²

Further, EFSEC rejected and discredited the Applicant's analysis of scenic impacts in WRE's Application, which was *prepared by the same consultants and is virtually the same as the analysis in the FEIS*. For example, in their Adjudicative Order, the EFSEC Council members found that the Applicant's analysis "inappropriately discount[s]" the natural conditions of the affected Gorge landscape,²⁰³ and "reject[ed]" the Applicant's assertions that existing agricultural and industrial elements in the Gorge landscape "so degrade the entire scenic setting that we should all but entirely discount the aesthetic, cultural and historical significance of the Gorge and the scenic attributes that it possesses today and allow all proposed tower corridors despite the contrast and intrusion of complete towers across prominent ridgelines."²⁰⁴

Ultimately, EFSEC concluded that the Applicant's analysis "inappropriately discounts the intrusive nature of full-tower and significant prominent-tower views on skyline views in the Columbia Gorge setting."²⁰⁵ Accordingly, EFSEC recommended, and the Governor decided, to deny nearly one-third of the proposed turbines in order to protect these views.²⁰⁶

EFSEC's Council members also performed an analysis that the FEIS does not: they quantitatively compared the numbers of turbines that would be visible from various viewpoints, both for the full 50-turbine Project and a modified project denying 15 of the proposed turbines.²⁰⁷ This quantitative analysis represents the beginnings of exactly what NEPA requires for the scenic impacts of the WREP: a true analysis of impacts, with both quantitative and qualitative elements, that reviews several alternatives in the form of different turbine layouts. With a project like the WREP—proposed to be sited across multiple mountain ridges and hills and surrounded by a number of communities and recreational sites as well as complex intervening topography—the exact siting of each individual turbine matters immensely. Each proposed turbine would be highly visible from certain viewpoints, but not at all visible from other viewpoints. The communities of the Columbia River Gorge are legally entitled to be fully informed of the tradeoffs, in terms of scenic impacts, of different alternative Project layouts.

BPA should prepare a supplemental EIS that evaluates and distinguishes the scenic impacts of alternative Project layouts. This analysis should provide both quantitative data (*e.g.*, disclosing the numbers of turbines visible from various viewpoints for each alternative), and qualitative information (*e.g.*, providing visual simulations and expert analysis of the impacts). In preparing this analysis, BPA should consider the previously submitted comments of the National Park Service and USDA Forest Service regarding the Draft EIS, as well as the new information

²⁰² One reason for the shortcomings in the Applicant's scenic impacts analysis was that none of the Applicant's consultants were licensed landscape architects. *See* Ex. B.6 (Transcript of EFSEC Adjudicative Hearing) at 224, 290.

²⁰³ Ex. B.3 (EFSEC Adjudicative Order) at 37.

²⁰⁴ *Id.* at 21.

²⁰⁵ *Id.* at 19.

²⁰⁶ *Id.* at 2; Ex. B.4 (EFSEC Recommendation Order) at 7, 13–14; Ex. B.2 (Governor's approval letter) at 1.

²⁰⁷ Ex. B.3 (EFSEC Adjudicative Order) at 23 (Table 1, Viewing Site Analysis).

found in the decisions of Governor Gregoire and EFSEC and the expert analysis of the Project's impacts by landscape architect Jurgen Hess.²⁰⁸

12. BPA should review recent studies on the adverse effects of wind energy development on human health and on the human environment.

Recent studies highlight the adverse effects of wind energy development on human health and on the human environment. BPA should review these studies in a supplemental EIS.

For example, the Oregon Health Authority's "Strategic Health Impact Assessment on Wind Energy Development in Oregon" (March 2013) documents that epidemiological studies have linked wind turbine noise to increased annoyance, feelings of stress and irritation, sleep disturbance, and decreased quality of life.²⁰⁹

In addition, Health Canada is currently conducting a study to evaluate the extent of the known and acknowledged adverse health effects from industrial wind installations.²¹⁰

In its Winter 2014 issue, *Acoustics Today* published an article entitled "How Does Wind Turbine Noise Affect People?," which summarizes "[t]he many ways by which unheard infrasound and low-frequency sound from wind turbines could distress people."²¹¹

Finally, a July 2012 study from the U.K. concluded that wind turbine noise can severely disrupt sleep for people in residential properties within 1.4 kilometers (approximately 0.87 miles) of a wind energy generation facility, resulting in a degree of stress sufficient to impair health, and explained that wind turbine noise cannot be treated the same way as other noise sources.²¹²

Many residential properties near the proposed WREP site lie within the 1.4-kilometer distance documented in the UK study. BPA should evaluate these and similar studies in a supplemental EIS in order to properly determine the full extent of the WREP's impacts, before agreeing that a wind project should be built where it could harm human health.

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²⁰⁸ A copy of Mr. Hess's analysis is attached to these comments as Exhibit E.1; *see also* Ex. B.6 (Transcript of EFSEC Adjudicative Hearing) at 565–68 (Testimony of Jurgen Hess). Mr. Hess is the former lead landscape architect and planning manager for the USDA Forest Service's Columbia River Gorge National Scenic Area office. He has more than forty years of experience with scenic resources issues, include more than three decades working for the Forest Service. Ex. E.1 at 1.

²⁰⁹ The Oregon Health Authority's report is attached as Exhibit F.1.

²¹⁰ *See* Health Canada, *Health Impacts and Exposure to Sound From Wind Turbines: Updated Research Design and Sound Exposure Assessment* (available at http://www.hc-sc.gc.ca/ewh-semt/consult/2013/wind_turbine-eoliennes/research_recherche-eng.php and attached as Exhibit F.3) (accessed June 30, 2014).

²¹¹ Alec N. Salt & Jeffery T. Lichtenhan, *How Does Wind Turbine Noise Affect People?*, *Acoustics Today*, Winter 2014, at 20 (attached as Exhibit F.4).

²¹² Christopher Hanning, *Wind Turbine Noise, Sleep and Health*, at 3, 30 (July 2012) (attached as Exhibit F.2).

13. Conclusion

For the foregoing reasons, Friends and SOSA request that the BPA *deny* WRE's generation interconnection request for the Whistling Ridge project. The Applicant has failed to supply necessary information about the proposal and has also explained that the Project as modified by Governor Gregoire is not economically viable and will not proceed.


In addition, Friends and SOSA request that BPA cooperate with EFSEC to prepare a joint supplemental EIS for the Project reviewing its final details, impacts, and mitigation measures, prior to any further agency decisions on the Project.

Thank you in advance for your consideration of our comments. If you have any questions or comments, please do not hesitate to contact us. In addition, if there are any responses to these comments by BPA staff, the Applicant, or others, please forward them to the undersigned.

Sincerely,



Nathan Baker
Staff Attorney
Friends of the Columbia Gorge



Gary K. Kahn
Reeves, Kahn, Hennessy & Elkins
Attorney for Friends of the Columbia Gorge



J. Richard Aramburu
Aramburu & Eustis, LLP
Attorney for Save Our Scenic Area

Enclosures (Exhibits)

cc: Elliot Mainzer, Bonneville Power Administration
The Honorable Jay Inslee
William Lynch, Chair, Washington Energy Facility Site Evaluation Council
Stephen Posner, Manager, Washington Energy Facility Site Evaluation Council
Ann Essko, Assistant Attorney General, Office of the Washington Attorney General
Timothy L. McMahan, Stoel Rives LLP, Attorney for Whistling Ridge Energy LLC
Susan P. Jensen, Counsel for the Environment
Nanette Seto, Chief for Migratory Birds and Habitat Programs, USFWS Region 1

**Comments of Friends of the Columbia Gorge and Save Our Scenic Area
Regarding the Whistling Ridge Energy Project (DOE/EIS-0419)
Skamania County, Washington**

INDEX OF EXHIBITS

A. Bonneville Power Administration Documents

Exhibit No.	Document Description	Date
A.1	BPA, Excerpt of Whistling Ridge Energy Project Website	June 10, 2014
A.2	BPA, Technical Requirements for Interconnection to the BPA Transmission Grid	Nov. 6, 2013
A.3	BPA, Transmission System Impact Study, Puget Sound Energy, Inc.	Apr. 3, 2008
A.4	BPA, Email to SOSA regarding 2008 System Impact Study	Oct. 28, 2010
A.5	BPA, Wind Generation Nameplate Capacity in the BPA Balancing Authority Area	Apr. 10, 2013

B. Washington EFSEC & Governor Documents

Exhibit No.	Document Description	Date
B.1	Site Certification Agreement Between the State of Washington and Whistling Ridge Energy LLC	Mar. 5, 2012
B.2	Governor Gregoire, Whistling Ridge Letter of Approval	Mar. 3, 2012
B.3	WA EFSEC, Council Order No. 868 (Adjudicative Order)	Oct. 6, 2011
B.4	WA EFSEC, Council Order No. 869 (Recommendation Order)	Oct. 6, 2011
B.5	Whistling Ridge Energy LLC, Applicant's Petition for Reconsideration	Oct. 27, 2011
B.6	WA EFSEC, Transcript of Whistling Ridge Adjudicative Hearing	Jan. 3, 2011
B.7	WA EFSEC, Transmittal Letter to Governor Gregoire	Jan. 4, 2012
B.8	WA EFSEC, Letter from Chair Lynch to Friends & SOSA	Apr. 17, 2014
B.9	Washington and Oregon Governors, Letter Regarding the Columbia River Gorge	2011

C. Cumulative Impacts and Regional Energy Needs

Exhibit No.	Document Description	Date
C.1	American Wind Energy Association, AWEA U.S. Wind Industry Annual Market Report Year Ending 2010	2011
C.2	American Wind Energy Association, AWEA U.S. Wind Industry Fourth Quarter 2013 Market Report	Jan. 30, 2014

C.3	BPA, Map of Current and Proposed Wind Project Interconnections to BPA Transmission Facilities	July 11, 2012
C.4	Klickitat County, Map of Klickitat County Wind Projects	July 6, 2011
C.5	BPA, Map of Regional Transmission Projects: BPA and Other Northwest Utilities	Apr. 30, 2012
C.6	BPA, Map of Big Eddy-Knight Transmission Project	Sept. 2011
C.7	BPA, Big Eddy-Knight Transmission Project Status Update Open Letter	June 6, 2014
C.8	BPA, Map of Proposed Bonneville-Hood River Transmission Line Rebuild Project	Feb. 19, 2014
C.9	BPA, Bonneville-Hood River Transmission Line Rebuild Project Scoping Letter	Mar. 4, 2014
C.10	BPA, Map of McNary-John Day Transmission Line Project	Feb. 9, 2009
C.11	BPA, McNary-John Day Transmission Line Project FEIS Supplemental Analysis	Aug. 6, 2012
C.12	BPA, I-5 Corridor Reinforcement Project Update	June 2014
C.13	Portland General Electric, Map of Cascade Crossing Transmission Project	Jan. 14, 2013
C.14	Oregon Dept. of Energy, Public Notice, Troutdale Energy Center Thermal Combustion Power Project	Jan. 12, 2012
C.15	BPA, Potential for Seasonal Power Oversupply in 2013	Feb. 20, 2013
C.16	BPA, OS-14 Oversupply Rate Proceeding, Administrator's Record of Decision	Mar. 27, 2014
C.17	BPA, Request for Approval of Revised Oversupply Management Protocol	Mar. 1, 2013
C.18	FERC, Order Conditionally Accepting Compliance Filing	Dec. 20, 2012
C.19	FERC, Order Denying Rehearing	Dec. 20, 2012
C.20	Northwest Power & Conservation Council, Sixth Northwest Conservation and Electric Power Plan	Feb. 2010

D. Wildlife Impacts of Wind Energy

Exhibit No.	Document Description	Date
D.1	National Park Service, Annotated Bibliography on Impacts of Noise on Wildlife	Aug. 2011
D.2	U.S. Fish & Wildlife Service, The Effects of Noise on Wildlife	2011
D.3	Francis & Barber, A Framework for Understanding Noise Impacts on Wildlife: An Urgent Conservation Priority	Aug. 2013
D.4	Bureau of Land Management, North Steens 230-kV Transmission Line Project FEIS	Oct. 2011
D.5	Martin et al., Evaluating Bird and Bat Post-Construction Impacts at the Sheffield Wind Facility, Vermont	Mar. 24, 2013
D.6	Loss et al., Estimates of Bird Collision Mortality at Wind Facilities in Contiguous United States	Oct. 14, 2013

D.7	U.S. Fish & Wildlife Service, Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations	Feb. 2010
D.8	U.S. Fish & Wildlife Service, Land-Based Wind Energy Guidelines	Mar. 23, 2012
D.9	U.S. Fish & Wildlife Service, Eagle Conservation Plan Guidance, Module 1 – Land-based Wind Energy Version 2	Apr. 2013
D.10	Pagel et al, Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in Contiguous United States	2013
D.11	Tetra Tech EC, Inc., 2007–2008 Avian Baseline Study from Coyote Crest Wind Park EIS	Jan. 2009
D.12	Western EcoSystems Technology, Inc., Wildlife Baseline Studies for the Radar Ridge Wind Resource Area	Dec. 9, 2009
D.13	American Wind Wildlife Institute, Wind Turbine Interactions with Wildlife and their Habitats	Jan. 2014
D.14	USDA Forest Service, Synthesis of Wind Energy Development and Potential Impacts on Wildlife in the Pacific Northwest	July 2012
D.15	U.S. Geological Survey, Bats and Wind Energy—A Literature Synthesis and Annotated Bibliography	2012
D.16	Western EcoSystems Technology, Inc., Cumulative Impacts Analysis for Avian and Other Wildlife Resources from Proposed Wind Projects in Kittitas County, Final Report	Oct. 2003
D.17	Partners in Flight Science Committee, Excerpts from Population Estimates Database	2013
D.18	Washington Counsel for the Environment, Prefiled Direct Testimony of Witness Don McIvor	Nov. 1, 2010
D.19	Resume of Don McIvor	Nov. 1, 2010

E. Scenic Impacts of Wind Energy

Exhibit No.	Document Description	Date
E.1	Testimony of Jurgen A. Hess	Jan. 5, 2011

F. Health Impacts of Wind Energy

Exhibit No.	Document Description	Date
F.1	Oregon Health Authority, Strategic Health Impact Assessment on Wind Energy Development in Oregon – Final Report	Mar. 2013
F.2	Christopher Hanning, Wind Turbine Noise, Sleep and Health Report	July 2012
F.3	Health Canada, Health Impacts and Exposure to Sound From Wind Turbines: Updated Research Design and Sound Exposure Assessment	2014
F.4	Alec N. Salt & Jeffery T. Lichtenhan, How Does Wind Turbine Noise Affect People?	Winter 2014