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JOINT NEPA/SEPA

FINAL ENVIRONMENTAL IMPACT STATEMENT

WASHINGTON WINDPLANT #1

PROPOSED BY: KENETECH
WINDPOWER, INC.

LEAD AGENCIES:

KLICKITAT COUNTY, WASHINGTON

BONNEVILLE POWER ADMINISTRATION

MAY 1995

DOE/EIS-0205

Cover Memo

KENETECH Windpower, Inc., proposes to construct and operate the 115-megawatt (MW) Washington Windplant No. 1 (proposed Project) in the Columbia Hills area, southeast of Goldendale, in Klickitat County, Washington. The Project would be constructed on private land under easement to KENETECH Windpower, Inc. (the Applicant).

The proposed Project will require a Conditional Use Permit from Klickitat County, Washington, and a Transmission Services Agreement between the Bonneville Power Administration (BPA) and the utilities that will purchase the Project's output from the Applicant. An Environmental Impact Statement (EIS) for the proposed Project is required under both National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) guidelines.

In February 1995, a joint NEPA/SEPA draft EIS for the proposed Project was issued by Klickitat County and the Bonneville Power Administration, which are the lead agencies under SEPA and NEPA, respectively, for the EIS. A public hearing on the draft EIS was held in Goldendale on April 5, 1995. Oral and written comment was accepted. The close of comment period for the draft EIS was April 17, 1995.

This document and the *Draft Joint NEPA/SEPA Environmental Impact Statement, Washington Windplant #1* together constitute the Final Joint NEPA/SEPA EIS for the Washington Windplant #1. The Final EIS is issued under Section 102 (2)(C) of NEPA at U.S.C. 4321 *et seq* and under SEPA as provided by RCW 43.21C.030 (2)(c). The final EIS is being issued on May 30, 1995, under SEPA, and will be issued under NEPA upon the notice date in the Federal Register.

In addition to the Fact Sheet, this document includes the following major discussions:

- *Revised Summary.* The Revised Summary replaces the Summary in the draft EIS and incorporates revisions to the Proposed Action, the addition of the Preferred Alternative, and other changes made in response to comments on the draft EIS.

- *Revisions to the Proposed Action.* The Applicant is proposing two revisions to its proposal. These revisions are related to the design of the turbine tower and the location of the Project substation.

- *Preferred Alternative.* The draft EIS evaluated the Proposed Action and four alternatives (Alternative Powerline Route, Restricted Areas Alternative, Subarea Development Alternative, and No Action) but did not identify a Preferred Alternative. Based on the analysis of alternatives in the draft EIS and on comments received regarding impacts and mitigation measures, Klickitat County and the Bonneville Power Administration have identified a Preferred Alternative in the final EIS. The Preferred Alternative incorporates certain aspects of the Alternative Powerline Route, Restricted Areas Alternative, and Subarea Development Alternative. The Preferred Alternative also incorporates certain mitigation measures identified in the draft EIS and from a review of comments on the draft EIS.

- *Corrections and Modifications to the draft EIS.* These corrections and modifications are based on input received through comments on the draft EIS and also incorporate language changes that reflect revisions to the Proposed Action.

- *Comments and Responses to Comments.* This section includes written comments on the draft EIS and a transcript of the Public Hearing on the draft EIS. Responses to comments are also included.

Key environmental issues identified in this EIS include: erosion and sedimentation during Project construction; disturbance of certain high-quality native plant communities and priority habitats; impacts to western gray squirrel and potential disturbance during nesting; incidental collision of birds, including special-status bird species, with wind turbines; construction disturbance to certain nesting raptors; disturbance of archaeological sites potentially eligible for listing in the National Register of Historical Places; impacts to the potentially-eligible traditional cultural property of Juniper Point; aesthetic impacts; potential exceedances of nighttime noise standards at some residential locations; potential schedule conflicts with repairs planned for Hoctor Road in the summer of 1995; and the potential for obstruction of certain line-of-sight microwave transmission signals across certain turbine strings. The EIS concludes that these impacts can largely be avoided, minimized, and/or otherwise mitigated. However, some impact to high-quality Douglas' Buckwheat/Sandberg's bluegrass plant communities, disturbance of the potentially-eligible archaeological sites along turbine strings J and EE, some incidental avian mortality, changes to aesthetics, and impacts to the potentially-eligible traditional cultural property of Juniper Point would be unavoidable.

Beneficial impacts from the Proposed Action would include off-setting fossil-fuel power generation with a renewable generation resource that does not emit greenhouse gases or other air pollutants during operation. In addition, the Proposed Action would provide an additional source of income to landowners in the Columbia Hills and would provide construction and operations jobs in the local community.

The Final EIS will be used prior to the decision making process to determine if the Proposed Action or any of the alternatives should be given the permits and approvals required for construction and operation of the proposed Project.

Fact Sheet

Joint NEPA/SEPA Document

This Environmental Impact Statement (EIS) is a joint document issued under Section 102 (2)(C) of the National Environmental Policy Act (NEPA) at 42 U.S.C. 4321 *et seq* and under the Washington State Environmental Policy (SEPA) as provided by RCW 43.21C.030 (2)(c).

Nature and Location of the Proposal and Alternatives

KENETECH Windpower, Inc., proposes to construct and operate the 115-megawatt (MW) Washington Windplant #1 in a portion of the Columbia Hills area of Klickitat County, Washington. The Project would be constructed on private land under easement to KENETECH Windpower, Inc. The Project site is approximately 5,110 hectares (12,630 acres) in size. The site is generally located east of SR-97, north of SR-14, south of Hoctor Road, and west of Rock Creek. The Project would include approximately 345 wind turbines.

Alternatives to the Proposed Action evaluated in this EIS include:

- An Alternative Powerline Route
- A Restricted Areas Alternative
- A Subarea Development Alternative
- No-Action Alternative
- A Preferred Alternative

The Alternative Powerline Route involves modifying the route for the Project's 34.5-kilovolt (kV) powerline to reduce impacts to native plant communities and priority habitats. The Restricted Areas Alternative involves Conditional Use Permit conditions that specify areas of the site where development should not occur based on the potential for probable significant adverse environmental impacts that could not be mitigated through other means. The Subarea Development Alternative involves limiting the initial phase of development to one of two areas: the western portion of the site (Option 1) or the east-central portion of the site (Option 2). Under the No Action Alternative, the Project would not be constructed and existing agricultural, grazing, and utility use on the site would continue.

The Preferred Alternative would incorporate certain aspects of the Alternative Powerline Route, Restricted Areas Alternative, and Subarea Development Alternative as well as certain mitigation measures in order to avoid, reduce, and mitigate environmental impacts while meeting or approximating the Applicant's objectives.

Proponent

The proponent is KENETECH Windpower, Inc.

Lead Agencies

Klickitat County is the Washington SEPA lead agency for the EIS. Bonneville Power Administration is the lead agency under NEPA.

Responsible Officials and Contacts

Curt Dreyer, Klickitat County Planning Director, 228 West Main, Room 150, Goldendale, Washington 98620, (509) 773-5703.

Kathy Fisher, ECN1500 Bonneville Power Administration, 905 NE 11th Avenue, Portland, Oregon 97232, (503) 230-4375.

Required Permits and Licenses

Conditional Use Permit	Klickitat County
Building Permit(s)	Klickitat County
National Pollutant Discharge Elimination System (NPDES) General Permit	Washington Department of Ecology
Section 404 Nationwide Permits for crossing intermittent streams	U.S. Army Corps of Engineers
Section 401 Water Quality Certification	Washington Department of Ecology
Electrical Permit(s)	Washington Department of Labor and Industries
Transmission Services Agreement	Bonneville Power Administration
Bald Eagle Management Plan	Washington Department of Fish and Wildlife

Authors and Principal Contributors

R. W. Beck	Project Management	Land Use
	Earth	Transportation
	Water	Public Services and Utilities
	Botany	Health and Safety
	Aesthetics	Cumulative Impacts
Jones & Stokes Associates, Inc.	Avian Resources	
	Wildlife	
	Noise	
	Air Quality	
	Aesthetics	
Historical Research Associates, Inc.	Cultural Resources	

Details on the qualifications of these firms and individuals are included in Appendix A.

Date of Issuance of Final EIS

The final EIS is being issued pursuant to SEPA on May 30, 1995. The final EIS will be issued pursuant to NEPA upon notice in the Federal Register.

Proposed Date for Implementation

Assuming all permits and approvals are obtained, the proposed Washington Windplant #1 would begin operation in 1996. Construction is planned to begin July 1995.

Nature and Date of Final Actions

Final actions will include decisions by various agencies on permit applications, including a Conditional Use Permit which may be issued by Klickitat County. A public hearing on the Conditional Use Permit has been scheduled for June 12, 1995. Other permit decisions are expected in the summer of 1995. Final action by the Bonneville Power Administration would be a Record of Decision (ROD) for a transmission services agreement with utilities purchasing the Project's electrical output.

Location of Background Environmental Data

Background material for this EIS, including supporting technical reports, is available at the Klickitat County Planning Department, 228 West Main, Room 150, Goldendale, Washington, 98620, and at the Bonneville Power Administration, 905 NE 11th Avenue, Public Information Office, Portland, Oregon, 97232. Supporting technical reports to this EIS include the following appendices:

- Washington Windplant No. 1 Botanical Resources Field Survey, R. W. Beck (December 1994).
- Avian Use of Proposed KENETECH and CARES Wind Farm Sites in Klickitat County, Washington, Jones and Stokes Associates, Inc. (January 1995).
- Final Cultural Resources Assessment of the KENETECH Windpower Washington Windplant No. 1 Project, Klickitat County, Historical Research Associates, Inc. (May 1995).

These appendices have been distributed to county libraries and to resource agencies with expertise or jurisdiction over biological or cultural resources (see Part 6, Distribution List).

Incorporation by Reference

In addition to the technical appendices, the following documents have been incorporated by reference in this EIS and are available at the Klickitat County Planning Department and the Bonneville Power Administration Public Information Office:

- Resource Programs Final Environmental Impact Statement (RP-FEIS), Bonneville Power Administration (February, 1993).
- Record of Decision for RP-FEIS (April 22, 1993).

Cost to the Public for a Copy of the EIS

$30.00	per copy of the DEIS
$30.00	per copy of the FEIS
$ 4.00	per copy of Botanical Resources Field Survey
$10.00	per copy of the final Cultural Resources Assessment
$24.00	per copy of the Avian Use Report

Table of Contents

Tables and Figures

Tables

Figures

SUMMARY

Summary

S.1 Overview

S.1.1 Proposal

KENETECH Windpower, Inc. (the Applicant), has applied for a Conditional Use Permit from Klickitat County to develop Washington Windplant #1 (the Project) in the Columbia Hills area of Klickitat County, southeast of Goldendale (see Figure S-1). The proposed Project would provide 115 megawatts (MW) of wind-powered electrical generation capacity. Electrical power from the proposed Project would be transmitted by the Bonneville Power Administration (BPA) over its transmission system to utilities purchasing the Project's output. A Transmission Services Agreement or Agreements between BPA and the purchasing utilities would therefore be required for this Project. Investor-owned utilities have submitted to BPA a "good faith request," pursuant to the implementing regulations of the Energy Policy Act of 1992, to wheel initial of power generated by the Project over the BPA transmission system.

S.1.2 Existing Setting

The Washington Windplant #1 site is located in the Columbia Hills area of Klickitat County, 9.6 km (6 miles) southeast of Goldendale and to the east of U.S. Highway 97 (US-97). Specifically, the site is located south of Hoctor Road and north of State Route 14 (SR-14). The 5,110-hectare (12,630-acre) Project site extends for approximately 23 km (14 miles) along the crest of the Columbia Hills. The Columbia River serves as a major barge transportation route and recreational resource. In addition, the river has been highly developed with dams and associated hydroelectric generating facilities. One such facility—John Day Dam—is located below the Project site. A large industrial facility—Columbia Aluminum—is located adjacent to John Day Dam. KENETECH Windpower, Inc., has collected wind data in the Columbia Hills and has determined that the area has an adequate wind resource to support a commercial-scale wind power project.

Project lands are all privately owned and have been used for grazing and, to a lesser extent, for cultivated crops for more than a century. Prior to european settlement and private ownership of the land, the Columbia Hills were used by Native American tribes and bands which ceded the lands to the U.S. government pursuant to the Treaty of June 9, 1855. This treaty created the Yakima Indian Reservation, approximately 28 km (17 miles) to the north. Traditional cultural use of Project lands by Native Americans is discussed in Section 2.6 of the draft EIS and in Parts 3 and 4 of this document.

The Applicant has entered into wind power easement agreements with Project landowners. Project lands are currently zoned Extensive Agriculture and Open Space, and are primarily cultivated or used for grazing. The proposed Project would reduce the amount of land on the site available for agricultural use by about 1.5 percent. Roads would displace about 1.6 hectares (4 acres) of cultivated land. The overhead powerline would traverse approximately 2.4 hectares

(6 acres) of cultivated land, but most of this area could remain in agricultural use following Project development. The compatibility of the Project with agricultural uses is discussed in Section 2.8 of the draft EIS as modified in Part 3 of this document.

The Project would add an additional utility facility to the site. A number of existing public utility corridors currently occupy portions of the Project site. Two BPA high-voltage transmission lines are partially located on Project lands: the 230-kV Midway-Big Eddy line crosses the northwestern corner of the site; and the 500-kV Hanford-John Day line passes through the far eastern portion of the site. A 115-kV Klickitat County Public Utility District (PUD) transmission line crosses the western portion of the site enroute from John Day Dam to Goldendale. A natural gas pipeline runs east-west just south of Hoctor Road and passes through the northern portion of the Project site. Several public and private communication facilities are also located on or near the Project site on Juniper and Luna points. The Project's potential impacts on public utilities and services are discussed in Section 2.12 of the draft EIS as modified by Part 3 of this document.

S.1.3 Applicant's Objectives

The Applicant's primary objectives for the Project are: to construct and operate an electrical generation project using advanced utility-grade wind turbine technology specifically designed by KENETECH Windpower, Inc.; to initially deliver about 50 MW of installed wind-powered generating capacity over BPA's transmission system to investor-owned electrical utilities that have entered into an agreement to purchase this capacity; to have the permitted capability to construct and operate an additional 65 MW of wind-powered electrical generating capacity on the Project site; to develop and operate the Project in a manner that is compatible with ongoing agricultural and grazing use of Project lands; and to meet the public demand for additional energy resources.

S.1.4 BPA Purpose and Need

Public Law 93-454, the Transmission System Act, requires that BPA make excess transmission capacity available to utilities requesting transmission service. The Energy Policy Act of 1992 also requires utilities, including BPA, to make arrangements to provide transmission wheeling subject to certain constraints. Certain investor-owned utilities have submitted to BPA a "good faith request," pursuant to the implementing regulations of the Energy Policy Act of 1992, to wheel 50 MW of power generated by the Project over the BPA transmission system. BPA needs to respond to this request. The BPA purposes that will be considered in evaluating the utilities' request include:

- Restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects.
- Assuring consistency with BPA's statutory responsibilities, including the Pacific Northwest Electric Power Planning and Conservation Act (Regional Power Act), the Transmission System Act, and the Energy Policy Act of 1992.
- Protecting BPA's ability to serve its existing contractual obligations and to remain able to meet the needs of its customers.

- Providing electrical system reliability that meets BPA's reliability criteria.
- Preserving transmission capability for future BPA resources.

S.2 Relationship to Future or Phased Environmental Review

The Applicant has applied for a Conditional Use Permit that would apply to the entire 115-MW Project, and this EIS addresses the environmental impacts of the full Project development. However, the Preferred Alternative identified and described in this final EIS would require monitoring of bald eagle use for an additional winter season and peregrine falcon use for an additional year prior to development in the eastern portion (subarea) of the Project site (see Figure S-6). Should evaluation of the additional winter monitoring data substantially alter the findings of this final EIS, then supplemental environmental review under SEPA could be required.

S.3 Proposed Action and Alternatives

S.3.1 Proposed Action

Figure S-2 shows overall Project development as proposed on the site. As proposed, development of Washington Windplant #1 would ultimately entail installation of approximately 345 wind turbines arranged in up to 39 distinct rows (turbine strings). Development within each turbine string would include turbine tower structures and foundation slabs, controls, small transformers, underground collection and communication lines, and an access road.

Turbines would be designed and manufactured by the Applicant. Each turbine consists of three main components: 1) the rotor/generator assembly, which converts wind power to electrical energy; 2) a tubular tower; and 3) a foundation supporting the entire turbine structure.

The KENETECH turbine (see Figure S-3) is designed to convert wind power to electrical energy using a 33- to 39-meter-diameter (108 to 128 feet), 3-blade rotor, which resembles an airplane propeller. The rotor blades are made of laminated fiberglass, and each blade is connected to a central hub. These turbines use a horizontal axis, upwind, variable speed design, where the axis of the blades' rotation is parallel to the wind stream and the rotor assembly is located upwind of the turbine tower. Tubular steel turbine towers are proposed. Towers would range from 24 to 36.6 meters (80 to 120 feet) high, depending on localized site conditions. Each turbine would incorporate a tubular, rather than lattice, tower with enclosed climbing ladder to provide access to the turbine unit.

The speed of the rotor's rotation ranges from 14 to 54 rpm. Through a series of gears and shafts (the transmission), the rotation of the rotor shaft induces an electrical current in the generator to produce electricity. Power from each wind turbine would be fed through underground 600-Volt power cables to small transformers that would "step up" the electrical voltage to 34.5 kV. Each transformer would serve two to three turbines. Communication lines and

conduits containing electrical power cables would be buried approximately 0.6 meters (2 feet) below the ground surface along each turbine string.

Power from the underground power collection lines would be fed directly to the overhead Project powerline, which generally would run east-west across the site as shown on Figure S-2. The 34.5-kV Project powerline would be supported by single wood poles. The powerline would connect to a new substation located on-site, where power voltage would be increased to 230 kV prior to interconnection with the BPA Midway-Big Eddy transmission line. Security fencing would be constructed around the substation. All electrical equipment would be designed and installed in compliance with national electrical safety codes and standards, including NEMA (National Electrical Manufacturers Association), ANSI (American National Standards Institute), and IEEE (Institute of Electrical and Electronics Engineers), and with the requirements of WAC 296-44.

Project site development would also entail upgrading existing roads and constructing new roads to provide access to the turbine strings. Generally, primary access roads would follow ridgelines across the site. Where feasible, existing roads would be upgraded to serve as primary access roads. Roads would be constructed on grades up to about 10 percent. Where required by site conditions, such as steep slopes, switchbacks would be used. Temporary staging areas totaling about 4 hectares (10 acres) for construction equipment and materials would also be required.

The total amount of land that would be disturbed during construction is about 153 hectares (376 acres). After restoration of temporarily disturbed areas, Project features would permanently occupy about 76 hectares (187 acres). Less than 2 hectares (less than 5 acres) would be impervious surface (see Table S-1).

TABLE S-1
Summary of Project Features

Features	Area Temporarily Disturbed		Area Permanently Occupied	
	Hectares	Acres	Hectares	Acres
Turbine String and New Secondary Access Road[1]	98	243	33	82
Powerline	15	36	11	28
New Primary Access Road[2]	27	66	24	58
Substation	<1	1	<1	1
Upgraded Access Road	8	20	7	18
Construction Staging Area	4	10	0	0
TOTAL (rounded to closest hectare/acre)	153	376	76	187

1 Assumes 30-meter (100-foot) disturbance corridor along turbine strings except where steep terrain dictates the use of road switchbacks. Secondary roads along turbine strings are about 4 meters (12 feet) wide plus associated drainage ditches.

2 Assumes area required for an approximately 5-meter (16-foot) primary road and associated drainage ditches.

Construction of Phase 1 of the Washington Windplant #1 and each additional phase is estimated to require eight (8) to eleven (11) months. Construction would require the movement of heavy

equipment and vehicles to and from the Project site and on-site staging of construction equipment and materials. Construction vehicles and equipment include bulldozers, graders, backhoes, water trucks, truck-mounted drill rigs, cranes, concrete mixers, gravel trucks, and equipment delivery vehicles. Most daily construction traffic would be associated with gravel trucks bringing off-site aggregate to the site for road construction. The Applicant has not yet identified an off-site aggregate source. However, it appears that adequate sand and gravel resources would be available within Klickitat County.

The Project would provide power throughout the year, but power generation would vary according to seasonal and diurnal wind conditions. Peak power production would occur from April through September. During the peak season, peak daily power production would occur from late afternoon through early evening. Much of the Project would operate automatically through an electronic communications and control system. During operations, the Project would employ approximately nine full-time workers (Business Development Concepts, 1994). These employees would work at the off-site operations and maintenance facility; however, maintenance employees would tour and inspect the Project site daily.

Mitigation measures proposed by the Applicant and that will be included as part of the proposed Project include:

- Eliminating the potential for bird collisions with guy wires by installing turbines that do not require guy wires for support.
- Reducing the potential for turbine towers to attract birds by using a tubular tower rather than a lattice tower structure. (Research indicates that lattice towers may be used by birds for perching.)
- Reducing the potential for bird electrocution by designing the 34.5-kV powerline with raptor protection measures. Raptor protection measures will be designed in accordance with the most current release of *Suggested Practices for Raptor Protection on Powerlines* and the most current release of *Migratory Bird Collisions with Powerlines: The State of the Art.*
- Providing turbines with overspeed protection to prevent damage to generator and tower structure.
- Designing the turbine towers and foundation to survive windspeeds of 161 km per hour at 9 meters (100 mph at 30 feet) above the ground surface.
- Providing a climbing ladder on the inside of the tower to provide safe access during icy weather conditions and designing the ladders to meet all applicable health and safety standards.
- Housing gears and moving parts within the nacelle (see Figure S-3) to contain sparks and reduce fire risk.
- Providing locks and high voltage warning labels on all control cabinets and transformer cabinets to reduce the risk of electrocution.
- Fencing and locking the Project substation and providing warning signs about the presence of high voltage equipment.

- Providing radio-controlled locked gates onto the Project site and signs warning of high voltage equipment and buried cable.
- Not using pesticides and rodenticides during Project construction and operation, and using herbicides only as reasonably necessary for weed control.
- Designing turbine structures to fall below the 61-meter (200-foot) requirement for lighting established by the Federal Aviation Administration (FAA).
- Locating the overhead powerline at least 61 meters (200 feet) from the turbines so that cranes working on the turbines will be at a safe distance from the powerlines. Because of this safety requirement, powerlines running along turbine strings would be located underground.
- Using and upgrading existing roads wherever feasible rather than building new roads.
- Constructing roads with ditches and culverts sized to accommodate the 100-year storm.
- Locating roads along ridgelines to reduce the amount of cut and fill (grading) required.
- Revegetating any disturbed areas that are not permanently occupied by Project features.
- Providing a minimum 15-cm (6-inch) gravel surface on Project roads to reduce wind erosion.
- Using non-reflective paints to reduce glare and painting turbine blades and towers in a neutral color except to the extent that different colors are recommended through consultation with the USFWS and WDFW.
- Locating turbines in strings to improve aesthetics by providing a more uniform-looking development.

S.3.2 Alternative Overhead Powerline Route

An alternative route for the Project powerline is shown on Figure S-4. This alternative route would reduce impacts to native plant communities and Priority Habitats primarily by avoiding most of a large block of shrub-steppe and Oregon white oak habitats located in the western portion of the site. From Section 9, Range 3N Township 17E east, the alternative route would follow the same alignment as the proposed route.

S.3.3 Restricted Areas Alternative

The Restricted Areas Alternative would involve Conditional Use Permit conditions that place restrictions on development in specific areas of the site or on specific turbine strings. Conditions would specify where development would not be allowed to occur based on the potential for probable significant adverse environmental impacts that could not be mitigated through other means. Specifically, development would not be allowed in areas in the western and central portions of the site containing high-quality examples of Douglas' buckwheat/Sandberg's bluegrass community (northern half of turbine string C and associated roads, southern third of turbine string M, turbine strings S and U, road segment between turbine strings R and V, and

portions of the Project powerline); and potentially eligible archaeological sites if proven eligible (turbine strings J and EE).

S.3.4 Subarea Development Alternative

The Subarea Development alternative compares two options for development of Phase 1 of the Proposed Project:

Option 1 – Phase 1 development limited to the western portion of the site.

Option 2 – Phase 1 development limited to the east-central portion of the site.

These two subareas are shown on Figure S-5.

The objective of this alternative would be to limit the area disturbed during Phase 1 development. This would reduce impacts during the period of time prior to the development of subsequent Project phases. In the event that subsequent phases are ultimately not developed, the long-term impacts of the Project would then be limited to a more confined area of the site.

S.3.5 Preferred Alternative

S.3.5.1 Introduction

The draft EIS evaluated the Proposed Action and four alternatives (Alternative Powerline Route, Restricted Areas Alternative, Subarea Development Alternative, and No Action) but did not identify a Preferred Alternative. Based on the analysis of alternatives in the draft EIS and on comments received regarding impacts and mitigation measures, the lead agencies (Klickitat County and the Bonneville Power Administration) have now identified a Preferred Alternative. The Preferred Alternative incorporates aspects of the Subarea Development Alternative, Alternative Powerline Route, and Restricted Areas Alternative as well as certain mitigation measures identified in the draft EIS and in comments on the draft. The following discussions describe the Preferred Alternative including mitigation measures.

S.3.5.2 Phasing, Additional Pre-construction Avian Monitoring and Subsequent Environmental Review

- The Preferred Alternative divides the Project site into three subareas as shown in Figure S-6.

- Initial development, estimated to include about 50 MW of output from about 150 turbines, is limited to Subarea 1.

- Project development could proceed (building permits could be issued) into Subarea 2 following a location and survey of the powerline route and access roads between turbine strings, conducted in consultation with biologists from the Washington Department of Fish and Wildlife (WDFW), Priority Habitat and Species Program. This survey is to locate the

powerline and road routes through Sections 11, 12, 13, and 14 T3N, R16E that avoid impacts to Priority Habitats as identified in the EIS and on site by the WDFW to the maximum extent reasonably feasible.

- Project development could proceed into Subarea 3 (building permits could be issued) only after an additional winter season of bald eagle monitoring is completed and evaluated. The monitoring program should be targeted at more precisely determining winter bald eagle flight paths across the Project site between day and night roost areas in support of development of a Bald Eagle Management Plan. The winter bald eagle monitoring is to be conducted in consultation with WDFW and the U.S. Fish and Wildlife Service (USFWS) with results reported to USFWS and WDFW, which may comment to Klickitat County regarding the results of the study prior to the issuance of building permits.

- Project development could proceed into Subarea 3 only after an additional year study to better determine use patterns of the pair of peregrine falcons sighted in the Rock Creek area during EIS studies for the Proposed Action. The study of peregrine falcon use is to be developed and conducted in consultation with WDFW and USFWS with results reported to these two agencies. USFWS and WDFW may comment to Klickitat County regarding the results of the study prior to issuance of building permits.

- Based on the results of the additional avian monitoring, the lead agencies will review the assessment of significant unavoidable adverse impacts included in this EIS to determine if significant new circumstances and information have been developed. If the additional monitoring concludes that there are significant new circumstances or information relevant to environmental concerns and indicating the Proposed Action's probable significant adverse environmental impacts, a Supplemental EIS will be prepared prior to issuing building permits for Project development in Subarea 3.

S.3.5.3 Location of Project Features

To the maximum extent feasible given site topography, project boundaries, the status of easements, project economics, and safety considerations (i.e., maintaining a minimum 61 meters (200 feet) between the powerline and turbines), incorporate the alternative powerline route into the Project design and/or make adjustments to the proposed powerline route and primary access road locations, after consultation with WDFW, that are designed to meet the following objectives:

- Reduce disturbance of shrub-steppe habitat.
- Reduce disturbance to Oregon white oak habitat.
- Reduce disturbance to Juniper Savannah habitat.
- Route powerline and roads in common corridors to reduce the overall amount of site disturbance.
- Avoid, to the maximum extent feasible, disturbance to areas of high-quality Douglas' buckwheat/Sandberg's bluegrass plant community (roughly the northern half of turbine string C and associated roads; roughly the southern third of turbine string M; turbine strings S and U; and road segment R to V).

S.3.5.4 Additional Cultural Resources Surveys

Conduct additional Cultural Resources Surveys prior to construction, including:

- Precisely locate sites and isolates along turbine strings A, B, E, L, O, U, Y, Z, AA, BB, CC, DD, GG, and OO using property surveys or other means so that the final design of roads along the turbine strings and placement of the turbines can avoid the identified sites and isolates where feasible. Sites located along these corridors occupy limited portions of the surveyed corridors and avoidance appears to be feasible. The isolates occupy a very limited area and could be easily avoided during construction.

- Conduct additional cultural resources surveys of the Project powerline, primary access roads, and construction staging areas, once these areas are more precisely identified, and adjust their locations to avoid any potentially eligible cultural properties where feasible.

- If development will include turbine strings J and EE, complete further testing of the two archaeological sites located along those turbine strings, and of any other potentially eligible sites that prove to be unavoidable during final design, to determine their eligibility for listing in the National Register. Design and implement scientific data recovery where further testing confirms eligibility and avoidance is not feasible.

S.3.5.5 Hoctor Road Survey

Provide financial support for a detailed County assessment of the Hoctor Road roadway condition prior to commencement of Phase 1 construction and following completion of Phase 1 construction to determine the amount of road damage caused by construction vehicles and to allocate the appropriate costs to the Applicant.

S.3.5.6 Environmental Protection Plans

Reseeding/Restoration/and Weed Management Plan

Prior to construction, develop a Reseeding/Restoration/and Weed Management Plan reviewed by the Washington Noxious Weed Control Board that, at a minimum, addresses the following:

- Stockpiling topsoils separately from other soils.

- Specifications for reseeding any areas disturbed during construction with mixes that are certified free of noxious weeds.

- Specifications that any temporary seeding used for erosion control during construction should also be accomplished with seed mixes certified free of noxious weeds. These specifications should also be incorporated into the Erosion and Sediment Control Plan discussed in Section 2.1.4.2 of the draft EIS.

- Timing and application rates for seed mixes.

- Specifications for reseeding disturbed bluebunch wheatgrass-Sandberg's bluegrass and bluebunch wheatgrass-Idaho fescue communities with seed mixes that include species native to those communities, especially dominant species.

- Livestock exclusion from reseeded native grasslands in shrub-steppe habitat for at least two to three years and until native vegetation is established.

- Coordination with the CARES' Columbia Windfarm #1 project to enhance long-term efforts to control invasive weeds where the two project sites adjoin.

- Annual monitoring of restored and/or reseeded shrub-steppe habitat and communities for noxious weeds and ongoing actions to control noxious weeds, until restoration vegetation is reasonably established.

- Measures for addressing requests of the Klickitat County weed coordination.

Construction Environmental Protection and Monitoring Plan

Prior to construction, develop a Construction Environmental Protection and Monitoring Plan prepared in consultation with WDFW that includes the following:

- A site access plan that designates roads and directs construction workers to use existing roads wherever possible.

- Provisions for flagging the limits of construction and flagging and avoiding environmentally sensitive areas that can be avoided consistent with the provisions of Section 2.2.2 and 2.2.3 of this document while still meeting the Project objectives. Environmentally sensitive areas include:

    - High-quality native plant communities and priority habitats as described in Section 2.2.2.

    - Areas within 122 meters (400 feet) of any known western gray squirrel nest between May 15 and September 30 for general construction and within 396 meters (1,300 feet) for blasting or activities with similar noise impacts between May 15 and September 30.

    - Areas within a 23-meter (75-foot) radius of any western gray squirrel nests.

    - Areas within 400 meters (1,300 feet) of bald eagle roosts during October through March unless subsequently modified by the USFWS through the Section 7 consultation process. Any permanent buffers would also be established through the Section 7 consultation process and development of the Bald Eagle Management Plan.

    - Areas within 400 meters (1,300 feet) of red-tailed hawk nests from April through July.

    - The southern portion of the turbine string NN from April 1 to September 1 (breeding season for Swainson's hawk).

    - From March 15 through July 15 areas within 488 meters (1,600 feet) of golden eagle nests for general construction activities and from March 15 through July 15 within 1 mile for blasting or activities with similar noise impacts.

- Potentially eligible sites and isolates located along turbine strings A, B, E, L, O, U, Y, Z, AA, BB, DD, GG and OO if final Project design confirms that they can be avoided.
- Other cultural resources identified during the studies outlined in Section 2.2.3.

- Provisions for independent environmental monitoring during construction using County-approved environmental monitors and a tribal monitor appointed by the Yakama Indian Nation to ensure that flagged environmentally-sensitive areas are avoided.

- Provisions for training construction workers on the need to avoid cultural properties and procedures to follow if previously unidentified cultural properties, including Indian graves, are encountered during construction.

- The Erosion and Sediment Control Plan prepared to comply with the requirements of the Department of Ecology's Baseline General Permit for Stormwater Discharge Associated with Industrial Activities (construction over 5 acres).

Operations Monitoring Plan

Prior to commercial operation, develop an Operations Monitoring Plan in consultation with WDFW that includes the following:

- Ongoing erosion monitoring on a weekly basis and after large rainfall or snowmelt events

- Weekly monitoring of turbine sites to detect and correct any leakage of hydraulic or lubricating fluids.

- Monitoring the site for evidence of unauthorized use and providing additional security as appropriate.

- Avian Injury and Mortality Monitoring Plan developed in consultation with the USFWS, BPA, and WDFW. The goals of the Avian Injury and Mortality Monitoring Plan would include: 1) responding to the discovery of injured birds in order to improve their chances for survival; 2) procedures for providing incident reports to the USFWS; and 3) procedures for evaluating incident report data on a periodic basis and reporting findings to the USFWS and WDFW.

Habitat Replacement/Mitigation Plan

Prior to commencement of commercial operation, develop a habitat replacement/mitigation plan in consultation with WDFW addressing replacement through on-site or off-site preservation/enhancement of oak/oak-pine woodland and Douglas' buckwheat/Sandberg's bluegrass community, with the goal of preserving similar quantity and quality of those habitats lost through Project development.

Decommissioning Plan

Prior to commercial operation, provide a Decommissioning Plan for approval by the Klickitat County Planning Department outlining the circumstances under which individual turbines will be removed from the site, methods used to restore areas previously containing turbines, and

methods for decommissioning the overall Project and restoring the overall Project site to a natural condition.

S.3.5.7 Additional Mitigation Measures

The Preferred Alternative would include all mitigation proposed by the Applicant. In addition, the following additional mitigation measures would further reduce environmental impacts and are included as part of the Preferred Alternative:

Design

- Design road and turbine foundations and cut slopes in consultation with a professional geotechnical engineer. If geotechnical studies and final design reveal any unstable slopes that cannot be adequately stabilized during construction or over the period of Project operation, avoid constructing permanent or temporary Project features in those areas.

- Design structural foundations, buildings, and structures in accordance with Uniform Building Code requirements for seismic zone 2B.

- Design drainage ditches and culverts considering the effects of snowmelt, and use rock or other channel protection in steeper drainage ditches and channels to reduce the potential for erosion and sedimentation. Where technically feasible, limit utility trenches across waters of the United States to a top trench width of 0.6 meters (2 feet) or less.

- Provide reasonable and economically feasible design measures, to be approved by the Klickitat County Department of Public Services, to prevent small mammals from burrowing under foundations wherever foundations are less than 2 feet deep.

- Design turbines to heights that do not require lighting. Design other limited site lighting, if any, to conform with requirements of the Klickitat County Illumination Control overlay zone.

- Precisely determine the location and frequency of potentially impacted communications transmitters and receivers when siting individual turbines in turbine strings M, G, I, K, Z, CC, DD, NN, EE, and OO to guard against potential signal interference. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.

- Coordinate tower paint colors to be compatible with those proposed for the CARES Columbia Windfarm #1 Project. Turbine blade and tower colors are to be neutral except to the extent that colors and patterns are recommended through consultation with the USFWS and WDFW.

- Design slab foundations with berms to reduce the potential for leakage of hydraulic fluids and fuels to enter soil and water resources.

Construction

- Allow clearing and grading activities only from the late spring through early fall period (June through October) and minimize grading disturbance to the maximum extent feasible considering the need to minimize disturbance to Priority Habitats and avoid archaeological resources.

- To the extent present in the existing environment, retain at least 50 percent canopy cover in oak woodlands within a 120-meter (400-foot) radius of known nest trees. To the extent they are available, retain conifers (pine) for 25 percent of the remaining canopy cover.

- Locate construction staging areas to avoid:

    - High-quality native plant communities and priority habitats.
    - Areas that would be clearly visible from US-97, SR-14, and I-84.
    - Cultural resources potentially eligible for the National Register of Historic Places.

- Flag environmentally sensitive areas and monitor construction consistent with the Construction Environmental Protection and Monitoring Plan.

- If any previously unidentified cultural resource properties are encountered during construction, cease construction activities in the immediate vicinity of the site pending evaluation by a qualified archaeologist and consultation with the State Office of Archaeology and Historic Preservation to identify appropriate mitigation measures such as avoidance or scientific data recovery.

- Provide for lubrication and maintenance of construction equipment in contained areas and use liquid-absorbing booms, socks, pads, or loose absorbent materials in the event of minor spills of fuels, oils, lubricants, and other fluids.

- Reduce noise levels during construction by employing the following types of measures:

    - Turn off idling motor vehicles and construction equipment when not in use.
    - Select the quietest effective setting for back-up alarms.
    - Confine construction activities to daytime hours in proximity to homes.

- Coordinate routing of Project construction traffic and travel times with the Department of Public Services and with the CARES Columbia Windfarm #1 Project to reduce conflicts with construction work on Hoctor Road scheduled for the summer of 1995.

- To the extent economically feasible, schedule Project construction activities to avoid use of Hoctor Road during likely periods of freeze/thaw cycles and comply with temporary County weight restrictions when in effect.

- Route construction traffic to the site in a manner that minimizes construction traffic on Hoctor Road, to the extent feasible.

- Employ traffic safety precautions such as traffic control flaggers and signs warning of construction activity and merging traffic.
- Provide a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.
- Minimize or restrict high fire-risk activities during extreme dry weather periods.
- Provide Project staff with cellular phones to enable timely communication with the Fire Department and other emergency services.
- Provide appropriate sanitation facilities and potable water on site during construction.
- Prohibit construction personnel from smoking on the Project area except within designated areas.
- Provide all County emergency departments with controls to electronic gates.
- Provide fire extinguishers and shovels on vehicles and equipment used during construction.
- Restore temporary roads and staging areas to preconstruction grades.
- Restore all disturbed areas consistent with the Reseeding/Restoration/and Weed Management Plan developed for the Project.

Operation

- Coordinate with Washington, Oregon, and federal recreational facilities and areas, as well as Washington and Oregon State Highway Departments, to provide signs directing sightseers along I-84, SR-14, and US-97 to existing public facilities that provide safe viewing areas of the Project site.
- Provide liquid-absorbing pads under turbines to contain or collect lubricant spills during turbine servicing.
- Provide a clean looking facility free of debris and unused or broken down equipment by: storing equipment and supplies off site, promptly removing any damaged or unusable equipment from the site, and promptly repairing or decommissioning turbines that are not functioning or prove to be uneconomically sited consistent with the Project Decommissioning Plan.
- Monitor operation consistent with the Operations Environmental Monitoring program developed for the Project.
- Maintain sound levels at sensitive receptor residences that are under the maximum levels for receiving properties based on the receiving properties' environmental designation for noise abatement (EDNA) at WAC 173-60 subject to the temporary exceedances allowed in state regulations.

- In the event of a complaint to the County that noise standards may be exceeded due to Project turbines, require the Applicant to provide appropriate sound level measurements on the complaintant's property.

- During welding operations, have a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.

- Minimize or restrict high fire-risk activities during extreme dry weather periods.

- Provide Project staff with cellular phones to enable timely communication with the Fire Department and other emergency services.

- Provide appropriate sanitation facilities and potable water on site, if needed, during operation.

- Prohibit operating personnel from smoking on the Project area except within designated areas.

- Provide all County emergency departments with controls to electronic gates.

S.3.6 No Action

The No Action Alternative consists of KENETECH Windpower, Inc., not building and operating a 115-MW, wind-powered electric generating plant in the Columbia Hills east of US-97, near Goldendale, Washington.

S.3.7 Alternatives Considered But Eliminated From Detailed Study

The lead agencies reviewed information on a wind power site that was previously considered by the Applicant but abandoned. The site was located in the vicinity of Rattlesnake Mountain on the Hanford Nuclear Reservation and included a portion of the National Environmental Research Park at Hanford and Arid Lands Ecology Reserve. Development of the Rattlesnake Mountain site would have conflicted with federal policies for the Research Park and Ecological Reserve at Hanford. For this reason and because of the potential environmental impacts identified during preliminary work on the site, the Applicant determined that the Rattlesnake Mountain site was not available for development of the Project and the lead agencies determined that it was not a reasonable or feasible alternative to the Proposed Action.

S.4 Major Conclusions, Areas of Controversy and Uncertainty, and Issues to be Resolved

Washington SEPA rules require that EIS summaries identify major conclusions, significant areas of controversy and uncertainty, and issues to be resolved, including the environmental choices to be made among alternative courses of action and the effectiveness of mitigation measures.

Table S-2 summarizes impacts, mitigation measures, and significant unavoidable adverse impacts that are expected for the proposed Project and alternatives. Based on the environmental review conducted for this EIS and without considering additional mitigation measures identified in the EIS, the following potentially significant adverse impacts were identified for the proposed Project:

- Erosion and sedimentation during Project construction.
- Disturbance of certain high-quality native plant communities occurring in shrub-steppe habitat.
- Impacts to western gray squirrel habitat and potential disturbance during nesting.
- Incidental collision of birds, including special-status bird species, with wind turbines.
- Disturbance to certain raptors during nesting.
- Disturbance of archaeological sites that are potentially eligible for listing in the National Register of Historic Places and indirect impacts to the potentially eligible traditional cultural property of Juniper Point.
- Potential aesthetic impacts to views along Hoctor Road and to certain views near Maryhill and at other locations near the Columbia River.
- Potential exceedence of the nighttime noise standard (50 dBA[1]) at some residential locations.
- Potential schedule conflicts with repairs planned for Hoctor Road in the summer of 1995.
- Potential for obstruction of line-of-sight microwave signal transmission at certain turbine string locations.

These impacts can largely be avoided, minimized, and/or otherwise mitigated. Erosion and sedimentation impacts can be minimized by employing Best Management Practices for stabilizing soils, controlling runoff, and removing sediments prior to discharging runoff to intermittent streams and drainages. Disturbance to shrub-steppe habitat can be reduced by changing the routing of Project powerlines and roads; by flagging the limits of construction; and by intensive efforts at reseeding, restoration, and ongoing weed control. Potential impacts to the western gray squirrel can be minimized by retaining oak vegetation and restricting construction activity near nest sites. Potential impacts to birds can be reduced by employing tubular towers and by minimizing construction disturbance near nesting and roosting sites. Potentially eligible archaeological sites can be largely avoided by flagging the sites and restricting construction activities from the flagged areas. Noise impacts can be reduced by modifying the number of turbines in individual strings. Schedule conflicts with planned repairs to Hoctor Road can be minimized by coordinating construction activities with County Department of Public Services and timing construction in areas that do not have to be accessed from Hoctor Road to coincide with the time-critical construction activities that are occurring on that road. Potential conflicts

[1] dBA = A-weighted decibels.

with line-of-sight microwave transmissions can be avoided by placement of individual turbines to avoid signal paths.

Even with the above mitigation measures, there would continue to be some potential for significant adverse impacts to occur to a few environmental resources on a few areas of the site. These and other areas of uncertainty identified in this environmental review include:

1) **Impacts to High-Quality Douglas' Buckwheat-Sandberg's Bluegrass Plant Communities.** High-quality examples of this native plant community exist in shrub-steppe habitat located in the western and central habitat complexes on the Project site. This community exists across a narrow, natural range in Washington on the Project site. This community commonly exists in shallow, rocky soils occurring along portions of the crest of the Columbia Hills. These soils exhibit a crust of lichens and mosses. Because of the low productivity and water-retention capabilities of these soils, the crust plays a critical role in the ecology of this community. The soil crust can be easily disturbed by construction activity. Successful efforts to restore this community have not been documented. Therefore, increased erosion and the potential for establishment of invasive weeds could result if restoration efforts proved unsuccessful. On-site or off-site preservation to replace areas of this community lost to development could mitigate impacts and address the uncertainties surrounding restoration.

2) **Impacts to Potentially Eligible Archaeological Resources Sites Located on Turbine Strings J and EE.** While most archaeological sites identified for this environmental review appear to be avoidable, sites along turbine strings J and EE occupy virtually the entire turbine string. Further testing would be required to determine if these sites are, in fact, eligible and, if they are, to design a mitigation plan for scientific data recovery. With appropriate data recovery, impacts would not be considered significant.

3) **Avian Impacts.** Year-long Project avian studies suggest the Project site is used by resident raptor populations and by migrating raptors and passerines such as the western bluebird. However, the Project site does not appear to be in a major migratory flyway. The Applicant has incorporated several mitigation measures into its Proposed Action, including: raptor protection of powerlines and power poles; use of tubular rather than lattice towers; and eliminating the use of guy wires. Nonetheless, some incidental raptor mortality would be unavoidable. Peregrine falcons, a federally listed endangered species, use the site infrequently, and their foraging preferences may not make them particularly susceptible to collision with wind turbines. Nonetheless, one pair was observed frequenting an area approximately 8 km (5 miles) to the east of the Project site. Although unlikely, if a peregrine falcon collision did occur, it would reduce the population of the peregrines in the Columbia Gorge Management Unit, but would not significantly affect the viability of the species in that management unit since the population is estimated at up to seven breeding pairs, which likely exceeds the management goal for the area. Bald eagles, a federal threatened species, winter in the vicinity of the site and some mortality due to collision would be possible. Klickitat County provides only minor bald eagle wintering habitat relative to eastern Washington as a whole. Therefore, regional population levels are unlikely to be significantly affected by the proposed Project, although the local population could be reduced.

4) **Aesthetics.** The Project would be visible to viewers along Hoctor Road, portions of US-97, near Maryhill, and from locations along I-84 and SR-14. Although mitigation can reduce aesthetic impacts, research suggests that some viewers would find the Project visually displeasing while others would regard the Project favorably.

5) **Traditional Cultural Properties.** Review of oral history interviews with certain Yakama elders and comments from the Yakama Indian Nation of the draft EIS indicate that Juniper Point, located south of the Project site, might be eligible for listing in the National Register of Historic Places as a traditional cultural property. Juniper Point is a Yakama legendary place; it was used as a vision quest site and a place to gather roots and medicinal plants. The KENETECH Project proposes no development on Juniper Point itself. Turbine strings located about one-half mile and further distant from Juniper Point, however, would be visible to the north, northeast, and southwest. Because vision questing involved views in the four cardinal directions, the Project would adversely affect Juniper Point as a suitable site for vision quests from the Yakama Indian Nation's perspective. The Yakama believe that the spirituality of the place would be reduced. They also believe that both the KENETECH and the CARES projects would alter the traditional cultural value of the Columbia Hills.

   It should be noted, however, that development currently exists on Juniper Point, that views toward the Columbia River now take in development features such as the John Day Dam, and that the KENETECH Project proposes no additional development at Juniper Point. Further, the Yakama currently do not have access to Juniper Point or the area of the Columbia Hills where the KENETECH Project is proposed. The Project has a finite lifetime and mitigation identified in the EIS calls for the windplant to be totally decommissioned at the end of its useful life. Although the Yakama do not currently practice spiritual activities at Juniper Point, consultation and review of oral history tapes indicate the Yakama will view the project as having an adverse effect on its traditional cultural value to them.

Alternatives considered in this EIS would reduce Project impacts and address these uncertainties to varying degrees:

- **The Alternative Powerline Route** would reduce impacts to Oregon white oak and shrub-steppe habitats by routing around the extensive habitat complex in the western area of the site. This would reduce disturbance to high-quality Douglas' buckwheat-Sandberg's bluegrass communities.

- **The Restricted Areas Alternative** would prohibit Project development in areas of high-quality Douglas' buckwheat-Sandberg's bluegrass communities and along turbine strings J and EE, which contain unavoidable archaeological resources. This would eliminate the potential for significant adverse impacts to those resources.

- **The Subarea Development Alternative** would restrict Phase 1 of the Project to either the western or east-central area of the site. Either option would: (1) reduce the overall area of disturbed soil and thereby the potential for erosion and sedimentation; (2) reduce the amount of priority oak and shrub-steppe habitat and high-quality native plant communities disturbed; (3) allow for monitoring and testing of efforts to restore Douglas' buckwheat-Sandberg's bluegrass plant communities; (4) reduce construction traffic impacts; and (5)

reduce nighttime noise impacts at certain locations until development of subsequent phases of the Project.

- **The Preferred Alternative** would reduce impacts to Priority Habitats, cultural resources, birds, wildlife, traffic, and noise by dividing the Project into three subareas and allowing development contingent upon field routing of the transmission line to avoid Priority Habitats where reasonably feasible and additional avian studies. The Preferred Alternative would require a number of mitigation plans and measures to further reduce Project impacts.

- **No Action.** The No-Action Alternative would avoid impacts associated with the development of Washington Windplant #1. However, impacts caused by ongoing farming and grazing practices would continue. In addition, No Action could result in increased use of fossil fuels for energy production resulting in increased localized impacts to air quality as well as wider-scale cumulative impacts, including ozone depletion, acid rain, and the greenhouse effect (global warming).

S.5 Timing of Possible Approval

Washington State SEPA rules require that an EIS address the benefits and disadvantages of implementing a proposal at some future time [WAC 197-11-440(5)]. In addition, NEPA regulations require discussions of the short-term uses of man's environment and the maintenance of long-term productivity and any irreversible or irretrievable commitments of resources that would result from implementation of a proposal (40 C.F.R. §1502.19).

The Project would negligibly reduce the amount of land available for cultivation and grazing, and would provide a source of additional income for site landowners. The Project would utilize wind, a renewable resource, for power generation and would not result in the irreversible or irretrievable commitment of resources since areas of the site occupied by Project features could be returned to agricultural use following decommissioning of the Project.

Deferring approval would provide time from additional studies of avian use, but could result in cancellation of the Project due to the Applicant's contractual obligations to deliver power. This would eliminate an opportunity to demonstrate a commercial-scale windpower project in Washington and could ultimately lead to development of additional fossil fuel generating resources as discussed in Section 1.4 (No Action). In addition, cancellation of the Project would eliminate a source of income to the agricultural property owners with whom the Applicant has entered into easement agreements. Because of concerns about impacts to Priority Habitats and avian use, especially bald eagle and peregrine falcon, providing some additional time for careful routing of the Project powerline and limited additional studies of avian use while allowing a portion of the Project to be immediately constructed (once all permits are obtained) may strike the appropriate balance between the Applicant's needs to meet its contractual obligations and resource agency concerns about protection of environmental resources.

TABLE S-2
Summary of Impacts and Mitigation

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Earth	AE: Project site extends along 14 miles of The Columbia Hills on the north side of the Columbia River in south-central Washington. Site topography is distinguished by the Columbia Hills Ridge crest which rises approx. 700 to 800 meters (2,300 to 2,700 feet) above the Columbia River. Site elevations range from 305 to 880 meters (1,000 to 2,890 feet) above sea level. Slopes on the site range from 0 to 90 percent. Site geology reflects folding of the Columbia River basalts, a hard rock formed from lava that flows from large fissures in the earth's crust. No faults have been identified on the Project site. I: Clearing and grading would disturb approx. 153 hectares (376 acres) resulting in the potential for erosion and sedimentation. Up to 99,000 cubic meters (130,000 cubic yards) of gravel would be required for roadways. Construction on steep slopes would be required. M: Limit clearing and grading activities to dry months (typically May-Oct). Prepare and implement an Erosion and Sediment Control Plan (required under NPDES General Permit) which specifies stabilization and structural Best Management Practices (BMPs). Design roads and structural foundations in consultation with a professional geotechnical engineer. If geotechnical investigations reveal unstable areas that cannot be adequately stabilized, avoid those areas. Design structures to meet the Uniform Building Code, seismic zone 2B. Use rock or other appropriate channel protection in steeper drainage ditches and account for snowmelt in sizing ditches and culverts. Monitor erosion on a regular basis and take corrective action as necessary. SUAI: None expected.	AE: Same as Proposed Action. I: Minor increase in the amount of disturbed soils (approx. 2 hectares, 5 acres) relative to the Proposed Action. M: Same as Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western area of the Project site. Option 2 would restrict Phase 1 development to the east-central portion of the Project site. I: Option 1 would disturb about 65 hectares (165 acres) of on-site soils and would avoid disturbing the east-central portion of the site prior to the development of subsequent phases. Option 2 would disturb about 81 hectares (181 acres) and would eliminate the disturbance of the western portion of the site during phase 1. Under both options the amount of gravel required for Phase 1 construction would be reduced to approx. 54,000 cubic meters (70,000 cubic yards). M: Same as the Proposed Action, but required over a smaller area. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Initial soil disturbance would be limited to Subarea 1, subsequently Subarea 2, and finally Subarea 3. This would reduce the amount of disturbance in any one phase, and if Subarea 2 or Subarea 3 were not to be developed would result in less disturbance at total Project buildout. M: Same as the Proposed Action, but initially required over a smaller area. SUAI: None expected.	AE: Same as in Proposed Action. I: None. M: None. SUAI: None.

Key: AE: Affected Environment I: Impacts M: Mitigation Measures SUAI: Significant Unavoidable Adverse Impacts

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Water	AE: The Project site is located in the semi-arid region of east-central Klickitat County where most precipitation occurs from late fall through early spring. Average annual rainfall ranges from 25-40 cm (10 - 15 inches) per year. The 100 year, 24 hour storm events results in approx. 8.9 cm (3.5 inches) of rain over 24 hours. Runoff from areas of the site to the north of the Columbia Hills crest flows into two drainage basins, Swale Creek to the west and Rock Creek to the east. Runoff from areas of the site to the south of the Columbia Hills crest flows directly to the Columbia River via numerous north-south drainages. All streams on site are intermittent. I: Erosion during Project construction could result in sediment discharges to intermittent streams. During construction some surface water contamination could result from fuel or oil spills from construction equipment. No significant impacts to groundwater are anticipated. M: Limit clearing and grading activities to the late spring through early fall (May-Oct.) to avoid grading during rains and snowmelt. Limit the extent of grading to the extent that it can be accomplished while avoiding Priority Habitats and archaeological resources to the maximum extent feasible. Prepare and implement a detailed Erosion and Sediment Control Plan as identified under 'Earth'. Installation of culverts to reduce interference of stream flow caused by road fill. Account for the effects of snowmelt in sizing drainage ditches. Monitor the site for erosion on a regular basis and take corrective action as necessary. Provide oil adsorbing pads under turbines during maintenance. SUAI: None expected.	AE: Same as the Proposed Action. I: Minor increase in the amount of disturbed soils relative to the Proposed Action. Increases erosion and stream sedimentation potential slightly. M: Same as the Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western area of the Project site. Option 2 would restrict Phase 1 development to the east-central portion of the Project site. I: Option 1 would disturb about 65 hectares (165 acres) of on-site soils and would avoid disturbing the east-central portion of the site prior to the development of subsequent phases. Option 2 would disturb about 81 hectares (181 acres) and would eliminate the disturbance of the western portion of the site during phase 1. M: Same as the Proposed Action, but required over a more restricted area. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Initial soil disturbance would be limited to Subarea 1, subsequently Subarea 2, and finally Subarea 3. This would reduce the amount of disturbance in any one phase, and if Subarea 2 or Subarea 3 were not to be developed would result in less disturbance at total Project buildout. M: Same as the Proposed Action, but initially required over a smaller area. SUAI: None expected.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Plants	AE: No special status plants were found on site. The majority of the site is range (60%) and cultivated (20%) lands. Priority habitats include Oregon white oak, shrub-steppe, and juniper. Shrub-steppe habitat contains examples of several native grassland communities; Douglas' buckwheat/ Sandberg's bluegrass and others (see Table 2.3.3 in Section 2.3). Three major habitat complexes exist on the site. The two most important habitat complexes are located in the western and eastern areas of the site. The western habitat complex covers approx. 360 hectares (900 acres) of the project site, the eastern covers about 125 hectares (310 acres) on site, and the central habitat complex extends over 73 hectares (180 acres). Wetlands located on-site consist of excavated stock ponds heavily used by livestock and would not be considered jurisdictional wetlands and are not located in areas of Project disturbance. I: Approx. 153 hectares (376 acres) of vegetation would be removed or disturbed during project construction. Most disturbance would occur within cultivated or degraded rangeland. The remaining disturbance would affect about 10 hectares (24 acres) of oak and 22 hectares (54 acres) of shrub-steppe habitat, including high quality Douglas' buckwheat/Sandberg's bluegrass communities. Indirect impacts could result from increased soil erosion, compaction fracturing plant communities/habitat complexes, and establishment of invasive weeds. M: Limit construction disturbance to the maximum extent possible. Conduct ongoing monitoring during construction. Restrict vehicle access to native grassland areas during wet periods. Route the powerline in the western habitat area parallel to the existing road to the maximum extent possible. Develop a reseeding/restoration/ and weed management plan that is reviewed by the Washington Noxious Weed Control Board. Provide on-site or off-site preservation of oak and Douglas' buckwheat/Sandberg's bluegrass to compensate for loss to development. SUAI: No evidence exists of successful restoration of the Douglas' buckwheat/Sandberg's bluegrass shrub-steppe community resulting in uncertainty regarding the effectiveness of restoration in those areas. On-site or off-site preservation would mitigate this, however.	AE: Same as the Proposed Action. I: The alternative powerline route would disturb slightly more vegetation than the Proposed Action. However, it would reduce the amount of oak habitat affected by about 10 percent and the amount of shrub-steppe by about 10 percent. It would also reduce the extent to which Project features break up the western habitat complex. M: Same as the Proposed Action except for mitigation related to routing the proposed powerline through the western habitat complex. SUAI: Same as the Proposed Action.	AE: Would restrict high-quality Douglas' buckwheat-Sandberg's bluegrass communities from Project development. I: Would avoid impacts to high-quality Douglas' buckwheat/ Sandberg's bluegrass communities. M: Same as the Proposed Action. SUAI: None expected.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Both options would reduce impacts to shrub-steppe, oak, and juniper habitats. Option 2 disturbs more oak, juniper, and shrub-steppe habitat than Option 1, but would avoid impacts during Phase 1 development to the western habitat complex, which is the largest contiguous priority habitat complex on site. M: Same as the Proposed Action except under Option 2 impacts to the western habitat complex would be avoided and therefore, mitigation for those impacts would not be necessary. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Relative to the Proposed Action would reduce impacts to Priority Habitats and high quality shrub-steppe grasslands by requiring powerline and road routing in Subarea 2 to avoid these resources to the maximum extent feasible prior to development in that subarea. M: Same as the Proposed Action. SUAI: Same as the Proposed Action except that on- or off-site preservation of Oregon white oak and Douglas' buckwheat/Sandberg's bluegrass would be required to replace losses due to development.	AE: Same as the Proposed Action. I: On-going grazing and cultivation could result in continued displacement of native grassland communities and priority habitats on the Project site. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Wildlife (Non-Avian)	AE: No non-avian federally threatened or endangered species were found on the Project site. The site contains habitat suitable for 9 Washington State listed species, including 1 state-threatened species (western gray squirrel) and 1 state-candidate (juniper hairstreak). Most of the State listed species are common elsewhere in the United States, but are peripheral on their ranges in Klickitat County. Other wildlife found on the site include both common mammals and reptiles. Candidate federal species including the western sage lizard and some bat species may also use portions of the site and nearby areas. I: Potential loss of 9 hectares (22 acres) of oak and oak/pine would reduce populations of western gray squirrel. Direct habitat loss to juniper woodlands could result in reduced populations of juniper hairstreak. Impacts to sage lizard and candidate bat species habitat are expected to be minimal due to preferences for roosting although bat collisions with turbines would be possible during foraging. M: Mitigation discussed for plant communities and habitats would also help partially offset impacts to wildlife. Other mitigation includes: retain all vegetation and restrict entry within a 23 meter (75-foot) radius of any western gray squirrel nests. Retain at least 50 percent canopy cover in oak woodlands within a 120 meters (400 foot) radius of known western gray squirrel nest trees. To the extent possible, retain conifers (pine) for 25 percent of the remaining canopy. Avoid construction activity within 120 meters (400 feet) of any western gray squirrel nest between May 19 and September 30, and avoid blasting during that period within 396 meters (1,300 feet). SUAI: Minor reduction in western gray squirrel and juniper hairstreak habitat.	AE: Same as the Proposed Action. I: Would reduce impacts to the amount of oak and oak/pine habitat disturbed by approx. 1.2 hectares (3 acres). This would reduce construction disturbance to the western gray squirrel nests associated with oak habitat. M: Same as the Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western portion of the site Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Option 1 would avoid disturbing juniper habitat in the east-central portions of the site, which supports the Juniper hairstreak, during Phase 1 construction. Option 2 would reduce impacts to the large western habitat complex and therefore, reduce impacts on western gray squirrel nests in that habitat complex. M: Same as the Proposed Action, except over a more restricted area. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Less than the Proposed Action because mitigation to protect wildlife is included in this alternative. Phased development would reduce impacts to Priority Habitats and the wildlife that depend upon them. M: Included in this alternative. SUAI: None expected.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Birds	AE: Twenty-two special-status species could potentially be present in the Project vicinity. Of these 15 were observed in the study area. One species, the peregrine falcon, is listed as both state and federally endangered. In the Columbia River gorge management unit there are up to seven nesting pairs of peregrine falcon nests not including the pair frequently found at Rock Creek. Another species observed on site, the bald eagle, is listed as threatened both state and federally. In addition to the special-status species observed on site several other non-listed species were observed in the study area. Waterfowl concentrations along the Columbia River immediately south of the study area were observed. I: Potential impacts to raptors and other birds using the study area include collision with wind turbines, loss of habitat, disturbance to foraging and breeding behavior, collision with overhead powerlines, and electrocution. Construction activities at some turbine strings could disrupt bald eagle nests if they occur in winter. Construction activities at other turbine strings could disrupt red-tailed hawk and Swainson's hawk nesting activities. Operation of the Project could cause some birds to alter their flight paths which could in turn reduce their foraging efficiency. Although use of the site by peregrine falcons is infrequent (2 sightings), peregrine falcon populations within the Columbia River gorge could be measurably reduced from collisions with wind turbines. Bald eagle mortality could result from collision with wind turbines especially in the eastern part of the site. Mortalities from collision with wind turbines could be in the range of six to 20 birds annually but would not significantly affect the regional population of most other bird species observed in the study area. M: Establish an ongoing avian mortality and injury monitoring program. Avoid construction activities on the southern portion of turbine string NN during the breeding season for Swainson's hawk. Avoid general construction activities within 1,600 feet of golden eagle nests during the breeding season through fledgling, and avoid blasting within 1 mile during this period. Avoid construction disturbance within 400 meters (1,300 feet) of bald eagle roosts during October through March. Avoid construction activities within 400 meters (1,300 feet) of red-tailed hawk nests from April through July. Implement other measures for bald eagle and peregrine falcon established through the Section 7 process. SUAI: Incidental mortality as a result of collisions with wind turbines would be unavoidable.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Option 1 would avoid development of turbine strings along the flight path between the Columbia River and a night roost area used by wintering bald eagles and reduce impacts to peregrine falcons that were observed in the eastern portion of the site. Both options would provide the opportunity to monitor partial development of the site and actual avian impacts prior to full Project development. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Mitigation identified under the Proposed Action would be included in this alternative. In addition, development in Subarea 3 could not proceed until additional studies of bald eagle and peregrine falcon use were completed. M: Included in this alternative. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Cultural Resources	AE: Human occupation of the Mid-Columbia region dates back 10,500 years. The Columbia Hills cultural resources include sites from pre-historic Indian tribes to the early settlers of the 19th century. Field surveys identified 60 cultural resource properties on the site. Fourteen of the properties are sites and the other 46 are isolates. Eleven of the sites are potentially eligible for listing on the National Register of Historical Places (NRHP). Various ethnobotanical plant resources were also found on the site. Juniper Point appears to be eligible as a traditional cultural property. I: Project construction could adversely affect 11 sites and 5 isolates due to soil disturbance and unauthorized artifact collection. Although ethnobotanical resources are located on the site, current private property owners do not allow access to Native Americans for gathering. Project development would adversely affect Juniper Point as a traditional cultural property because it would be visible from Juniper Point. M: Precisely locate and flag potentially eligible sites and design Project features to avoid the identified properties during construction. Conduct further testing of the two sites that appear to be unavoidable. Design and implement scientific data recovery where further testing confirms eligibility and resources which cannot be avoided. Conduct additional surveys along final powerline corridor and access roads, and monitor construction activities. Monitor construction to ensure that flagged sites are avoided. If unidentified cultural resource properties are encountered during construction, cease construction in the immediate vicinity pending further investigation. Consultation with the Yakama Indian Nation indicates mitigation or impacts to Juniper Point as a TCP would not be acceptable to them. SUAI: Impact to the traditional cultural qualities of Juniper Point.	AE: Same as the Proposed Action. I: Additional sites could be identified along alternative powerline corridor. M: Any sites identified along the alternative powerline corridor could be avoided with minor adjustments to the corridor or placement of power poles. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action. I: Would reduce impacts to cultural properties and isolates by restricting development on turbine strings J and EE should further testing prove those sites eligible for the NRHP. M: Same as the Proposed Action, except that further testing for turbine strings J and EE would not be needed. SUAI: Same as the Proposed Action.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Option 1 would initially avoid impacts to sites and isolates located along turbine strings O, U, Y, Z, AA, BB, CC, EE, GG, and OO during Phase 1. Option 2 would avoid impacts to potentially eligible sites and isolates located along turbine strings A,B,E,J, and L in the western portion of the site during Phase 1. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Development in Subarea 1 would initially avoid impacts to sites located along turbine strings O, U, Y, Z, AA, BB, CC, EE, GG, and OO. Development in Subarea 2 would initially avoid impacts to sites located along turbine strings Y, Z, AA, BB, CC, EE, GG, and OO. Impacts to Juniper Point as a traditional cultural property would be the same as for the Proposed Action. M: Same as for the Proposed Action except to the extent that mitigation would be phased to correspond to phased development. SUAI: Same as for the Proposed Action.	AE: Same as the Proposed Action. I: Cultural properties located on site could potentially be disrupted by ongoing agricultural and grazing practices. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Aesthetics	AE: Project site consists of rolling hills and bluffs above the Columbia River and lies outside of the Columbia River Gorge National Scenic Area. Similar landscapes occur in east-central Washington and Oregon. The site is visible from I-84 within the scenic area and from portions of US-97, I-84, and SR-14 outside of the scenic area. The site is also visible from Hoctor Road, the Maryhill area, John Day Dam, and from towns on the Oregon side of the Columbia River. I: Turbines and roads would be most visible from Hoctor Road, the Maryhill area, and small towns along the Oregon side of the Columbia River. From within the scenic area, turbine strings would be visible as a series of white lines along the hillside, but may be indistinguishable as turbines. Research suggests inoperative turbines give visual impression of unreliability and are viewed negatively. The Project would not block significant views or alter a unique landscape. Indirect impacts could include attracting sightseers along US-97 and Hoctor Road. M: Prohibiting on site storage. Decommissioning plan. A sign directing traffic to safe viewing areas at established recreational sites. SUAI: With mitigation turbines would continue to be visible. Some would view project favorably while others would view it as in adverse impact.	AE: Same as Proposed Action. I: Same as Proposed Action. M: Same as Proposed Action. SUAI: Same as Proposed Action.	None identified.	AE: During Phase 1, Option 1 would be limited to western area of site. Option 2 would be limited to the eastern area of the site. I: Option 1 would be similar to the Proposed Action. Option 2 would eliminate views of the western part of the site. M: Same as Proposed Action. SUAI: Same as Proposed Action. Option 1 would be visible to more viewers.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Same as the Proposed Action except that development would be phased and impacts to viewers seeing the central and eastern portions of the site would be lessened for a period of time. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as Proposed Action I: Ongoing visual impacts from agriculture and utility uses would continue.
Land Use	AE: The Project site is located southeast of Goldendale, which has an estimated population of 3,730 in 1993. Population density is 8.7 persons per square mile. Project site lands are all privately owned and are currently used for range, and to a lesser degree, dryland agriculture, primarily wheat cultivation. Approx. 60 percent of the site is rangeland and approx. another 20 percent is cultivated land. There are a number of recreation areas frequented in the summer months south of the site. I: Project would be compatible with ongoing agricultural and adjacent land uses provided mitigation measures for impacts to other elements of the environment are implemented. Royalty and lease payments would provide a source of financial support to agricultural landowners. Construction jobs and a few (9) permanent jobs would be created. M: Screening and fencing around Project substation. SUAI: None.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: None.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Option 1 would initially avoid impacts to existing land uses in the east-central portion of the site. Option 2 would initially avoid impacts to existing land uses in the western portion of the site. M: Same as the Proposed Action. SUAI: None.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Same as the Proposed Action except that phasing development would delay or, if Subarea 2 or Subarea 3 were ultimately not developed, potentially avoid land use impacts in the central and eastern portion of the site. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action. I: Existing agricultural, grazing, and utility land uses of the site would continue. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Noise	AE: There are few noise sources in the vicinity of the Project site. The primary noise sources are traffic west of the site on US 97, south of the site on Interstate 84 and State Route 14. Other noise sources include trains, off-road vehicles, farm equipment and vehicles north of the site on Hoctor Road. Background noise levels at locations distant from roadways are likely to be between 40 and 50 dBA under calm wind conditions. Wind is the dominant noise source on site and masks other noises. I: Noise from construction would generate noise levels between 80-90 dB at a distance of 15 meters (50 feet), but is exempt from regulation. No receivers would experience noise levels above day-evening noise standard (60 dBA). Some locations could experience noise levels above the night-time noise standard (50 dBA). However, because the precise number of turbines in each turbine string has not yet been determined by the Applicant the noise modeling assumed the maximum number of turbines that could be developed in each string. This results in a total 481 turbines and overestimates the actual noise impacts resulting from Project development. M: Prior to issuing building permits for each phase, the Applicant should provide documentation verifying nighttime noise standards would not be exceeded at residential receivers. If this cannot be accomplished, mitigation, including obtaining noise easements from affected property owners, could be implemented. SUAI: None expected.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: None.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Neither option would exceed the daytime and evening noise standard (60 dBA) during Phase 1 of the Project. Under Option 1, two receivers could exceed the nighttime standard (50 dBA). Under Option 2, five receivers could exceed the nighttime standard. This alternative eliminates some flexibility to reduce nighttime noise levels through less density of turbines on identified turbine strings. M: Same as the Proposed Action. SUAI: None.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Same as the Proposed Action except that initially only Receptors 2 and 16 might exceed the nighttime noise standard. At full Project buildout, noise impacts would be the same as the Proposed Action. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.
Air Quality	AE: Primary stationary sources of particulate emissions in Klickitat County are scattered industrial facilities, wind-blown dust from non-irrigated agricultural areas, dust from agricultural activities, vehicle traffic, construction, and wood stove smoke. Areas on site have been mapped as critical erosion areas capable of sustaining net soil losses of 1.8 to 9 metric tons (2 to 10 tons) per year from wind and water erosion. I: Fugitive dust during construction would be the main source of air emissions associated with the Project. An estimated 9 metric tons (23,000 lbs.) of fugitive dust would be generated during construction. M: Same as identified for 'Earth'. SUAI: None expected.	AE: Same as the Proposed Action. I: Same as the Proposed Action with minimal additional construction disturbance and associated fugitive dust relative to the Proposed Action. M: Same as the Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict Phase 1 development to the east-central portion of the site. I: Option 1 would generate and estimated 3.8 metric tons (10,000 lbs.) of fugitive dust in the western portion of the site during Phase 1 construction. Option 2 would generate an estimated 4.7 metric tons (12,000 lbs.) of fugitive dust during Phase 1 construction. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Construction of Subarea 1 would generate approximately 3.8 metric tons (10,000 pounds) of fugitive dust. Construction of Subarea 2 would generate approximately 1.9 metric tons (5,000 pounds) of fugitive dust. Construction of Subarea 3 would generate an estimated 2.8 metric tons (7,000 pounds) of fugitive dust. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action. I: Dust would continue to be generated from farming, vehicle travel on dirt roads, construction and other sources. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Transportation	AE: Four roadways provide access to the general site area. U.S. Highway 97 (US-97) west of the Project site, Washington State Route 14 (SR-14), south of the site, Interstate 84 (I-84), south of the site in Oregon, and Hoctor Road which runs along the northern border of the site. A network of other paved and gravel roads serve the site area and adjacent properties. Sections of Hoctor Road are scheduled for repairs by Klickitat County in May-Sept. of 1995. I: Construction traffic is estimated to be 271 vehicle trips per day. Approx. 65 percent of daily trips during construction would be heavy vehicles. Average Daily Traffic Volume (ADT) would increase by five percent on US-97 south of Hoctor Road and three percent on SR-14 east of Stonehenge Drive. Average daily traffic volumes on Hoctor Road are estimated to increase up to 87 percent during Project construction. Heavy vehicle traffic along Hoctor Road could result in schedule conflicts with scheduled road repairs and some heavy vehicles may exceed seasonal load restrictions set by Klickitat County. Traffic conflicts could arise due to left turning vehicles at Hoctor Road and site Access Roads. M: Coordinate Project construction traffic routing and travel times with Klickitat County Public Services for work scheduled on Hoctor road in spring and summer of 1995. Require Applicant to pay for repair/restore Hoctor Road to satisfactory condition following completion of Phase 1 construction. Schedule the Project to avoid use of Hoctor Road during freeze/thaw cycles to the extent economically feasible and comply with temporary County weight restrictions. Use on site materials for gravel production. SUAI: With mitigation, no significant unavoidable impacts are expected.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: No restriction identified. I: Schedule conflicts with other construction projects around the project site do not allow for ready access to the eastern portion of the site, alternative routes will require investigation. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict development to the east-central portion of the site. I: Under both options sub-area development would reduce heavy vehicle traffic by approx. 50% during Phase 1 construction. Option 1 would further reduce impacts to Hoctor Road by avoiding the east-central portion of site, therefore most of the site could be accessed off of US-97 and SR-14. With construction of a new on-site access road from the western portion of the site to the central portion of the site, use of Hoctor Road could be eliminated during Phase 1 construction. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Qualitatively, the same as the Proposed Action except that phasing would reduce traffic by at least 50% initially. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.

Elements	Proposed Action	Alternative Powerline Route	Restricted Areas Alternative	Subarea Development Alternative	Preferred Alternative	No Action
Public Services and Utilities	AE: The areas surrounding the Project site are serviced by the Klickitat County Rural Fire District #7 and the Klickitat County Sheriff's Department. Communication systems in the general Project vicinity include microwave, television, radio and navigation systems on Juniper Point, Luna Point, Haystack Butte, and Observatory Hill. A number of utility corridors currently cross the site including transmission lines and a natural gas pipeline. Potable water is supplied by individual domestic wells. Waste disposal is provided by a private company. I: Potential increase in demand for fire and medical service during construction and to a lesser extent, operation of the Project. Potential for turbines in a few strings to block 'line of sight' microwave transmissions. Existing utilities are not expected to be effected by Project construction or operation. Construction debris is not anticipated to be generated in significant quantities. Impacts could result from broken or decommissioned equipment being stored on site. M: A readily accessible water truck should be located on site during all Project construction and welding operations. Restrict high fire-risk activities during extreme dry periods. Provide staff with cellular phones for timely communication with emergency services. Prohibit smoking on the site except in designated areas. Equip all emergency departments and vehicles with access to electronic gates. Precisely determine the location and frequency of potentially impacted communication transmitters and receivers when siting individual turbines. Avoid construction in the immediate vicinity of the existing natural gas pipeline or employ hand-digging if required. Require the Applicant to remove all turbine structures taken out of operation. SUAI: With the recommended mitigation none are expected.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Same as the Proposed Action, but Option 1 would restrict Phase 1 development to the western portion of the site. Option 2 would restrict development to the east-central portion of the site. I: Option 1 would avoid potential Phase 1 impacts to communication systems in the east-central portion of the site and reduce the overall area of construction activities near the natural gas pipeline prior to development of subsequent phases. Option 2 would avoid potential Phase 1 impacts to communication systems in the western portion of site. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Same as the Proposed Action except that phasing would initially avoid impacts to communication systems in the east-central portion of the site. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action. I: None. M: None. SUAI: None.
Health & Safety Risks	AE: Potential environmental risks on the Project site currently include: existing powerlines, farming-related risks, and existing gas pipeline and pumping stations. I: Potential for electric shock, fires, and worker injury from construction, operation and maintenance of the Project. No significant impacts to air traffic safety or from electromagnetic fields are expected. M: Develop and maintain an on-site health and safety plan informing employees and others on site what to do in case of emergencies, including the locations of fire extinguishers and nearby hospitals, important telephone numbers, and first aid techniques. SUAI: None expected.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: None expected.	No restrictions identified.	AE: Same as the Proposed Action. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: None expected.	AE: Same as the Proposed Action except that the site would be divided into three subareas, in the western, central, and eastern portions of the site. I: Same as the Proposed Action. M: Same as the Proposed Action. SUAI: Same as the Proposed Action.	AE: Same as the Proposed Action I: Existing risks would continue. M: None. SUAI: None.

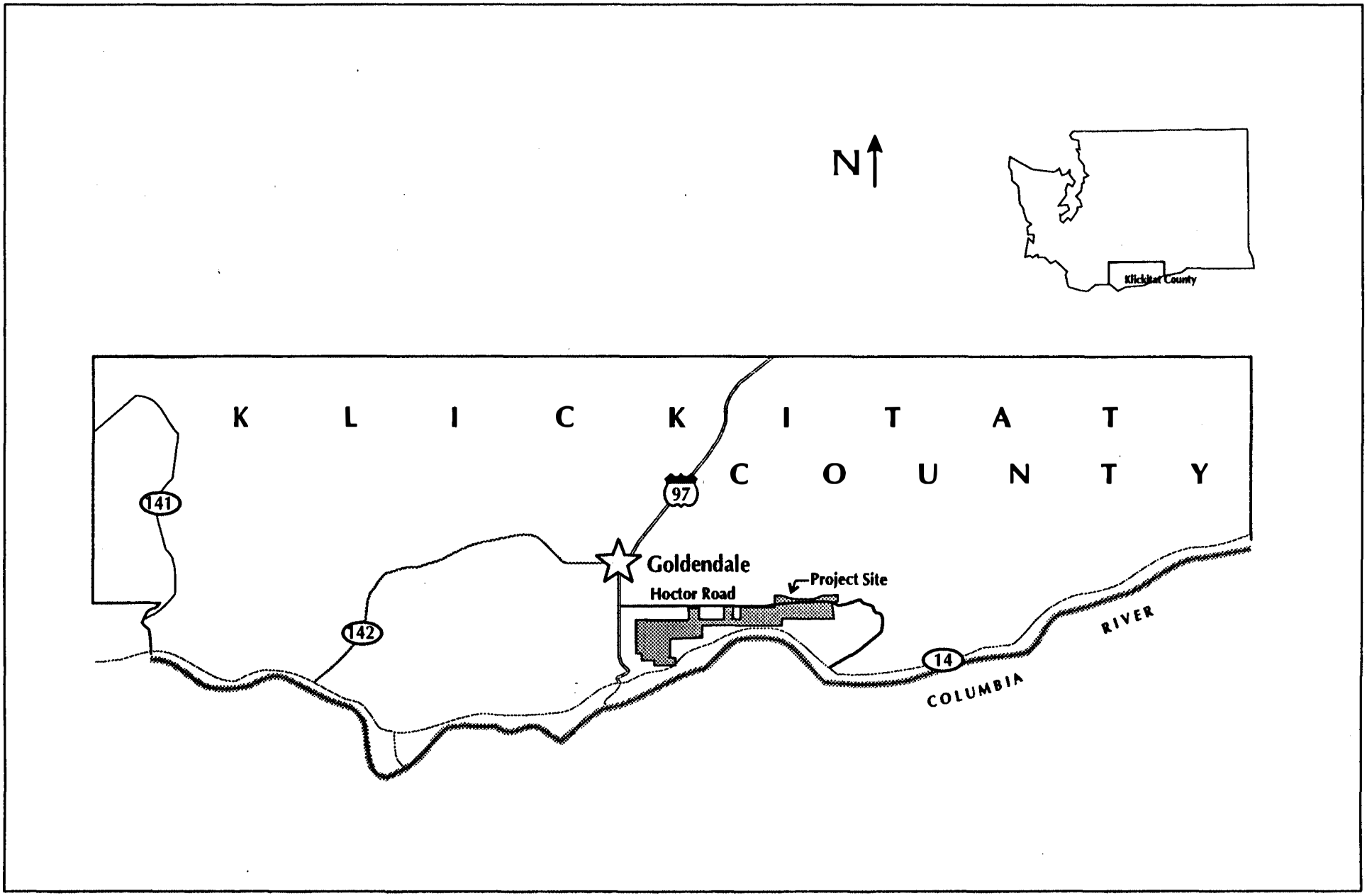
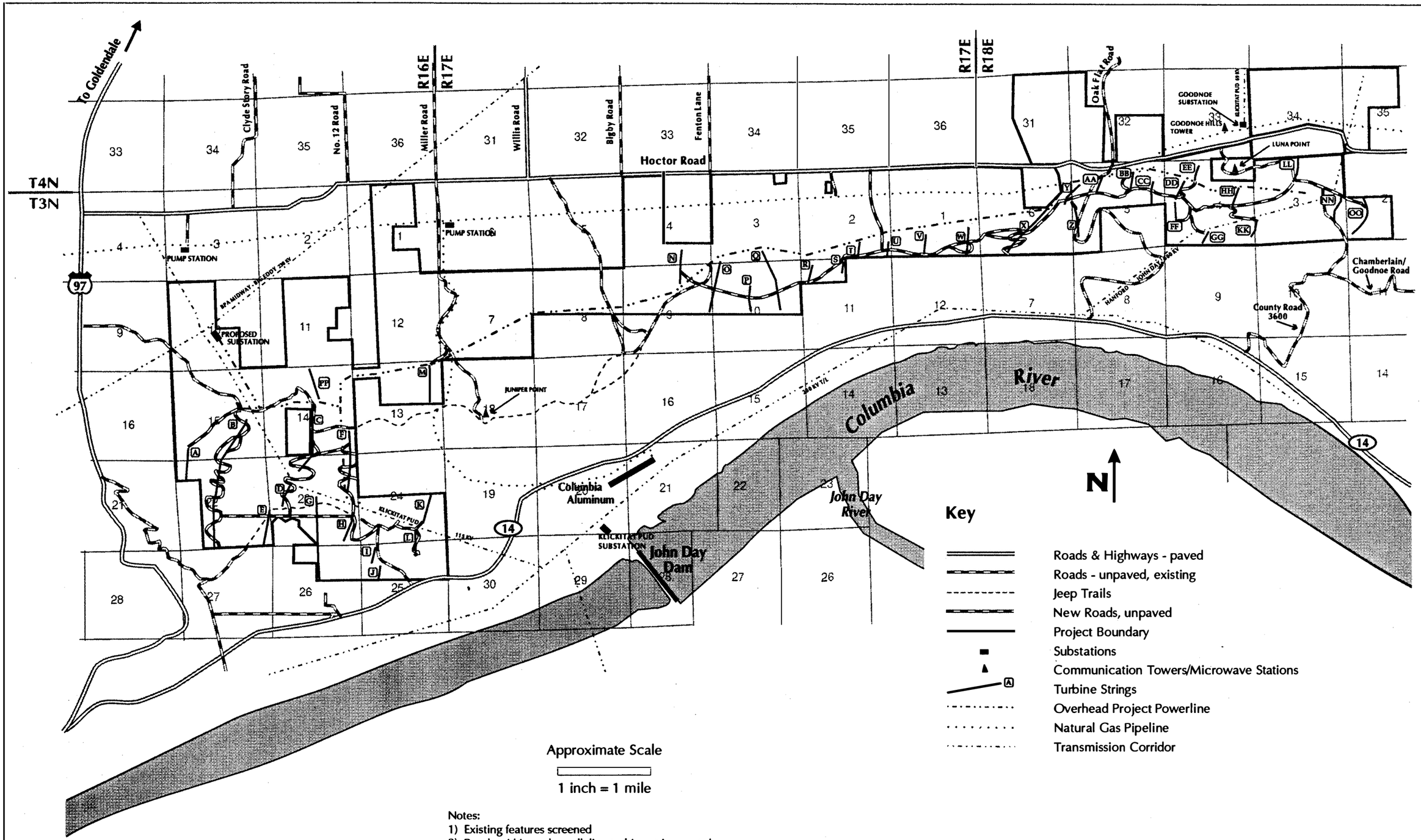


Figure S-1 – Location Map



Notes:
1) Existing features screened
2) Roads within and paralleling turbine strings not shown

Figure S-2 — Proposed Site Development

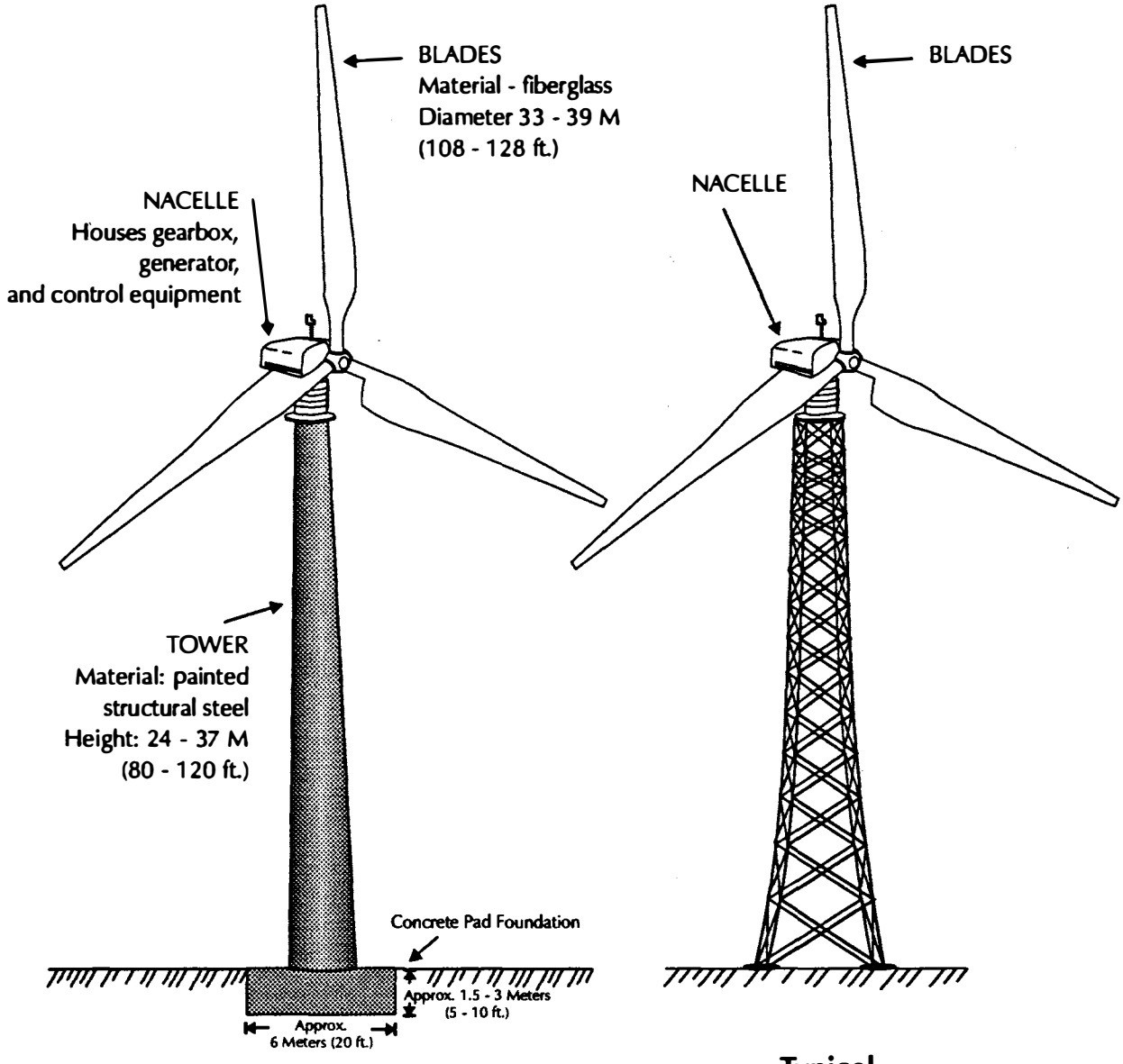


Figure S-3

Proposed Turbine with Tubuler Towers vs. Typical Lattice Tower

Source: KENETECH Windpower

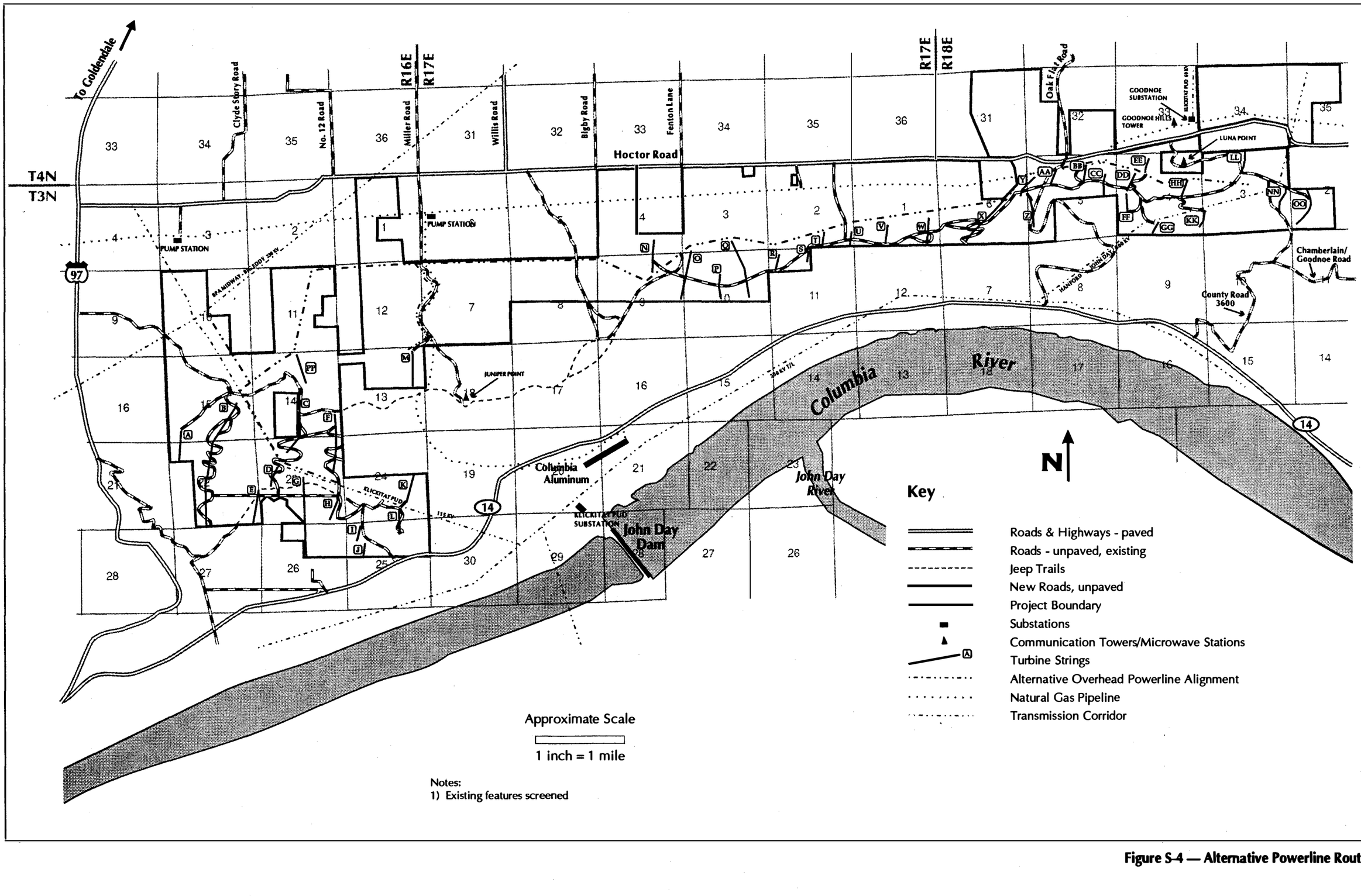


Figure S-4 — Alternative Powerline Route

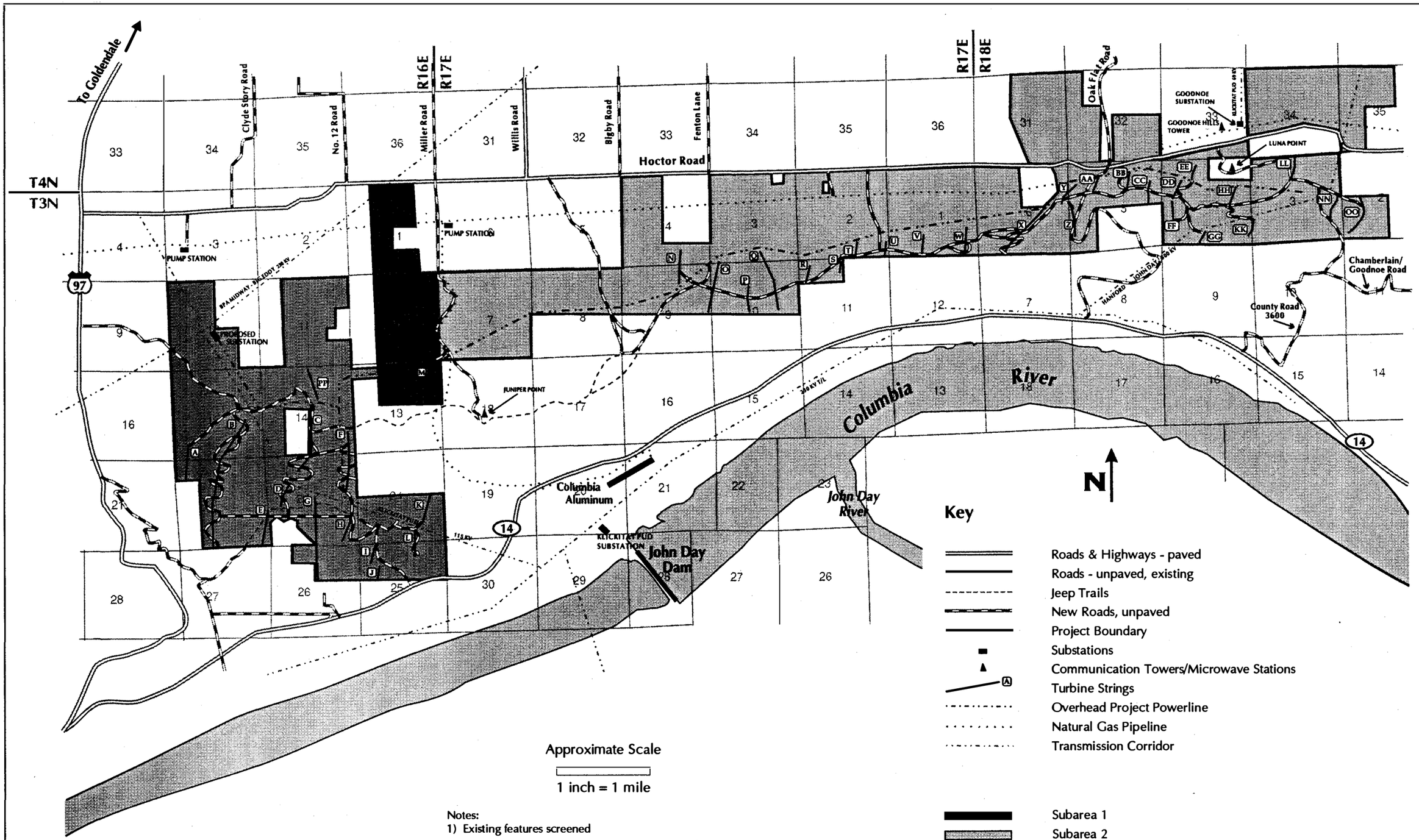
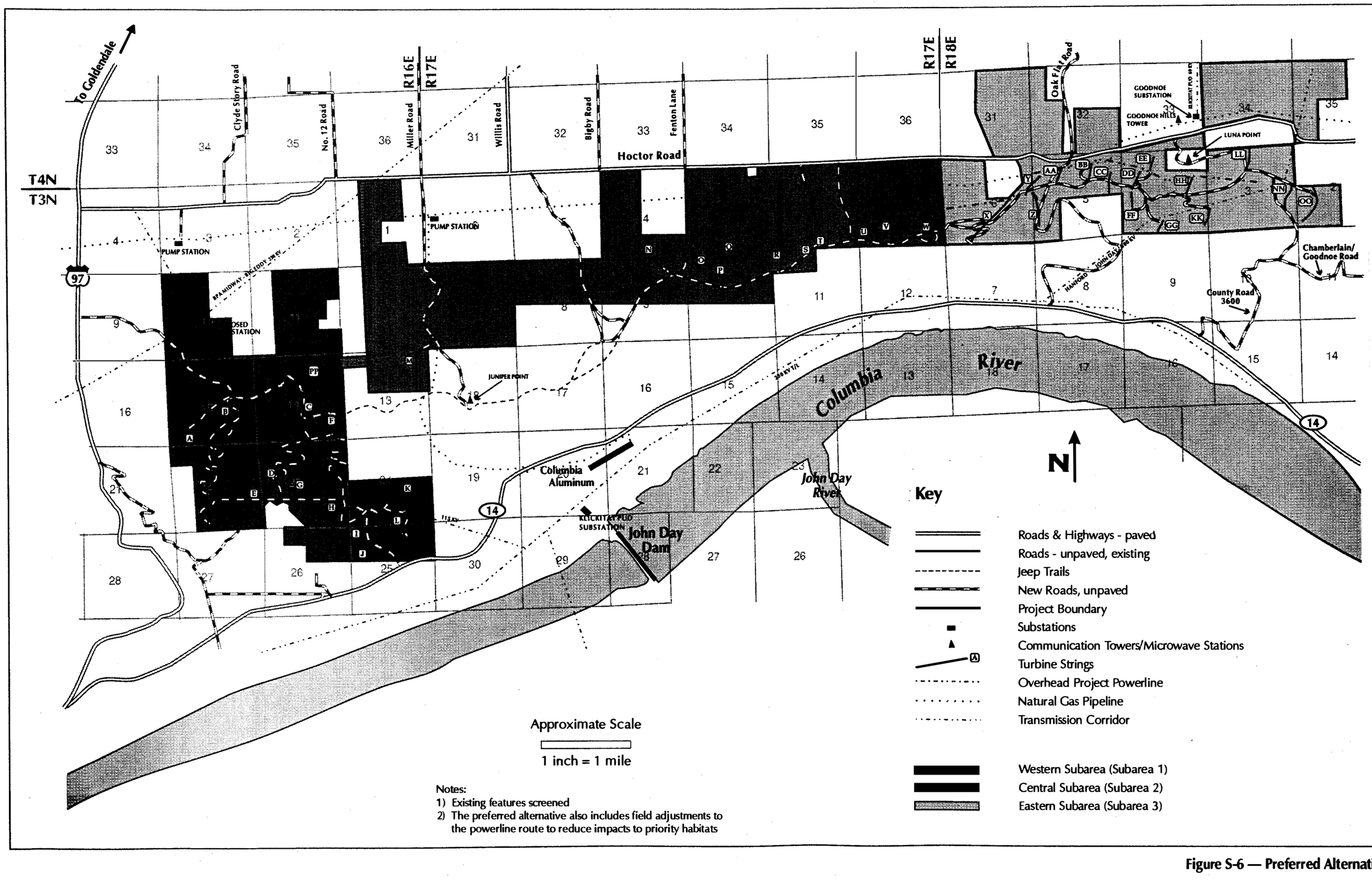


Figure S-5 — Subarea Development Alternative



Notes:
1) Existing features screened
2) The preferred alternative also includes field adjustments to the powerline route to reduce impacts to priority habitats

Figure S-6 — Preferred Alternative

PART 1: MODIFICATIONS TO THE PROPOSED ACTION

Part 1 – Modifications to the Proposed Action

Subsequent to issuance of the draft EIS, KENETECH Windpower Inc. (the Applicant) has filed two modifications to the Proposed Action with Klickitat County. These modifications include:

- *Relocation of the proposed Project substation from near Hoctor Road in Section 1, T3N, R16E to Section 10, T3N, R16E near an existing 115-kV Klickitat County powerline and the 230-kV BPA Midway-Big Eddy powerline.* Figure F.1 shows proposed Project features including the new substation location and associated changes to the proposed powerline route. Road access to the proposed substation would be determined by the Applicant during final design.

- *Revision to the proposed turbine tower design.* The draft EIS evaluated a modified tubular tower for the proposed Project turbines. The modified tubular tower incorporated a three-legged support resting on concrete pier foundations. The Applicant's revised proposal incorporates a tubular tower extending fully to the ground and resting on an approximately 6-meter by 6-meter (20-foot by 20-foot) concrete slab foundation. The concrete slab foundation would be approximately 1.5 to 3 meters (5 to 10 feet) deep. Figure F.2 shows the revised tower design and, for comparison purposes, a typical lattice tower design. The revised tower design includes a fully enclosed climbing ladder and avoids the use of guy wires. The Applicant is proposing this design modification in response to concerns expressed by the U.S. Fish and Wildlife Service and Washington Department of Fish and Wildlife regarding the opportunities for bird perching created by lattice and, to a lesser extent, modified tubular towers.

The lead agencies have determined that these modifications would not result in additional significant adverse impacts beyond those identified in the draft EIS.

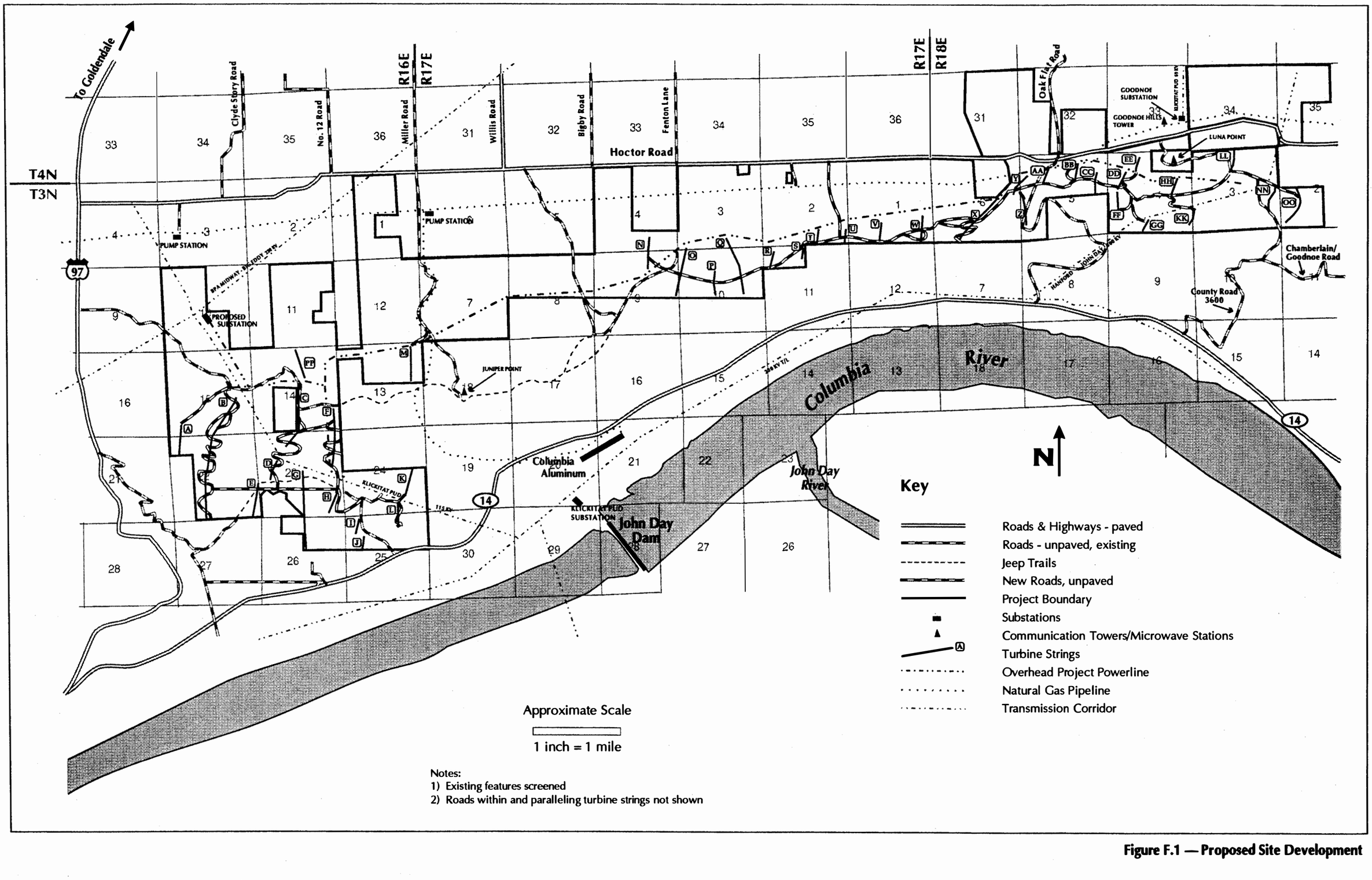


Figure F.1 — Proposed Site Development

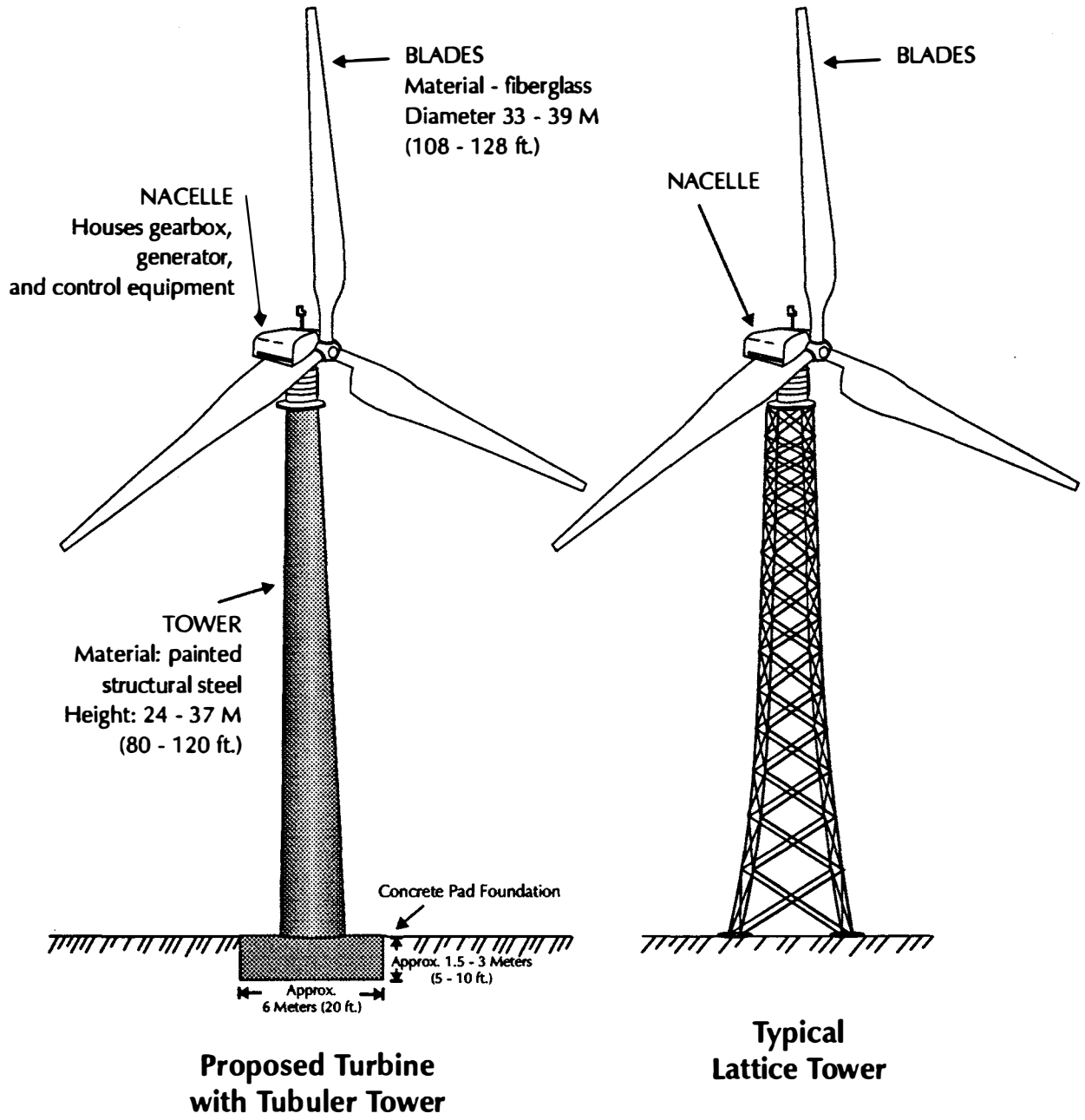


Figure F-2

Proposed Turbine with Tubuler Towers vs. Typical Lattice Tower

Source: KENETECH Windpower

PART 2: PREFERRED ALTERNATIVE

Part 2 – Preferred Alternative

2.1 Introduction

The draft EIS evaluated the Proposed Action and four alternatives (Alternative Powerline Route, Restricted Areas Alternative, Subarea Development Alternative, and No Action) but did not identify a Preferred Alternative. Based on the analysis of alternatives in the draft EIS and on comments received regarding impacts and mitigation measures, the lead agencies (Klickitat County and the Bonneville Power Administration) have now identified a Preferred Alternative. The Preferred Alternative incorporates aspects of the Subarea Development Alternative, Alternative Powerline Route, and Restricted Areas Alternative as well as certain mitigation measures identified in the draft EIS and in comments on the draft. The following discussions describe the Preferred Alternative including mitigation measures.

2.2 Description

2.2.1 Phasing, Additional Pre-construction Avian Monitoring and Subsequent Environmental Review

- The Preferred Alternative divides the Project site into three subareas as shown in Figure F.3.

- Initial development, estimated to include about 50 MW of output from about 150 turbines, is limited to Subarea 1.

- Project development could proceed (building permits could be issued) into Subarea 2 following a location and survey of the powerline route and access roads between turbine strings, conducted in consultation with biologists from the Washington Department of Fish and Wildlife (WDFW), Priority Habitat and Species Program. This survey is to locate the powerline and road routes through Sections 11, 12, 13, and 14 T3N, R16E that avoid impacts to Priority Habitats as identified in the EIS and on site by the WDFW to the maximum extent reasonably feasible.

- Project development could proceed into Subarea 3 (building permits could be issued) only after an additional winter season of bald eagle monitoring is completed and evaluated. The monitoring program should be targeted at more precisely determining winter bald eagle flight paths across the Project site between day and night roost areas in support of development of a Bald Eagle Management Plan. The winter bald eagle monitoring is to be conducted in consultation with WDFW and the U.S. Fish and Wildlife Service (USFWS) with results reported to USFWS and WDFW, which may comment to Klickitat County regarding the results of the study prior to the issuance of building permits.

- Project development could proceed into Subarea 3 only after an additional year study to better determine use patterns of the pair of peregrine falcons sighted in the Rock Creek area during EIS studies for the Proposed Action. The study of peregrine falcon use is to be developed and conducted in consultation with WDFW and USFWS with results reported to these two agencies. USFWS and WDFW may comment to Klickitat County regarding the results of the study prior to issuance of building permits.

- Based on the results of the additional avian monitoring, the lead agencies will review the assessment of significant unavoidable adverse impacts included in this EIS to determine if significant new circumstances and information have been developed. If the additional monitoring concludes that there are significant new circumstances or information relevant to environmental concerns and indicating the Proposed Action's probable significant adverse environmental impacts, a Supplemental EIS will be prepared prior to issuing building permits for Project development in Subarea 3.

2.2.2 Location of Project Features

To the maximum extent feasible given site topography, project boundaries, the status of easements, project economics, and safety considerations (i.e., maintaining a minimum 61 meters (200 feet) between the powerline and turbines), incorporate the alternative powerline route into the Project design and/or make adjustments to the proposed powerline route and primary access road locations, after consultation with WDFW, that are designed to meet the following objectives:

- Reduce disturbance of shrub-steppe habitat.
- Reduce disturbance to Oregon white oak habitat.
- Reduce disturbance to Juniper Savannah habitat.
- Route powerline and roads in common corridors to reduce the overall amount of site disturbance.
- Avoid, to the maximum extent feasible, disturbance to areas of high-quality Douglas' buckwheat/Sandberg's bluegrass plant community (roughly the northern half of turbine string C and associated roads; roughly the southern third of turbine string M; turbine strings S and U; and road segment R to V).

2.2.3 Additional Cultural Resources Surveys

Conduct additional Cultural Resources Surveys prior to construction, including:

- Precisely locate sites and isolates along turbine strings A, B, E, L, O, U, Y, Z, AA, BB, CC, DD, GG, and OO using property surveys or other means so that the final design of roads along the turbine strings and placement of the turbines can avoid the identified sites and isolates where feasible. Sites located along these corridors occupy limited portions of the surveyed corridors and avoidance appears to be feasible. The isolates occupy a very limited area and could be easily avoided during construction.

- Conduct additional cultural resources surveys of the Project powerline, primary access roads, and construction staging areas, once these areas are more precisely identified, and adjust their locations to avoid any potentially eligible cultural properties where feasible.

- If development will include turbine strings J and EE, complete further testing of the two archaeological sites located along those turbine strings, and of any other potentially eligible sites that prove to be unavoidable during final design, to determine their eligibility for listing in the National Register. Design and implement scientific data recovery where further testing confirms eligibility and avoidance is not feasible.

2.2.4 Hoctor Road Survey

Provide financial support for a detailed County assessment of the Hoctor Road roadway condition prior to commencement of Phase 1 construction and following completion of Phase 1 construction to determine the amount of road damage caused by construction vehicles and to allocate the appropriate costs to the Applicant.

2.2.5 Environmental Protection Plans

2.2.5.1 Reseeding/Restoration/and Weed Management Plan

Prior to construction, develop a Reseeding/Restoration/and Weed Management Plan reviewed by the Washington Noxious Weed Control Board that, at a minimum, addresses the following:

- Stockpiling topsoils separately from other soils.

- Specifications for reseeding any areas disturbed during construction with mixes that are certified free of noxious weeds.

- Specifications that any temporary seeding used for erosion control during construction should also be accomplished with seed mixes certified free of noxious weeds. These specifications should also be incorporated into the Erosion and Sediment Control Plan discussed in Section 2.1.4.2 of the draft EIS.

- Timing and application rates for seed mixes.

- Specifications for reseeding disturbed bluebunch wheatgrass-Sandberg's bluegrass and bluebunch wheatgrass-Idaho fescue communities with seed mixes that include species native to those communities, especially dominant species.

- Livestock exclusion from reseeded native grasslands in shrub-steppe habitat for at least two to three years and until native vegetation is established.

- Coordination with the CARES' Columbia Windfarm #1 project to enhance long-term efforts to control invasive weeds where the two project sites adjoin.

- Annual monitoring of restored and/or reseeded shrub-steppe habitat and communities for noxious weeds and ongoing actions to control noxious weeds, until restoration vegetation is reasonably established.

- Measures for addressing requests of the Klickitat County weed coordination.

2.2.5.2 Construction Environmental Protection and Monitoring Plan

Prior to construction, develop a Construction Environmental Protection and Monitoring Plan prepared in consultation with WDFW that includes the following:

- A site access plan that designates roads and directs construction workers to use existing roads wherever possible.

- Provisions for flagging the limits of construction and flagging and avoiding environmentally sensitive areas that can be avoided consistent with the provisions of Section 2.2.2 and 2.2.3 of this document while still meeting the Project objectives. Environmentally sensitive areas include:

    - High-quality native plant communities and priority habitats as described in Section 2.2.2.

    - Areas within 122 meters (400 feet) of any known western gray squirrel nest between May 15 and September 30 for general construction and within 396 meters (1,300 feet) for blasting or activities with similar noise impacts between May 15 and September 30.

    - Areas within a 23-meter (75-foot) radius of any western gray squirrel nests.

    - Areas within 400 meters (1,300 feet) of bald eagle roosts during October through March unless subsequently modified by the USFWS through the Section 7 consultation process. Any permanent buffers would also be established through the Section 7 consultation process and development of the Bald Eagle Management Plan.

    - Areas within 400 meters (1,300 feet) of red-tailed hawk nests from April through July.

    - The southern portion of the turbine string NN from April 1 to September 1 (breeding season for Swainson's hawk).

    - From March 15 through July 15 areas within 488 meters (1,600 feet) of golden eagle nests for general construction activities and from March 15 through July 15 within 1 mile for blasting or activities with similar noise impacts.

    - Potentially eligible sites and isolates located along turbine strings A, B, E, L, O, U, Y, Z, AA, BB, DD, GG and OO if final Project design confirms that they can be avoided.

    - Other cultural resources identified during the studies outlined in Section 2.2.3.

- Provisions for independent environmental monitoring during construction using County-approved environmental monitors and a tribal monitor appointed by the Yakama Indian Nation to ensure that flagged environmentally-sensitive areas are avoided.

- Provisions for training construction workers on the need to avoid cultural properties and procedures to follow if previously unidentified cultural properties, including Indian graves, are encountered during construction.

- The Erosion and Sediment Control Plan prepared to comply with the requirements of the Department of Ecology's Baseline General Permit for Stormwater Discharge Associated with Industrial Activities (construction over 5 acres).

2.2.5.3 Operations Monitoring Plan

Prior to commercial operation, develop an Operations Monitoring Plan in consultation with WDFW that includes the following:

- Ongoing erosion monitoring on a weekly basis and after large rainfall or snowmelt events

- Weekly monitoring of turbine sites to detect and correct any leakage of hydraulic or lubricating fluids.

- Monitoring the site for evidence of unauthorized use and providing additional security as appropriate.

- Avian Injury and Mortality Monitoring Plan developed in consultation with the USFWS, BPA, and WDFW. The goals of the Avian Injury and Mortality Monitoring Plan would include: 1) responding to the discovery of injured birds in order to improve their chances for survival; 2) procedures for providing incident reports to the USFWS; and 3) procedures for evaluating incident report data on a periodic basis and reporting findings to the USFWS and WDFW.

2.2.5.4 Habitat Replacement/Mitigation Plan

Prior to commencement of commercial operation, develop a habitat replacement/mitigation plan in consultation with WDFW addressing replacement through on-site or off-site preservation/ enhancement of oak/oak-pine woodland and Douglas' buckwheat/Sandberg's bluegrass community, with the goal of preserving similar quantity and quality of those habitats lost through Project development.

2.2.5.5 Decommissioning Plan

Prior to commercial operation, provide a Decommissioning Plan for approval by the Klickitat County Planning Department outlining the circumstances under which individual turbines will be removed from the site, methods used to restore areas previously containing turbines, and methods for decommissioning the overall Project and restoring the overall Project site to a natural condition.

2.2.6 Additional Mitigation Measures

The following additional mitigation measures would further reduce environmental impacts and are included as part of the preferred alternative:

2.2.6.1 Design

- Design road and turbine foundations and cut slopes in consultation with a professional geotechnical engineer. If geotechnical studies and final design reveal any unstable slopes that cannot be adequately stabilized during construction or over the period of Project operation, avoid constructing permanent or temporary Project features in those areas.

- Design structural foundations, buildings, and structures in accordance with Uniform Building Code requirements for seismic zone 2B.

- Design drainage ditches and culverts considering the effects of snowmelt, and use rock or other channel protection in steeper drainage ditches and channels to reduce the potential for erosion and sedimentation. Where technically feasible, limit utility trenches across waters of the United States to a top trench width of 0.6 meters (2 feet) or less.

- Provide reasonable and economically feasible design measures, to be approved by the Klickitat County Department of Public Services, to prevent small mammals from burrowing under foundations wherever foundations are less than 2 feet deep.

- Design turbines to heights that do not require lighting. Design other limited site lighting, if any, to conform with requirements of the Klickitat County Illumination Control overlay zone.

- Precisely determine the location and frequency of potentially impacted communications transmitters and receivers when siting individual turbines in turbine strings M, G, I, K, Z, CC, DD, NN, EE, and OO to guard against potential signal interference. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.

- Coordinate tower paint colors to be compatible with those proposed for the CARES Columbia Windfarm #1 Project. Turbine blade colors are to be neutral except to the extent that colors and patterns are recommended through consultation with the USFWS and WDFW.

- Design slab foundations with berms to reduce the potential for leakage of hydraulic fluids and fuels to enter soil and water resources.

2.2.6.2 Construction

- Allow clearing and grading activities only from the late spring through early fall period (June through October) and minimize grading disturbance to the maximum extent feasible considering the need to minimize disturbance to Priority Habitats and avoid archaeological resources.

- To the extent present in the existing environment, retain at least 50 percent canopy cover in oak woodlands within a 120-meter (400-foot) radius of known nest trees. To the extent they are available, retain conifers (pine) for 25 percent of the remaining canopy cover.

- Locate construction staging areas to avoid:

    - High-quality native plant communities and priority habitats.
    - Areas that would be clearly visible from US-97, SR-14, and I-84.
    - Cultural resources potentially eligible for the National Register of Historic Places

- Flag environmentally sensitive areas and monitor construction consistent with the Construction Environmental Protection and Monitoring Plan.

- If any previously unidentified cultural resource properties are encountered during construction, cease construction activities in the immediate vicinity of the site pending evaluation by a qualified archaeologist and consultation with the State Office of Archaeology and Historic Preservation to identify appropriate mitigation measures such as avoidance or scientific data recovery.

- Provide for lubrication and maintenance of construction equipment in contained areas and use liquid-absorbing booms, socks, pads, or loose absorbent materials in the event of minor spills of fuels, oils, lubricants, and other fluids.

- Reduce noise levels during construction by employing the following types of measures:

    - Turn off idling motor vehicles and construction equipment when not in use.
    - Select the quietest effective setting for back-up alarms.
    - Confine construction activities to daytime hours in proximity to homes.

- Coordinate routing of Project construction traffic and travel times with the Department of Public Services and with the CARES Columbia Windfarm #1 Project to reduce conflicts with construction work on Hoctor Road scheduled for the summer of 1995.

- To the extent economically feasible, schedule Project construction activities to avoid use of Hoctor Road during likely periods of freeze/thaw cycles and comply with temporary County weight restrictions when in effect.

- Route construction traffic to the site in a manner that minimizes construction traffic on Hoctor Road, to the extent feasible.

- Employ traffic safety precautions such as traffic control flaggers and signs warning of construction activity and merging traffic.
- Provide a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.
- Minimize or restrict high fire-risk activities during extreme dry weather periods.
- Provide Project staff with cellular phones to enable timely communication with the Fire Department and other emergency services.
- Provide appropriate sanitation facilities and potable water on site during construction.
- Prohibit construction personnel from smoking on the Project area except within designated areas.
- Provide all County emergency departments with controls to electronic gates.
- Provide fire extinguishers and shovels on vehicles and equipment used during construction.
- Restore temporary roads and staging areas to preconstruction grades.
- Restore all disturbed areas consistent with the Reseeding/Restoration/and Weed Management Plan developed for the Project.

2.2.6.3 Operation

- Coordinate with Washington, Oregon, and federal recreational facilities and areas, as well as Washington and Oregon State Highway Departments, to provide signs directing sightseers along I-84, SR-14, and US-97 to existing public facilities that provide safe viewing areas of the Project site.
- Provide liquid-absorbing pads under turbines to contain or collect lubricant spills during turbine servicing.
- Provide a clean looking facility free of debris and unused or broken down equipment by: storing equipment and supplies off site, promptly removing any damaged or unusable equipment from the site, and promptly repairing or decommissioning turbines that are not functioning or prove to be uneconomically sited consistent with the Project Decommissioning Plan.
- Monitor operation consistent with the Operations Environmental Monitoring program developed for the Project.
- Maintain sound levels at sensitive receptor residences that are under the maximum levels for receiving properties based on the receiving properties' environmental designation for noise abatement (EDNA) at WAC 173-60 subject to the temporary exceedances allowed in state regulations.

- In the event of a complaint to the County that noise standards may be exceeded due to Project turbines, require the Applicant to provide appropriate sound level measurements on the complaintant's property.

- During welding operations, have a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.

- Minimize or restrict high fire-risk activities during extreme dry weather periods.

- Provide Project staff with cellular phones to enable timely communication with the Fire Department and other emergency services.

- Provide appropriate sanitation facilities and potable water on site, if needed, during operation.

- Prohibit operating personnel from smoking on the Project area except within designated areas.

- Provide all County emergency departments with controls to electronic gates.

2.2.7 Mitigation Proposed by the Applicant

The Applicant's proposal includes the following mitigation measures, which are also incorporated into the Preferred Alternative:

- Design and install turbine towers that do not require guy wires for support.

- Design and install turbines using tubular towers with inside climbing ladders. Design the ladders to meet all applicable health and safety standards.

- Reduce the potential for electrocution and collisions by designing the 34.5-kV powerline with raptor protection measures in accordance with the best practices contained in *Suggested Practices for Raptor Protection on Powerlines* (Miller, 1975 or its most current release), or *Mitigating Bird Collisions with Powerlines: The State of the Art, 1994* (APLIC, 1994).

- Provide turbines with overspeed protection including:

    - Tachometers to constantly monitor rotor speed.

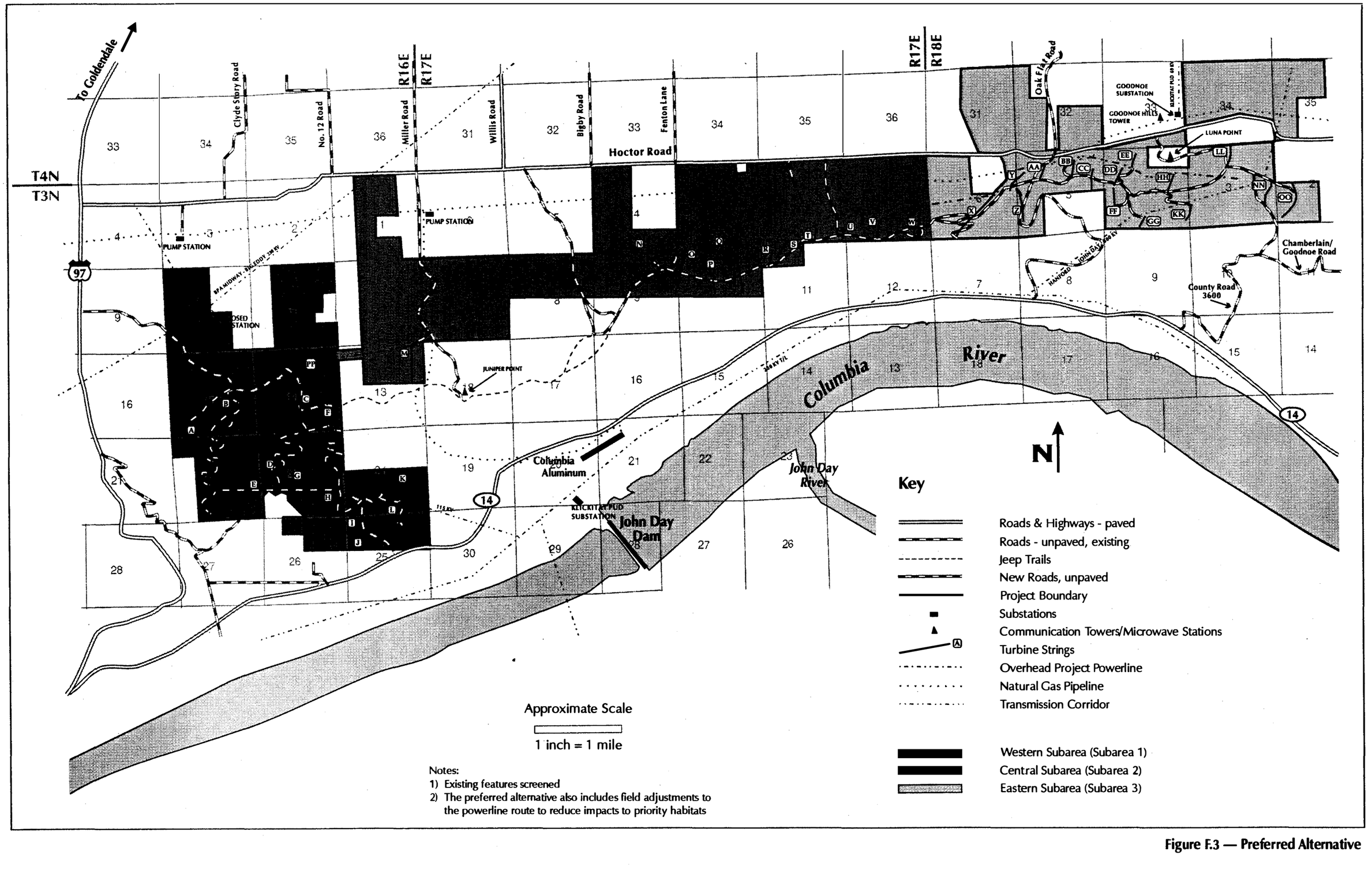
    - A control system programmed to immediately shut-down the turbine by rapidly pitching the blades to the "feather" position.

    - In the event of a failure of the hydraulic power unit, a safety mechanism uses stored pressure to pitch the blades to the "feather" position.

- Design the turbine towers and foundation to survive wind speeds of 161 km per hour at 9 meters (100 mph at 30 feet) above the ground surface.

- House gears and moving parts within the nacelle to contain sparks.

- Provide locks and high voltage warning labels on all control cabinets and transformer cabinets.
- Provide fencing and locking of the Project substation and providing warning signs about the presence of high voltage equipment.
- Provide radio-controlled locked gates onto the Project site and signs warning of high voltage equipment and buried cable.
- Locate the overhead powerline at least 61 meters (200 feet) from the turbines so that cranes working on the turbines will be at a safe distance from the powerlines. Because of this safety requirement, powerlines running along turbine strings would be located underground.
- Upgrade and use existing roads wherever feasible rather than building new roads.
- Design roads with ditches and culverts sized to accommodate the 100-year storm.
- Locate roads along ridgelines, where feasible, to reduce the amount of cut and fill (grading) required.
- Revegetate any disturbed areas that are not permanently occupied by Project features.
- Provide a minimum 15-cm (6-inch) gravel surface on Project roads to reduce wind erosion.
- Use non-reflective paints to reduce glare.
- Locate turbines in strings to improve aesthetics by providing a more uniform-looking development.
- Do not use pesticides and rodenticides during Project construction and operation. Avoid the use of herbicides except as reasonably necessary for weed control.
- Design turbine structures to fall below the 61-meter (200-foot) requirement for lighting established by the Federal Aviation Administration.



Notes:
1) Existing features screened
2) The preferred alternative also includes field adjustments to the powerline route to reduce impacts to priority habitats

Figure F.3 — Preferred Alternative

PART 3: CORRECTIONS AND MODIFICATIONS TO THE DRAFT EIS

Part 3 – Corrections and Modifications to the Draft EIS

3.1 Introduction

This part of the Final EIS corrects and modifies the text of the Draft EIS based on comments received and on the modifications to the Proposed Action described in Part 1 of this document. Deletions are shown in "strikeout" while additions are indicated by a double underline.

3.2 Corrections and Modifications

Changes to Summary

Replace the Draft EIS Summary with the Summary included in this document.

Changes to Part 1 – Alternatives Including the Proposed Action

Make the following modifications to Section 1.1.1, Existing Setting, third paragraph, second to last sentence:

> The overhead powerline would traverse approximately ~~3.2~~ 2.4 hectares (~~8~~ 6 acres) of cultivated land, but most of this area could remain in agricultural use following Project development.

Make the following modifications to Section 1.2.1, Applicant's Objectives, first paragraph, third bulleted item:

- To initially deliver 50 MW of installed wind-powered rated capacity to ~~three investor-owned~~ electrical utilities (PacifiCorp~~, Puget Sound Power and Light Company,~~ and Portland General Electric with the possible future participation of Puget Sound Power and Light or other utilities) that have entered into an agreement to purchase this capacity in order to demonstrate the technical and economic feasibility of integrating wind energy into their mix of generating resources.

Make the following modifications to Section 1.2.1, Applicant's Objectives, second paragraph, last sentence:

> Subsequent phases totalling up to 65 MW would be developed once options for additional generating capacity are exercised by the ~~three~~ investor-owned utilities or once the Applicant has entered into other sales agreements for the remaining rated capacity.

Make the following modifications to Section 1.2.1, Applicant's Objectives, second paragraph, second bulleted item:

- Using ~~modified~~ tubular towers, designing powerline poles and lines with "raptor-protection" measures and employing other design features to reduce the potential for bird strikes or electrocution.

Make the following modification to Section 1.2.2, BPA Purpose and Need, first sentence:

As discussed in Section 1.2.1, PacifiCorp~~, Puget,~~ and PGE have purchased a portion of the Project's generating capacity in order to understand the technical and economic feasibility of integrating wind energy into their mix of generating resources and to meet a demand for power.

Replace Figure 1.3 and all references thereto with Figure F.1, which is included in Part 2 of this document.

Make the following modification to Section 1.4.1, Proposed Site Development, second paragraph, third and fourth, sentences:

Construction of the powerline would temporarily disturb about ~~17~~ 15 hectares (~~42~~ 36 acres). The powerline would permanently occupy about ~~14~~ 11 hectares (~~34~~ 28 acres).

Make the following modification to Section 1.4.1, Proposed Site Development, fourth paragraph:

The total amount of land that would be disturbed during construction is about ~~155~~ 153 hectares (~~382~~ 376 acres). After restoration of temporarily disturbed areas, Project features would permanently occupy about ~~79~~ 76 hectares (~~193~~ 187 acres). Less than 2 hectares (less than ~~3~~ 5 acres would be impervious surface~~ (see Table 1.2)~~.

Replace Table 1.2 with the following:

TABLE 1.2
Summary of Project Features

Features	Area Temporarily Disturbed		Area Permanently Occupied	
	Hectares	Acres	Hectares	Acres
Turbine String and New Secondary Access Road[1]	98	243	33	82
Powerline	~~17~~ 15	~~42~~ 36	~~14~~ 11	~~34~~ 28
New Primary Access Road[2]	27	66	24	58
Substation	<1	1	<1	1
Upgraded Access Road	8	20	7	18
Construction Staging Area	4	10	0	0
TOTAL (rounded to closest hectare/acre)	~~155~~ 153	~~382~~ 376	~~79~~ 76	~~193~~ 187

[1] Assumes 30-meter (100-foot) disturbance corridor along turbine strings except where steep terrain dictates the use of road switchbacks. Secondary roads along turbine strings are about 4 meters (12 feet) wide plus associated drainage ditches.

[2] Assumes area required for an approximately 5-meter (16-foot) primary road and associated drainage ditches.

Make the following modification to Section 1.4.2.1 - Turbines, first paragraph, second sentence:

Each turbine consists of three main components: 1) the rotor/generator assembly; 2) a ~~modified~~ tubular tower; and 3) a foundation supporting the entire turbine structure.

Replace Figure 1.7 and all references thereto with Figure F.2, which is included in Part 2 of this document.

Make the following modification to Section 1.4.2.1, Turbines - Towers, first paragraph, first sentence:

The Applicant proposes to use ~~modified~~ tubular steel towers as shown in Figure ~~1.7~~ F.2.

Make the following modification to Section 1.4.2.1, Turbines - Foundations, first paragraph:

Turbine foundations would be constructed in the 30-meter-wide (100-foot) corridor disturbed along each turbine string during Project development. Following construction, concrete foundations would occupy a cleared and graded area measuring approximately 6 meters by 6 meters (20 feet by 20 feet). Portions of ~~T~~the graded area would have a subgrade of compacted native soil and a gravel surface. Concrete foundations would consist of a slab measuring approximately 6 meters by 6 meters (20 feet by 20 feet) that would support the turbine tower. Concrete turbine foundations would be approximately 1.5 to 3 meters (5 to 10 feet) deep. ~~Concrete foundations would consist of: 1) three or four concrete pier foundations for the turbines, each measuring about 76 cm (30 inches) in~~

~~diameter; 2) a concrete slab foundation for certain electronic controls measuring approximately 1.25 by 2.5 meters (4 feet by 8 feet); and 3) a concrete slab foundation for the access ladder measuring approximately 0.6 meter by 1 meter (2 feet by 3 feet). Excavation of the pier foundations would be conducted using an auger or drill. Pier foundations would extend to sound bedrock.~~ The turbine towers would be secured by anchor bolts to the ~~pier~~ foundations.

Modify Section 1.4.2.3, Overhead Powerline, first paragraph last two sentences as follows:

The length of the powerline corridor would be approximately ~~24.6~~ 22.9 km (~~15.3~~ 14.2 miles). ~~From the substation south to Section 13, T3N, R16E (about 3.2 km or 2 miles), two 34.5 kV powerlines would run parallel along the same corridor.~~

Modify Section 1.4.5.1, Bird Protection, first paragraph, second bulleted item as follows:

- Reducing the ~~potential for turbine towers to attract birds~~ perching opportunities for raptors by using a ~~modified~~ tubular tower rather than a lattice tower structure. (Research indicates that lattice towers may be used by birds for perching.)

Delete the third bulleted item from Section 1.4.5.1, Mitigation Proposed By the Applicant - Bird Protection, as follows:

- ~~Reducing the potential for collision and electrocution by locating powerlines underground where they run along turbine strings.~~

Make the following correction to Section 1.4.5.1, Bird Protection, fourth bulleted item:

- Reducing the potential for electrocution and collision by designing the 34.5-kV powerline in accordance with ~~raptor protection measures~~ the most recent available *Suggested Practices for Raptor Protection on Powerline, APLIC* and *Mitigating Bird Collisions with Powerlines, APLIC*.

Add the following item to Section 1.4.5.1, Mitigation Proposed By the Applicant - Bird Protection:

- Avoiding the use of pesticides and rodenticides during construction and operation of the Project.

Modify Section 1.4.5.2, Mitigation Proposed By the Applicant - Safety Measures, final bulleted item as follows:

- Locating the overhead powerline at least 61 meters (200 feet) from the turbines so that cranes working on the turbines will be at a safe distance from the powerlines. Because of this safety measure, powerlines running along turbine strings would be routed underground.

Modify Figure 1.8 by including the new substation location.

Modify Figure 1.9-Subarea Development Alternative to include the proposed new substation location and associated adjustments to the powerline route.

Add the following discussion at the end of Section 1.5.4, No Action, following the sixth paragraph:

> In addition, these CO_2 and NO_x air emissions associated with gas-fired facilities may have adverse effects on wildlife and forest resources, which should be considered in the comparison.

Add the following discussion to Section 1.5.4, No Action, following the fifth paragraph:

> On a per-MW basis, the BPA Resource Program EIS, which is incorporated by reference, concludes that conservation (increased energy efficiency) in residential and commercial buildings, industry, and agriculture has the lowest environmental impacts of all the resources evaluated. The Resource Program EIS identifies concerns about the impacts of increased energy efficiency on residential and commercial indoor air quality but concludes that proper building techniques can help prevent any potential indoor air quality impacts. No other significant environmental impacts are identified for conservation programs.

Replace the third paragraph in Section 1.7, Timing of Possible Approval (Short-term Uses vs. Long-term Productivity/Irreversible/Irretrievable Commitments of Resources), with the following:

> Deferring approval would provide time for additional studies of avian use, but could result in cancellation of the Project due to the Applicant's contractual obligations to deliver power. This would eliminate an opportunity to demonstrate a commercial-scale windpower project in Washington and could ultimately lead to development of additional fossil fuel generating resources as discussed in Section 1.4 (No Action). In addition, cancellation of the Project would eliminate a source of income to the agricultural property owners with whom the Applicant has entered into easement agreements. Because of concerns about impacts to Priority Habitats and avian use, especially bald eagle and peregrine falcon, providing some additional time for careful routing of the Project powerline and for limited additional studies of avian use while allowing a portion of the Project to be immediately constructed (once all permits are obtained) may strike the appropriate balance between the Applicant's needs to meet its contractual obligations and resource agency concerns about protection of environmental resources.

Changes to Part 2 – Affected Environment, Environmental Consequences, and Mitigation Measures

Section 2.1 Earth

Modify Figure 2.1.2-Project Soils to include the proposed new substation location and associated adjustments to the powerline route.

Make the following modification to Section 2.1.4.1, Proposed Action - Environmental Impacts - Earthwork and Erosion, first paragraph, last two sentences:

Together, these activities are expected to disturb about ~~155~~ 153 hectares (~~382~~ 376 acres) during construction. Approximately ~~12~~ 42 percent of this disturbance would occur on silt-loam soils; about 23 percent would occur on cobbly silts and loamy sands; about 33 percent would occur on unclassified soils; and about two percent would occur on steep, rocky outcrops.

Insert the following discussion following the second paragraph of Section 2.1.4.1, Environmental Impacts - Earthwork and Erosion:

There are currently 32 rock pits and sand and gravel pits that are permitted by the State Department of Natural Resources in Klickitat County. There are eight permitted sand and gravel pits in Klickitat County, excluding those operated by Klickitat County Public Works and Klickitat County Port District No. 1. The eight pits are located 3 to 40 miles from the Project site. Based on discussions with operators, it appears that there would be an adequate supply of gravel in the vicinity of the Project to meet the Project's demand for gravel.

Add the following to Section 2.1.4.2, Proposed Action - Mitigation, following the first bulleted item:

- Minimizing soil disturbance from grading to the maximum extent reasonably feasible given the need to maximize avoidance of Priority Habitats and archaeological sites.

Make the following modifications to Section 2.1.5.1, Alternative Powerline Route - Environmental Impacts, first paragraph, second sentence:

The alternative powerline route would result in disturbance of about 17 hectares (41 acres) compared to about ~~16~~ 15 hectares (~~39~~ 36 acres) for the route included in the Applicant's Proposed Action.

Make the following modifications to Section 2.1.8, No Action, third and fourth sentences:

However, impacts on earth resources associated with ongoing grazing and farming activities would continue as they also would under the Proposed Action and alternatives. These impacts would primarily include wind and water erosion associated with working soil for cultivation and with loss of vegetation on areas that have historically been heavily grazed.

Section 2.2 Water

Make the following correction to Section 2.2.3.1, second paragraph, fourth and fifth sentences:

Drainage to the ~~east~~ west of Bigby Road is generally to the Swale Creek basin. Drainage to the ~~west~~ east of Bigby Road is generally to the Rock Creek basin.

Add the following mitigation measure to Section 2.2.4.2, Proposed Action - Mitigation, following the second bulleted item:

- Provide slab foundations with berms to contain any leakage of hydraulic fluid, fuels, or other fluids to earth and water resources.

Make the following modifications to Section 2.2.5, Alternative Powerline Route, first sentence:

This alternative would disturb slightly more area (2 hectares, ~~4~~ 5 acres) than the Proposed Action and could create a slightly greater potential for erosion, but would generally have the same level and types of impacts on water resources.

Make the following modifications to Section 2.2.8, No Action, last sentence:

Impacts to water resources associated with ongoing farming and grazing activities, including sediment discharge associated with erosion caused by agricultural activities and any non-point source pollution resulting from livestock, would continue; these agriculture-related impacts would also continue under the Proposed Action and alternatives.

Section 2.3 Plants

Replace Figure 2.3.1 with Figure F.4 included in this document.

Make the following modifications to Section 2.3.4.1, Proposed Action - Environmental Impacts - Habitat/ Plant Community Impacts, first paragraph:

Approximately ~~148 hectares (365 acres)~~ 153 hectares (376 acres) of vegetation would be removed or disturbed during Project construction. Approximately 73 percent of this disturbance would occur within cultivated land or degraded rangeland. The remaining disturbance would affect about 9 hectares ~~(22 acres)~~ (21 acres) of Oregon white oak and oak/pine, and about 22 hectares (54 acres) of shrub-steppe habitat including areas containing native plant communities meeting Washington Natural Heritage Plan criteria for high quality (see Table 2.3.5).

Impacts to the western habitat complex would include:

- Disturbance of about 9 hectares ~~(21 acres)~~ (20 acres) of shrub-steppe habitat including:
  - 2 hectares (4 acres) of high-quality Douglas' buckwheat/ Sandberg's bluegrass
  - 5 hectares (12 acres) of high-quality bluebunch wheatgrass-Idaho fescue
- Disturbance of about 2 hectares (~~5~~ 4 acres) of Oregon white oak habitat.
- Further fragmentation of the large habitat block, resulting in an increased potential for invasion by noxious weeds.

Replace Table 2.3.5 with the following:

TABLE 2.3.5
Direct Habitat Impacts

Turbine String	Estimated Maximum # of Turbines[5]	Area Disturbed During Construction (Acres)[4]						
		Range	Cultivated	Oak/Oak-Pine	Juniper	Shrub-Steppe		Riparian
						Bunchgrass[1]	Buckwheat[2]	
A	~~13~~ 46	4	0	0	0	0	1	0
B	~~46~~ 26	30	0	0	0	0	4	0
C	~~26~~ 10	13	0	0	0	3	3	0
D	~~10~~ 11	6	0	0	0	0	0	0
E	11	5	0	0	0	0	0	0
F	~~23~~ 33	19	0	0	0	0	2	0
G	~~33~~ 8	12	0	0	0	0	0	0
H	~~8~~ 6	3	0	0	0	0	0	0
I	~~6~~ 10	2	0	0	0	0	0	0
J	10	3	0	0	0	0	0	0
K	~~12~~ 12	5	0	0	0	0	0	0
L	~~12~~ 13	6	0	0	0	0	0	0
M	~~13~~ 13	2	0	0	0	2	2	0
PP	~~13~~ 13	1	0	0	0	5	0	0
N	13	0	0	5.5	0	0	0	0
O	~~19~~ 9	5	0	0	0	0	1	0
P	~~9~~ 19	<1	0	0	1	2	0	0
Q	~~19~~ 8	3	2	0	0	3	0	0
R	~~8~~ 5	1	0	0	0	0	1	0
S	5	0	0	0	0	<1	1	0
T	~~5~~ 5	0	1	0	0	0	1	0
U	~~5~~ 5	0	0	0	0	<1	1	0
V	~~5~~ 9	1	0	0	0	1	0	0
W	~~9~~ 23	3	0	0	0	0	0	0
X	23	10	0	0	7	0	0	0
Y	~~7~~ 11	0	0	3.2	0	0	0	0
Z	~~11~~ 4	4	0	<1	0	0	0	0
AA	~~4~~ 7	1	0	0	0	0	0	0
BB	~~7~~ 11	5	1	0	0	0	0	0
CC	11	3	3	0	0	0	0	0
DD	~~8~~ 6	3	2	0	0	0	0	0
EE	~~6~~ 7	2	0	0	0	0	0	0
FF	~~7~~ 7	5	0	0	0	0	0	0
GG	~~7~~ 9	2	0	0	0	0	0	0
HH	9	5	0	0	0	0	0	0
KK	~~7~~ 9	2	0	0	0	0	2	0
LL	~~9~~ 14	3	0	0	0	<1	0	0
NN	~~14~~ 18	8	0	0	0	0	0	0
OO	18	3	3	0	0	0	0	0
Subtotal Turbine Strings		181	12	10	8	19	19	0
Roads		43	4	6	4	4	7	0
Powerline		~~18~~ 19	~~8~~ 6	~~6~~ 5	<1	4	<1	0
TOTAL[3]		~~242~~ 243 (98 hectares)	~~24~~ 22 (~~10~~ 9 hectares)	~~22~~ 21 (9 hectares)	13 (5 hectares)	27 (11 hectares)	27 (11 hectares)	0

1 High- and moderate-quality bunchgrass communities. See Table 2.3.4.

2 High- and moderate-quality buckwheat communities. See Table 2.3.4.

3 An additional 10 acres would be disturbed by construction staging areas that have not yet been located by the Applicant.

4 Assumes 100-foot disturbance along turbine strings plus additional disturbance where switchbacks are required; 45-foot disturbance along primary access roads; and 20-foot disturbance along overhead powerline corridors.

5 Although a total of about 345 turbines would be required to achieve the 115-MW rated capacity proposed by the Applicant, the exact number of turbines in each string will not be determined until final design. The indicated maximum in each string provides a "worse case" since all turbine strings would not be developed with the maximum number of turbines.

Add the following mitigation measure at Section 2.3.4.2, Proposed Action - Mitigation Measures, following the seventh bulleted item:

- To the extent that Oregon White Oak and Douglas' buckwheat/Sandberg's bluegrass areas cannot be avoided, replace lost habitat through on-site or off-site enhancement and preservation of similar habitat (quantity and quality) in consultation with WDFW.

Add the following requirement for the reseeding/restoration/weed management plan called for under Section 2.3.4.2, Mitigation Measures:

- Measures for addressing requests of the Klickitat County weed coordinator.

Make the following modifications to Section 2.3.5.1, Alternative Powerline Route - Environmental Impacts, first paragraph:

The alternative powerline route would disturb about 17 hectares (41 acres) of vegetation compared to about ~~16 hectares (39 acres)~~ 15 hectares (36 acres) of vegetation disturbed by the powerline route included in the Proposed Action. The alternative powerline would reduce the amount of oak habitat disturbed by the Project by about ~~13~~ 10 percent (about ~~1.2~~ 1.6 hectares or ~~3~~ 4 acres) and potentially ~~avoid~~ reduce potential impacts to nesting gray squirrels (see Section 2.4). The alternative powerline route would also reduce the amount of shrub-steppe habitat disturbed by the Project by about 10 percent (about 2 hectares or 5 acres). Most of the shrub-steppe habit that would be avoided consists of high-quality bluebunch wheatgrass-Idaho fescue communities.

Replace Table 2.3.8 with the following:

TABLE 2.3.8
Direct Habitat Impacts Subarea Development Alternatives
(Phase 1 Construction)

	Habitat Disturbed Hectares (Acres)							
	Total	Rangeland	Cultivated	Oak	Juniper	Shrub-Steppe		Riparian
						Bunchgrass	Buckwheat	
Option 1	~~66 (164)~~ 67 (166)	~~53 (131)~~ 54 (132)	~~<1 (2)~~ 2 (4)	2 ~~(5)~~ (4)	0 (0)	5 (13)	5 (13)	0 (0)
Option 2	~~77 (191)~~ 78 (193)	~~44 (109)~~ 45 (110)	~~9 (22)~~ 8 (20)	8 (19)	5 (13)	~~6 (14)~~ 7 (17)	6 (14)	0 (0)

Make the following changes to Section 2.3.8 No Action, first paragraph, last sentence:

Ongoing grazing and cultivation, which would also occur under the Proposed Action and alternatives, could, however, result in continued displacement of native shrub-steppe, oak, and juniper habitats on the site.

Section 2.4 Wildlife (Non-Avian)

Make the following modifications to Section 2.4.4.1, Proposed Action - Impacts - Habitat Loss, first paragraph:

As discussed in Section 2.3.4.1, about ~~148 hectares (365 acres)~~ 153 hectares (376 acres) of vegetation would be disturbed during construction. About ~~79 hectares (193 acres)~~ 76 hectares (187 acres) would be permanently occupied by Project features. This represents about 1.5 percent of the total site area. About ~~14 hectares (34 acres)~~ 11 hectares (28 acres) would be occupied by the powerline, which would continue to provide some wildlife habitat.

Make the following modifications to Section 2.4.4.1, Proposed Action - Impacts - Habitat Loss, third paragraph, first ~~and second~~ sentences:

Disturbance of Priority Habitats would include about ~~9 hectares (22 acres)~~ 9 hectares (21 acres) of oak and oak/pine woodland, 5 hectares (13 acres) of scattered juniper, and 22 hectares (54 acres) of shrub-steppe habitat.

Add the following into Section 2.4.4.2, Proposed Action - Impacts - Habitat Loss, following the third paragraph:

The loss of these habitats would represent a corresponding loss in breeding habitat for several associated species, including western bluebird, Merriam's turkey, juniper hairstreak, and western gray squirrel, among others.

Add the following discussion to Section 2.4.4.1, Proposed Action - Impacts - Common Species, following the last paragraph:

In addition, slab foundations may attract rodents and other small animals that are prone to burrow under such structures. While turbine slab foundations typically would range in depth from 1.5 to 3 meters (5 to 10 feet), where burrowing would typically not be a problem, other foundation structures may present burrowing opportunities. The attraction of these animals to turbine areas could increase avian prey base in the vicinity of the turbines.

Make the following modifications to Section 2.4.4.1, Proposed Action - Impacts - Special Status Species, first paragraph, first sentence:

The projected loss of less than ~~9 hectares (22 acres)~~ 9 hectares (21 acres) of oak and oak/pine woodlands, would potentially reduce local on-site populations of western gray squirrel, which is a state-threatened species.

Made the following modifications to Section 2.4.4.2, Proposed Action - Mitigation, second and third bulleted items:

- To the extent existing in the environment, r~~R~~etain at least 50 percent canopy cover in oak woodlands within a 120-meter (400-foot) radius of known nest trees. To the

extent these species are available, retain conifers (pine) for 25 percent of the remaining canopy cover.

- Avoid general construction activity within 122 meters (400 feet) of any known western gray squirrel nest between May 15 and September 30, and avoid blasting or activities with similar noise levels within 396 meters (1,300 feet) between May 15 and September 30.

Add the following mitigation measures to Section 2.4.4.2, Proposed Action - Mitigation Measures:

- Provide reasonable and feasible design measures, to be approved by the Klickitat County Department of Public Services, to prevent small mammals from burrowing under foundations that extend less than 2 feet in depth below the ground surface.

Make the following modifications to Section 2.4.5.1, Alternative Powerline Route - Environmental Impacts, first sentence:

The alternative powerline route would reduce the amount of oak and oak/pine habitat disturbed by about ~~1.2 hectares (3 acres)~~ 1.6 hectares (4 acres) and would largely avoid the two relatively large blocks of this habitat located in the western and central areas of the site.

Make the following modifications to Section 2.4.7.1, Subarea Development Alternative - Environmental Impacts, first paragraph, third and fourth sentences:

Both options would reduce Phase 1 impacts to Oregon white oak habitat, relative to the Proposed Action. Option 1 would result in a Phase 1 loss of ~~2 hectares (5 acres)~~ 2 hectares (5 acres) of this habitat type; Option 2 would result in a loss of 8 hectares (19 acres).

Section 2.5 Birds

Add the following the Section 2.5.2, Regulations, Standards, and Guidelines, following the second paragraph:

These laws contain prohibitions on taking individuals of protected species that were primarily designed to penalize active, intentional conduct such as unpermitted hunting or commercial use. There have been conflicting court decisions about whether and in what circumstances these prohibitions apply to unintentional conduct such as the construction or maintenance of facilities with which birds or other protected species might collide or otherwise be harmed. USFWS issued an April 28, 1994 memorandum that focuses the inquiry in these circumstances on the windpower developer's efforts to reduce the impact on wildlife and to develop safer windpower technology, rather than viewing individual collisions as violations of the law. USFWS has not yet determined whether particular avian mortality permits will be required for windplant installation, insofar as it will not consider takings violations to occur where the operator is exercising such appropriate care.

Whether or not a permit for limited taking of protected species is issued, the USFWS may direct that the windplant be constructed and operated to meet certain stipulations to reduce impacts to birds and other wildlife. Stipulations could include, but are not limited to, using state-of-the-art technology known to minimize wildlife impacts (e.g., using results of

research conducted by KENETECH's avian task force), locating facilities away from known avian concentration areas, and scheduling windplant operations to avoid disturbing avian wildlife during defined critical periods.

This EIS evaluates the full range of estimated avian mortalities and impacts (and those relating to other protected wildlife species) that might be covered by such permits or stipulations, if any.

Make the following modification to Section 2.5.3.1, Special Status Species - General, third paragraph, first sentence:

Osprey, long-billed curlew, loggerhead shrike, sandhill crane, northern goshawk, ferruginous hawk, and ash-throated flycatcher~~,~~ ~~and Lewis' woodpecker~~ were observed infrequently in the Project area.

Add the following paragraph into Section 2.5.3.1, Special Status Species, at the end of the section:

Lewis' Woodpecker (State Candidate)
Lewis' woodpecker is widely distributed throughout Washington. It is primarily associated with ponderosa pine and cottonwood riparian areas (Rodrick and Milner, 1992). The species was observed to be fairly common within and near oak and oak/pine woodlands on the Project site during the winter and was also observed flying in rangeland and other open areas.

Add the following paragraph into Section 2.5.4.1, Proposed Action - Environmental Impacts - Other Special Status Species, following the third paragraph:

While these woodpeckers do not exhibit behaviors suspected to be associated with avian mortality at wind power projects (i.e., diving for prey, foraging in flight), the Project could cause some incidental mortality to this species.

Make the following modification to Section 2.5.4.2, Proposed Action - Mitigation, first bulleted item:

- Avoid construction activities within 400 meters (1,300 feet) of bald eagle roosts during October through March unless buffer requirement is modified through the Section 7 consultation process with the USFWS. Any permanent buffer requirements should be established through the Section 7 process and in the Bald Eagle Management Plan for the Project.

Add the following mitigation measures at Section 2.5.4.2, Proposed Action - Mitigation Measures, following the second bulleted item:

- Avoid construction activities on the southern portion of turbine string NN during the breeding season for Swainson's hawk (April 1 to September 1).

- Avoid general construction activities within 488 meters (1,600 feet) of golden eagle nests from March 15 through July 15, and avoid blasting or other activities with similar noise levels within 1,300 feet between March 15 and July 15.

Section 2.6 Cultural Resources

Make the following modification to Section 2.6.1, Cultural Resources - Studies and Coordination, fourth paragraph, second sentence through end of paragraph:

> Although neither the Yakama Nation nor the Umatilla provided comments during EIS scoping or on the cultural resources study plan, Yakama tribal staff subsequently expressed concerns about Project impacts to ~~cultural~~ archaeological sites, traditional cultural properties, habitat, and native plants that have traditionally provided food and medicine, degradation of surface water quality, and impacts to fish habitat, aesthetic impacts, and noise and air pollution. The lead agencies have corresponded and held meetings with Yakama staff and members of the Yakama Tribal Council Culture Committee to discuss these concerns. In addition, the Yakama Cultural Resources Program has been conducting oral history interviews of tribal elders regarding traditional cultural use in the Columbia Hills area. Information ~~gained to date~~ from reviewing tapes of these oral history interviews is summarized in this EIS.

Make the following modification to Section 2.6.3, Affected Environment - Ethnography, first paragraph, first and third sentences:

> Ethnographic bands that included the Columbia Hills within their territory ~~and that spoke the Sahaptin language~~ may have included Skin, Wayampam, and Umatilla groups. These groups generally shared the same culture. In the vicinity of the Project site, villages were located along the Columbia River just west of Wishram, at Wishram, and at the mouth of Rock Creek, near where a longhouse group is located today.

Make the following modification to Section 2.6.3, Affected Environment - Archaeological and Historical Resources, last sentence of the first paragraph:

> Project features that have not been precisely located by the Applicant, or that might be shifted based on the results of the overall environmental review for the Project were not surveyed; surveying these areas is identified as mitigation in Section 2.6.4.2.

Add the following paragraph to Section 2.6.3, Affected Environment - Archaeological and Historical Resources, following the second paragraph:

> A Yakama staff archaeologist has stated that he believes the entire Columbia Hills area is eligible for listing in the National Register as an Historic District based on the archaeological sites that occur in the Project Area and its traditional cultural use by the Yakama (Lothson, 1995). Consultation with the State Archaeologist indicates that a Multiple Property Listing determination may be appropriate to recognize the potential National Register eligibility of the National Register-eligible archaeological sites and traditional cultural properties in the Project vicinity. The cultural resources inventory for the Project cannot provide sufficient information to determine if the entire Columbia Hills area is eligible as an Historic District because the Project does not encompass the entire Columbia Hills area. A Multiple Property Listing determination can recognize sites that represent a series of types, but it does not require exact boundaries as does an Historic

District. In addition, a Multiple Project Listing determination allows the later recognition of additional site types and specific sites.

Modify the discussion of Traditional Cultural Properties in Section 2.6.3 as follows:

Traditional Cultural Properties

Traditional cultural properties, including cultural landscapes, may be listed in the National Register if they have defined boundaries and meet other requirements for listing. Klickitat County and BPA contacted both the Yakama Indian Nation and the Confederated Tribes of the Umatilla Indian Reservation during Project scoping but received no scoping comments. Klickitat County and BPA have also sought oral history information from the Yakama Indian Nation that might indicate if any National Register-eligible traditional cultural properties are present in the Columbia Hills area. (Such information includes site location, type of use, and its cultural importance.) ~~As of January 11, 1995,~~ Yakama staff ~~had~~ conducted and taped oral history interviews with ~~five~~ nine elders who have ties to and knowledge of the Columbia Hills area. Some concerns about the oral history data should be noted. Yakama staff did not include the lead agency's cultural resource specialist in the design or implementation of the oral history interviews, precluding any participation in the framing of interview questions as well as any requests for clarification of the elders' statements. In addition, most of the interviews were conducted in the Native language with brief summaries of questions and statements in English. The interviewer appeared to ask leading questions and sometimes prompt answers based on his knowledge of the area. It is difficult to determine the accuracy of information that was given to interviewees. Yakama staff do not know when translations of the taped information will be available, although they have stated that they will produce a report on their study by June 30, 1995. Thus, the protocol for collecting the data from which the following information is derived accords with Yakama cultural practice rather than with anthropological methods.

Information on the Columbia Hills area available from consultation with the Yakama Indian Nation ~~to date~~ and ~~on~~ from review of oral history tapes indicates the area's ethnographic uses included plant gathering, ~~and~~ hunting, travel, ~~and~~ camping, and vision questing. The Columbia Hills landform appears to hold cultural heritage importance to those Yakama people who trace their ancestry to the vicinity. Elders stated that the ridge connects the area of the Rock Creek longhouse on the east to the Lyle area on the west. Along the ridge are such legend-associated features as Juniper and Skinpum Points (Juniper Point is located on the CARES Project site; Skinpum Point is located ~~east~~ west of US-97 [see Figure 2.6-1]). In Luna Gulch, north of Hoctor Road, is a rock that represents a woman who was turned to stone in the legend time. A cinder cone that the Yakama elders call "Tick" or "Hoolie-Eye" lies to the north of the Columbia Hills. In the legendary flood, animals and people sheltered high on the ridge, ~~particularly at~~ including Juniper Point and Skinpum Point, and elders say they have seen the remains of logs that washed up on the high slopes of the ridge. The height of the ridge gives it a spiritual quality. Eagles frequent the ridge, and eagle feathers figure into Yakama religious ceremonies. Spirit quests took place along the ridge, where songs for ceremonial use came to people. Springs that issue from the sides of the ridge remind the elders of stars in the sky. The Yakama have gathered traditional subsistence and medicinal plants at places along the ridge, and unmarked burials may occur there. Elders have stated that they believe spirits still reside in the Columbia Hills area. In addition, the Rock Creek Canyon, located east of the Columbia Hills, has religious

value for the Yakama. The original Rock Creek Village site is considered sacred by the Yakama because it was associated with an Indian prophet. The longhouse at Rock Creek is currently used for religious practices.

Yakama Nation members have stated that its Dreamer Prophets received guidance from spirits in the Columbia Basin through dreams and revelations regarding how their religion should be practiced. Individuals used Juniper Point as one of their sites for "vision questing" because of its views of all four directions. Vision questing involves extended presence in a traditional cultural area such as Juniper Point where spirits may contact an individual seeking guidance through dreams or revelations.

It is unclear from the elders' statements whether some of the qualities they mentioned apply to the entire Columbia Hills or are limited to specific places. Based on information gathered to date, Juniper Point ~~might~~ appears to qualify for listing in the National Register of Historic Places as a traditional cultural property for its value as a legend site and a place where the Yakama dug roots, collected juniper for medicinal uses, and conducted spirit quests. Juniper Point would form part of a National Register-eligible Multiple Property Listing as an example of one type of traditional cultural property. Juniper Point is the only specific location in the immediate vicinity of the KENETECH Project that has been specifically and consistently identified by the Yakama elders interviewed. The information reviewed to date does not suggest a distinctly bounded traditional cultural landscape that would include the Project site and that would be eligible for listing in the National Register. The Yakama, however, likely consider all of the aboriginal territory as a traditional cultural landscape.

Make the following modification to Section 2.6.3, Affected Environment - Ethnobotany, last sentence of the first paragraph:

Owners of property in the Project Area were interviewed and stated that they do not have arrangements or agreements with Native American individuals or groups to allow access to private lands for gathering, and have not observed root digging on their lands in recent years.

Make the following modification to Section 2.6.3, Affected Environment - Views of Yakama Elders about the Project Area, first paragraph, last two sentences:

They feel that the Project ~~would not help this situation~~ could further restrict their access to the area. The elders do not like the way the area is being used today, believing livestock grazing and other uses destroy the natural environment.

Make the following modification to Section 2.6.4.1, Proposed Action - Impacts - Traditional Cultural Properties, first paragraph:

Traditional Cultural Properties

As discussed in Section 2.6.3, Juniper Point, located south of the Project site, ~~might~~ appears to be eligible for listing as a traditional cultural property. Consultation with the Yakama Indian Nation is ongoing, and there is some potential that the occurrence of other traditional cultural properties could be revealed through this ongoing consultation process

with the Yakama Indian Nation. Some of the closer KENETECH wind turbine strings would be visible from Juniper Point. Specifically, turbine string M would be located roughly 1 km (0.6 miles) to the west/northwest of the top of Juniper Point. Turbine string K would be located about 1.6 km (1 mile) to the southwest of the top of Juniper Point. The remainder of turbine strings in the western portion of the KENETECH site would be located about 2.4 to 4.8 km (1.5 to 3 miles) from the top of Juniper Point. The closest turbine string to the northeast would be located more than 3.2 km (2 miles) away. ~~Consultation is ongoing with the Yakama Nation to assist in determining whether the turbine strings would adversely affect the traditional cultural qualities of Juniper Point if it proves to be eligible for the National Register, and if so what measures might be taken to avoid, minimize, or mitigate impacts.~~ Juniper Point's character-defining features as a traditional cultural property include use as a vision-questing site, where seeing views in all directions and receiving messages from the spirits were important. In addition, the elders' have stated their opposition to the Project. Construction and operation of the proposed Washington Windplant #1 would not result in changes to Juniper Point but would alter views from the point, primarily to the southwest and northeast since turbines would be visible in the distance in those areas. Thus, although the Yakama do not currently have access to Juniper Point and although industrial/utility development currently exists on the point and to the south along the Columbia River, the proposed Project would indirectly impact the traditional cultural value of Juniper Point to the Yakama by altering its potential suitability as a vision-questing site.

Make the following modification to Section 2.6.4.1, Impacts - Ethnobotany:

Development of the Project, as proposed by the Applicant, would result in temporary disruption of plants and habitat during construction and a reduction of acreage of plants and habitat as discussed in Section 2.3. Shrub-steppe, juniper, and oak-pine habitats (see Section 2.3), contain plant species and varieties that have traditionally been used by Native Americans. Consultation with the Yakama Indian Nation revealed their claims to these resources as part of their Treaty of 1855 "reserved rights" despite the fact that the Project lands are in private ownership and the rulings of courts that privately-owned lands are not "open and unclaimed lands" within the meaning of the Treaty of 1855. It is difficult to evaluate these claims because of cultural diversity. Many claims have foundations in long-standing opposition to any use of ceded lands for purposes inconsistent with traditional cultural uses of hunting, gathering and spiritual life. Current grazing and agricultural uses have also been resisted by Native American interests. ~~However, a~~Access to site properties, which are all privately owned, is not currently provided to Native Americans by the present property owners, and Project development would not alter the status of access agreements. ~~Therefore,~~ Based on this, the Project is not expected to change the current availability of plant resources to Native American groups.

Add the following discussion at the end of Section 2.6.4.1, Proposed Action - Impacts, after the paragraph on Ethnobotany:

Treaty Reserved Rights

The Yakama Nation claims a continued right to use of the resources of the Project site under the "Reserved Rights" doctrine, including the continuation of off-reservation hunting, fishing, gathering of roots and berries, and the pasturing of horses and cattle upon open

and unclaimed lands. The courts have stated that land in private ownership, particularly where it is obvious to a reasonable person that the land is privately owned, is not "open and unclaimed" land for which the Yakama can exercise their reserved hunting and gathering rights.

Under the Yakama Nation view that it did not grant rights to all the resources on the ceded lands in the Columbia Hills in the treaty of 1855, the Proposal and all alternatives, except the No Action Alternative, would involve additional uses of the Project site which are incompatible with traditional uses and reserved rights for hunting and gathering, which is regarded by Yakama Nation elders as a significant impact. Under the No Action Alternative, current grazing and other agricultural uses, and the posting of "no trespassing" signs by landowners, has a similar impact on traditional uses and reserved rights for hunting and gathering, but would not involve the proposed action's additional incompatible uses. Under the Proposed Action and all alternatives, denial of access to Native Americans could continue as a privilege of property ownership by non-Indians.

Make the following modification to Section 2.6.4.2, Proposed Action - Mitigation, first paragraph, first paragraph:

Mitigation measures for National Register-eligible cultural properties include avoidance of impacts, minimization of impacts, and scientific data recovery for archaeological properties eligible under Criterion D. Avoidance is generally the preferred mitigation strategy for archaeological ~~cultural~~ properties that are fragile and cannot be replaced. For archaeological deposits, avoidance is preferred over scientific data recovery because it is impractical t recover all possible data from such sites. No direct mitigation measures for adverse Project effects on the Juniper Point Traditional Cultural Property appear feasible or acceptable to the Yakama Nation.

Add the following mitigation measures to Section 2.6.4.2, Proposed Action - Mitigation, following the last bulleted item:

- Allow for and support a tribal environmental monitor, appointed by the Yakama Indian Nation, to ensure that flagged archaeological sites are avoided during construction.

- In the event the Yakama Indian Nation's Culture Program reverses its decision to refuse to negotiate an agreement with BPA and Klickitat County regarding mitigation for impacts to traditional Cultural Properties, continue consultation to identify any reasonable and feasible measures that are acceptable to the Yakama Indian Nation to mitigate adverse effects on Juniper Point as a traditional cultural property.

Make the following modification to Section 2.6.9, Cultural Resources - Significant Unavoidable Adverse Impacts:

~~With the possible exception of a potentially eligible traditional cultural property at Juniper Point,~~ Significant unavoidable adverse impacts on archaeological resources would not be expected to result from development of the Proposed Action or alternatives if the mitigation identified above (avoidance, further testing, and scientific data recovery) is implemented.

Indirect impacts on Juniper Point as a traditional cultural property would likely be considered significant by the Yakama Indian Nation.

Add the following to Section 2.7.4.1, Proposed Action - Impacts, Operation, at the end of the fifth paragraph:

It should also be noted that some turbines may be on shorter towers than the assumed 120-foot tower for the analysis of aesthetics and that the number of turbines in certain areas would be less than assumed (see revised Table 2.3.5 for the assumed maximum number of turbines per string).

Section 2.7 Aesthetics

Make the following modification to Section 2.7.8, No Action, last sentence:

Aesthetic impacts associated with ongoing farming and ranching activities and with existing communication and utility facilities in the Columbia Hills would continue under the No Action Alternative as they would under the Proposed Action and alternatives.

Section 2.8 Land Use

Make the following modification to Section 2.8.4.1, Proposed Action - Environmental Impacts - Land Use and Zoning, second paragraph, second and third sentences:

During construction approximately ~~148 hectares (365 acres)~~ 153 hectares (376 acres) of the site~~, excluding existing roads,~~ would be disturbed. Disturbed lands that are currently used directly for range or agriculture include about ~~97 hectares (240 acres) of range, 10 hectares (24 acres) of land currently under cultivation, and 22 hectares (54 acres) of shrub steppe habitat that may be intermittently used for grazing.~~ 98 hectares (243 acres) of range, 9 hectares (22 acres) of land currently under cultivation, and 22 hectares (54 acres) of shrub-steppe habitat that may be intermittently used for grazing.

Make the following modification to Section 2.8.4.1, Proposed Action - Environmental Impacts -Land Use and Zoning, third paragraph, first sentence:

Following construction, permanent Project features (excluding existing access roads) would occupy about ~~71 hectares (176 acres)~~ 69 hectares (169 acres) or about 1.5 percent of the site.

Make the following modification to the final sentence of Section 2.8.4.2, Proposed Action - Mitigation Measures as follows:

~~In addition, requiring landscaping and fencing around the Project substation to screen it from view would reduce impacts from development of the substation.~~ Although site lighting has not been proposed, any future modification to include limited site lighting must conform to the Klickitat County illumination ordinance. Turbine structures are not proposed to heights that would require lighting by the FAA.

Section 2.11 Transportation

Make the following modification to Section 2.11.4.2, Proposed Action - Mitigation Measures, third bulleted item:

- To the extent economically feasible, sSchedule Project construction activities to avoid use of Hoctor Road during likely periods of freeze/thaw cycles and comply with temporary County weight restrictions when in effect.

Section 2.12 Public Services and Utilities

Make the following modification to Table 2.12.1, Communication Systems Near the Washington Windplant #1 Site:

TABLE 2.12.1
Communication Systems Near the Washington Windplant #1 Site

Owner/Operator	Type	Location	Description/ Direction
Klickitat County Rural Fire District # 7	Microwave Repeater	Juniper Point	UHF, 2.3 GHz to Goldendale omnidirectional
Klickitat Valley Hospital	2 Radio Repeaters	Juniper Point	UHF repeater, VHF transmission, omnidirectional
Mid Columbia Medical Center	Radio Repeater	Juniper Point	VHF, 75 Mhz, omnidirectional
Klickitat County Sheriff's Department	2 Radio Repeaters	Juniper Point	VHF, omnidirectional and UHF, link to Goldendale
Klickitat County Roads Division	Radio Repeater	Juniper Point	VHF, omnidirectional
Klickitat County Public Utility District	Microwave Repeater and Radio Repeater	Juniper Point	VHA and microwave to Goldendale, omnidirectional
Intertribe Fisheries Department	Radio Repeater	Juniper Point	VHF, omnidirectional
Wheeler Communication	2 Radio Repeaters	Juniper Point	UHF, omnidirectional
Immigration Department	2 Radio Repeater possibly	Juniper Point	VHF, omnidirectional
Department of Natural Resources	2 Radio Repeaters, possibly	Juniper Point	VHF, omnidirectional
Army Corps of Engineers	Radio Repeaters	Juniper Point	VHF, omnidirectional
Columbia Aluminum	Radio Repeater	Juniper Point	UHF, omnidirectional
Not Known	Ham Repeater	Juniper Point	140 MHz
BATS Towing	2 Radio Repeaters	Juniper Point	VHF link to Biggs and UHF base to Pasco
Don Coats	Radio Repeater	Juniper Point	UHF, omnidirectional
Columbia Basin Cable	Microwave Repeater	Observatory Hill	To Goldendale
Cellular One	2 Microwave Repeaters	Luna Point and Haystack Butte	To Roosevelt and to Goldendale and between Luna Point and Haystack Butte
Valley Communication	Radio Repeater	Haystack Butte	To Goldendale
KLCK Radio	Microwave Repeater	Haystack Butte	To Goldendale
KMCQ Radio	2 Microwave Repeaters	Haystack Butte and Stacker Butte	To Goldendale
KYYT Radio	Microwave Repeater	Haystack Butte	To Goldendale

Make the following modification to Table 2.12.2:

TABLE 2.12.2
Potentially Affected Communication Systems

Owner/Operator	Location	Turbine Strings Potentially Affecting Station
Klickitat County Rural Fire District #7	Juniper Point	M
Klickitat County Sheriff's Department	Juniper Point	M
Klickitat County Public Utility District	Juniper Point	M
BATS Towing	Juniper Point	G, I, K
Cellular One	Luna Point and Haystack Butte	Z, CC, DD, EE, NN, OO

Add the following paragraph to Section 2.12.3.1, Impacts - Communication System, following Table 2.12.2:

There are methods used to determine required clearances that are generally accepted by the communication industry. Based on known locations of turbine strings and transmitter locations, required clearances can be calculated. Standard methods consider both the tendency of microwave signals to bend downward as a result of atmospheric conditions and the increasing area required to transmit signal energy the further it is from other transmitters. Information from Cellular One indicates that required clearances where their signals cross turbine strings would likely be less than 100 feet.

Make the following modifications to Section 2.12.3.2, ninth bulleted item:

- Precisely determine the location and frequency of potentially impacted communications transmitter and receivers when siting individual turbines in turbine strings M, G, I, K, Z, CC, DD, EE, NN, and OO. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.

Changes to Part 3, Cumulative Impacts

Modify Section 3.2.1, Summary Project Descriptions - Washington Windplant #1, third paragraph, second bulleted item as follows:

- ~~24.6~~ 22.9 kilometers (~~15.3~~ 14.2 miles) of overhead 34.5-kV powerline.

Modify Section 3.2.1, Summary Project Descriptions - Washington Windplant #1, fourth paragraph, last two sentences as follows:

Up to ~~155 hectares (382 acres)~~ 153 hectares (376 acres) or about three percent of the site would be disturbed during construction. Project features would permanently occupy about ~~79 hectares (193 acres)~~ 76 hectares (187 acres), or about 1.5 percent of the site.

Replace Table 3.1 with the following:

TABLE 3.1
Summary of Kenetech Project Features

Features	Area Temporarily Disturbed		Area Permanently Occupied	
	Hectares	Acres	Hectares	Acres
Turbine String and New Secondary Access Road[1]	98	243	33	82
Powerline	~~17~~ 15	~~42~~ 36	~~14~~ 11	~~34~~ 28
New Primary Access Road[2]	27	66	24	58
Substation	<1	1	<1	1
Upgraded Access Road	8	20	7	18
Construction Staging Area	4	10	0	0
TOTAL (rounded to closest hectare/acre)	~~155~~ 153	~~382~~ 376	~~79~~ 76	~~193~~ 187

1 Assumes 30-meter (100-foot) disturbance corridor along turbine strings except where steep terrain dictates the use of road switchbacks. Secondary roads along turbine strings are about 4 meters (12 feet) wide plus associated drainage ditches.

2 Assumes area required for an approximately 5-meter (16-foot) primary road and associated drainage ditches.

Modify Figure 3.1 to show the modified substation location and associated powerline changes.

Modify Section 3.3.1, Earth, fourth paragraph second to last sentence as follows:

Together, these Projects would disturb approximately ~~187 hectares (466 acres)~~ 185 hectares (460 acres) of soil.

Replace Table 3.3 with the following:

TABLE 3.3
Cumulative Soil Disturbances

Soil Type	KENETECH		CARES		Cumulative[1]	
	Hectares	Acres	Hectares	Acres	Hectares	Acres
Silt Loam (slope >15%)	37	92	2	6	39	98
Silt Loam (slope <15%)[1]	~~28~~ 27	~~69~~ 66	14	34	~~38~~ 37	~~94~~ 91
Cobbly Silt Loam, Loamy Sand	~~36~~ 35	~~88~~ 86	15	39	~~50~~ 49	~~125~~ 123
Rock Outcrop	3	8	6	15	9	23
Non-Classified, Unmapped[1]	~~51~~ 50	~~126~~ 124	0.4	1	51	~~126~~ 125
TOTAL	~~155~~ 153	~~382~~ 376	38	95	~~187~~ 185	~~466~~ 460

1 The existing access road at the Hoctor Road and Miller Road intersection will be upgraded for access to CARES site and would be upgraded to access KENETECH turbine string M. Therefore, the cumulative impact is not strictly additive.

Modify Section 3.3.3, Plants, fourth paragraph, second sentence as follows:

Direct impacts from construction of both projects would include disturbance of about six percent of overall existing vegetation in this complex, including ~~3 hectares (6 acres)~~ of oak/oak pine, and 40 acres of shrub-steppe.

Replace Table 3.4 with the following:

TABLE 3.4
Direct Impacts to Western Habitat Complex

	KENETECH		CARES		Total	
	Hectares	Acres	Hectares	Acres	Hectares	Acres
Buckwheat[1]	~~3~~ 2	~~8~~ 4	17	43	~~20~~ 19	~~51~~ 47
Bunchgrass[1]	5	~~13~~ 12	15	37	20	~~50~~ 49
Oak/Oak Pine	2	~~5~~ 4	<1	<1	3	~~6~~ 5
Totals	~~10~~ 9	~~26~~ 20	33	81	~~43~~ 42	~~107~~ 101

[1] Shrub-steppe habitats.

Replace Figure 3.2 with Figure F.5, included in this document.

Modify Section 3.3.6, Cultural Resources, first paragraph, first three sentences as follows:

Background research and cultural resources fieldwork identified a total of 144 ~~cultural resource~~ archaeological properties on the KENETECH and CARES project sites. Twenty-tow of the properties are sites, while the remaining properties are isolates or cairns. Nineteen of the ~~cultural~~ archaeological sites on the KENETECH Project site and eight of the ~~cultural~~ archaeological sites on the CARES Project site are eligible or potentially eligible for the National Register of Historic Places under Criterion D because they may be likely to yield information important to history or prehistory.

Modify Section 3.3.6, Cultural Resources, second paragraph as follows:

In addition, review of oral history information prepared ~~to date~~ by the Yakama Indian Nation indicates that Juniper Point, on the CARES site, might qualify for listing as a traditional cultural property due to its importance to the Yakama for plant gathering, wildlife, and vision questing. ~~Ongoing consultation will attempt to achieve an agreement with the Yakama Indian Nation and State Historic Preservation Office regarding the eligibility of Juniper Point for listing on the National Register of Historic Places, impacts from construction and operation of the CARES and KENETECH Projects, and measures to avoid or minimize such impacts.~~ The CARES Project would directly impact Juniper Point as a traditional cultural property by placing wind turbines on the site. The KENETECH Project would indirectly impact Juniper Point as a traditional cultural property because wind turbines would be visible from the point, which would affect its potential suitability, in the view of the Yakama, for vision quests. In addition, the Yakama have stated that they believe alterations to wind patterns would disturb spirits and the ecological balance upon which plants depend. It should be noted, however, that the Yakama do not now have access to Juniper Point. Consultation to date has revealed no other potentially eligible traditional cultural properties on the Project sites. However, landforms in the Columbia Hills form part of the tribal landscape with importance to Yakama Indians, and past traditional use by Native Americans indicates that burial sites may be located in this area. Cairns could potentially be burial markers.

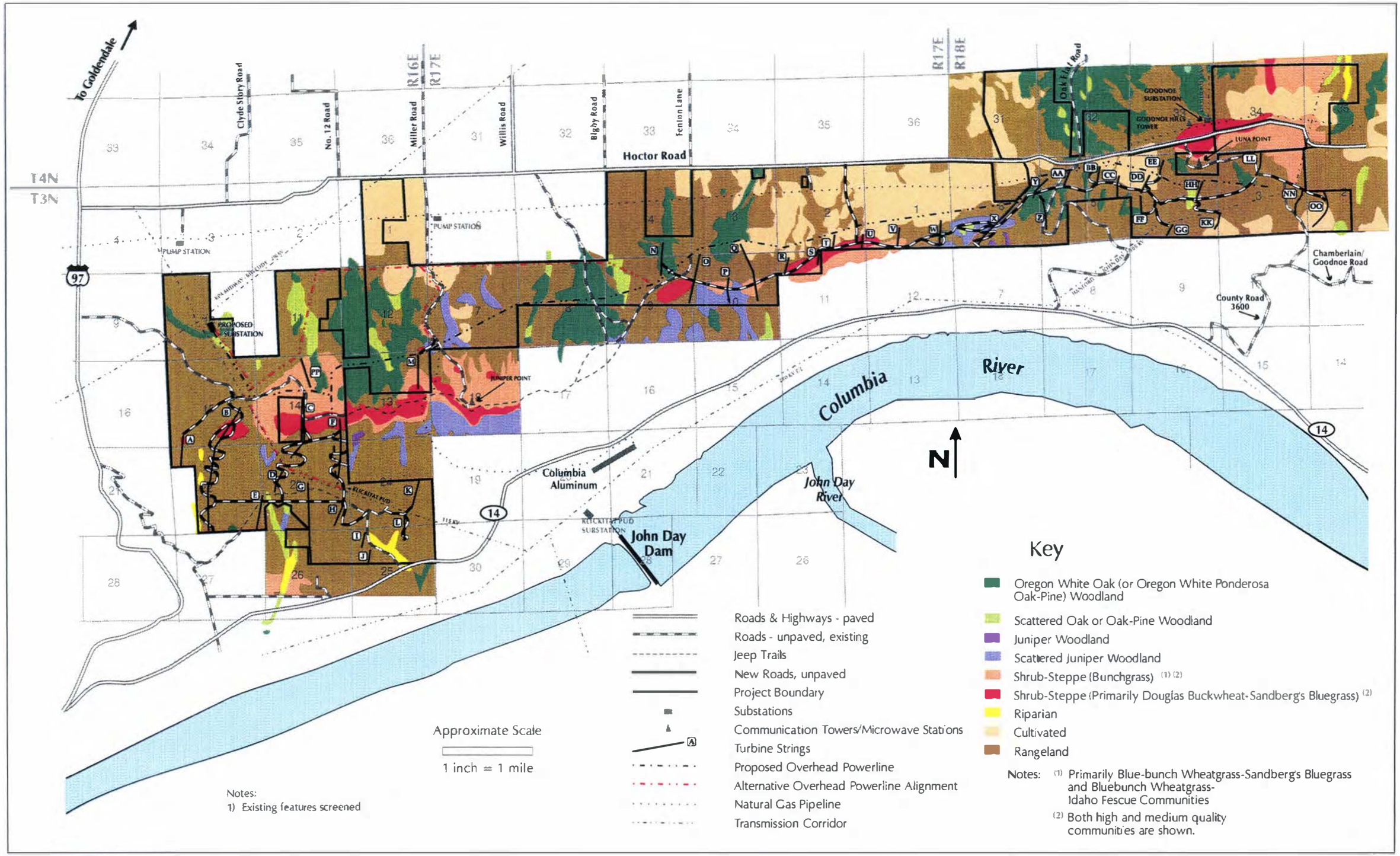


Figure F.4 — Plant Communities/Habitat Map

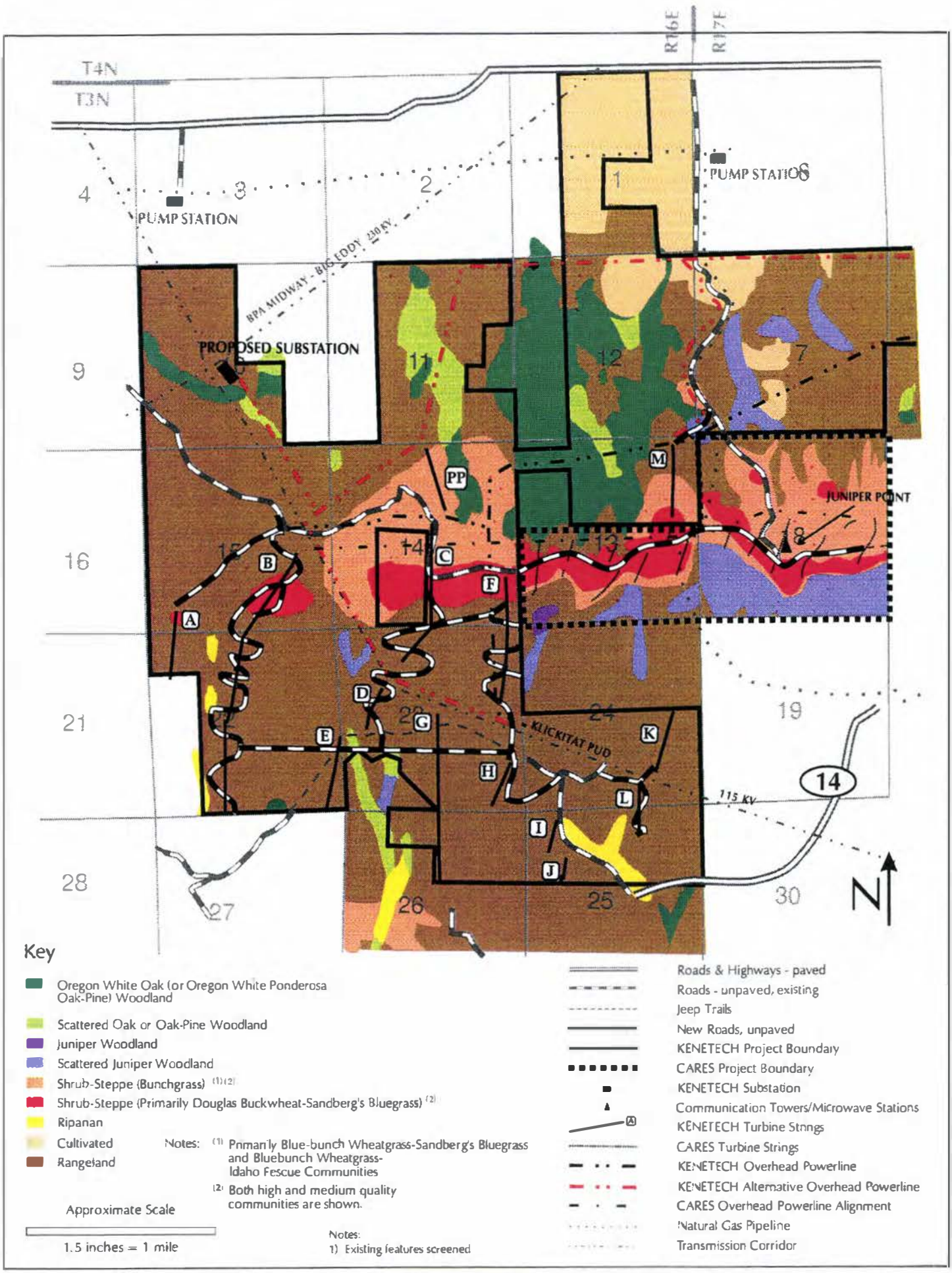


Figure F.5 — Cumulative Impacts to Western Habitat Complex

PART 4: COMMENTS AND RESPONSE

Part 4 – Comments and Responses

4.1 Introduction

This part of the Final EIS includes written comments received on the draft EIS, oral testimony made at the April 5, 1995 hearing on the draft EIS, and the lead agencies' responses to those comments. This part is organized in four parts: 1) general responses; 2) written comments and specific responses; and 3) the testimony transcript and specific responses to that testimony. General responses address issues that were raised by several commentors. In some cases, responses to specific comments cross-reference the general responses.

4.2 General Responses

4.2.1 General Response No. 1 – "Fast Tracking"

Some commentors asserted or suggested that approvals (Conditional Use Permit from Klickitat County and Transmission Services Agreement from BPA) for the proposed Washington Windplant No. 1 are on a "fast track." In some cases, commentors linked this statement with a call for additional avian monitoring or with a regional study and development of siting standards; in other cases, commentors did not provide specific reasons for their statements that the approvals for this Project were on a "fast track."

The lead agencies have been evaluating the environmental effects of the Applicant's Proposed Action for over 18 months, beginning with initial environmental reconnaissance through over a year's worth of detailed site-specific studies of avian use. The key question for the lead agencies is whether or not these studies provide sufficient information for the permitting agencies to issue and condition the permits and approvals required for construction. As lead agencies under NEPA and SEPA and as permit agencies, Klickitat County and BPA must maintain a balance between the environmental review and permitting processes and property owners' rights to fairness and reasonable uses of their land. The lead agencies believe that the studies conducted to date, combined with the additional studies called for as mitigation to be conducted prior to construction provide adequate information to evaluate and, where appropriate, mitigate adverse environmental effects. The lead agencies have, however, identified benefit from an additional winter season of monitoring for bald eagle use and an additional year's study of peregrine falcon use on the eastern portion of the site based on the comments received on the draft EIS. The Preferred Alternative, described in Part 2 of this document, would therefore restrict development on the eastern portion of the site until after such monitoring was conducted and evaluated. (See also General Response Nos. 2 and 10.)

4.2.2 General Response No. 2 – Need for Regional Windpower/ Avian Studies and Supplemental Environmental Review

Several commentors suggested the need for a regional study to evaluate the effects of windpower development throughout the lower Columbia River region or the Pacific Northwest and/or to develop and evaluate siting criteria before permitting the Proposed Action to proceed. One agency, the Washington Department of Fish and Wildlife (WDFW), suggested that a regional plan for siting wind energy facilities or a supplemental draft EIS should be required prior to further consideration of the Columbia Hills site. However, in subsequent discussions, WDFW staff acknowledged that a regional plan could not be required under NEPA or SEPA for a single windpower development project.

Nonetheless, there may be substantial regional benefits to evaluating and adopting wind energy siting standards on a regional basis at some point in the future, as has been previously indicated by the Northwest Power Planning Council. The Proposed Action would not preclude the evaluation of regional effects of wind energy development or the development of regional siting standards by government agencies or other public or private entities. Experience to be gained from the development of the Proposed Action would likely be beneficial to such regional studies, whenever and by whomever they are undertaken.

Several commentors expressed the opinion that a regional study of the effects of windpower generation, particularly on birds, was needed as part of the environmental review of the Project. Commentors differed in the scope and geographic extent of a regional study, but most were concerned that development of the Project would induce similar windpower projects in the Columbia River Gorge or in the Pacific Northwest generally. The concerns expressed by the commentors generally regarded the potential impacts to birds and other wildlife from the cumulative impact of windpower projects in addition to the KENETECH Windplant No. 1 and the CARES Columbia Wind Farm No. 1 in the Columbia Hills, and that such impacts should be addressed in a comprehensive study aimed at regional siting standards and a regional approach to conducting avian surveys.

No basis is given for the conclusion by several commentors that the KENETECH Windplant No. 1 and the CARES Columbia Wind Farm No. 1 would induce the development of other wind energy projects in the region. Conditional use permit applications for both projects are site-specific and do not seek authorization for any other wind energy development in either the Columbia Hills or elsewhere. No zoning map changes or zoning text amendments are required or sought for the Project, and therefore no other wind energy proposals would benefit directly from approval of the Proposed Action.

The environmental review of the KENETECH Windplant No. 1 has been Project-specific, including extensive on-site surveys of avian use and migrations, cultural resources, soils and riparian areas, plants and wildlife habitat, and aesthetics. In addition, Project-specific avian studies included off-site evaluations of certain breeding raptors in order to evaluate it. The site was within the home range of nest sites. Evaluation of aesthetics from off-site locations were also included. Finally, this EIS also considered available information on another site at Rattlesnake Mountain. It is anticipated that such studies would be required for any other wind energy project with a similar or greater scope of potential environmental impacts, and that such

studies would of necessity be site-specific to such other proposals. It has not been demonstrated that the NEPA/SEPA EISs for the KENETECH Windplant No. 1 and the CARES Columbia Wind Farm No. 1 proposals could be used to substitute for site-specific environmental review of other wind energy proposals.

With regard to the potential cumulative impacts throughout the Columbia River Gorge or the Pacific Northwest of wind energy development, it is important to note that there are no other pending applications for land use approvals for wind energy proposals that trigger NEPA or SEPA evaluation. With respect to the Zond 7-Mile Hill Project, Waser County, Oregon, made preliminary determinations on a conditional use permit application but has not made any findings regarding impacts to wildlife. This permit application has been held in abeyance by Wasco County pending the completion of avian studies. Zond has not initiated the required studies, probably because it does not have a power sales agreement with a utility, and has not been selected for negotiations of a power sales agreement by any utilities that have requested proposals in recent years. Based on this understanding of the status of the 7-Mile Hill Project, the lead agencies have determined that it is too speculative to be considered in a cumulative impacts analysis for the Washington Windplant #1 Project. While other wind energy companies have announced project proposals or proceeded to preliminary stages of evaluation, none in the State of Washington have applications for permits pending before local government or state or federal agencies. Wind energy developers or property owners may never commit the resources necessary to evaluate these projects and may never proceed through the process of obtaining permits required to develop such facilities. Therefore, no other wind energy development proposals are considered to have become more than speculative proposals.

Neither NEPA nor SEPA requires the evaluation of cumulative impacts of speculative projects. It is not reasonable or feasible to study the potential impacts of other proposals without pending applications or in areas far removed from the Project site. Despite the apparent location of other areas in the region that may have sufficient wind resources to consider siting other wind energy facilities, such areas have not been evaluated under NEPA or SEPA for potential adverse environmental impacts and development of any such areas is considered too speculative for the Project-specific analysis of cumulative impacts.

BPA does not have a wind energy development program for the region that requires a regional programmatic study of avian use and migration. BPA's 1992 Resource Supply Expansion Program (RSEP) included a wind power strategy to help host utilities develop small-scale wind demonstration projects to enable Northwest utilities to address regional barriers to cost-effective wind development and gain hands-on experience with the operation and integration of wind-generated electricity. However, only two such demonstration projects have been selected for BPA consideration—the CARES Columbia Wind Farm No. 1 and the Wyoming Windplant #1 in Carbon County, Wyoming. The Wyoming Windplant #1 is undergoing separate environmental review by the Bureau of Land Management as lead agency. Due to BPA's increasingly noncompetitive market position, BPA is currently reviewing all of its generation resource portfolio, including the wind energy demonstration projects, to ensure that they are cost effective and necessary. It is highly improbable that BPA would support any additional wind demonstration projects, and BPA is not actively pursuing the acquisition of any other wind-generated power.

BPA evaluated the comparative environmental impacts of wind-generated power with the impacts of alternative forms of power generation, including gas combustion turbines, other fossil fuels, and nuclear power in its February 1993 Resource Programs EIS (RP EIS). The RP EIS is a programmatic document that evaluates the environmental tradeoffs among generic resource types and the cumulative effects of adding these resources to the existing system. The purpose of the RP EIS was to analyze resource acquisition alternatives based on the comparative and cumulative environmental impacts of various generation types. This document is incorporated by reference into this final EIS. No additional programmatic review of wind energy is required because BPA has not altered its resource acquisition strategy to acquire additional wind-generated power in the region.

A regional study of the effects of wind energy development on migratory birds, raptors, or other resources of concern may be useful as a management tool for wildlife agencies and local governments. A regional study of avian use and migration throughout the Columbia River basin or throughout the Pacific Northwest would benefit the public generally, rather than any single developer or owner of a site-specific project. It is incumbent upon the state and federal wildlife agencies and/or environmental organizations to initiate and fund such studies rather than the developer of a single site-specific project. To require the first developer of a wind energy project or the first local government to consider a permit application for a wind energy facility in the region to fund and incur the delays appurtenant to such studies would violate the rule of reason underlying NEPA and SEPA.

4.2.3 General Response No. 3 – Consistency of the Draft EIS with BPA Policies and Responsibilities

Several commentors asserted that BPA as the responsible federal agency was violating its responsibility of "restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects." This EIS is the means of complying with BPA's quoted responsibility. NEPA requires that BPA take a hard look at the environmental impacts of a proposed action and reasonable alternatives and mitigation measures before making a decision on the utilities' request for transmission services for the project's power output. SEPA places a similar responsibility on Klickitat County in its evaluation of the conditional use permit application. The comments prejudge BPA's and the County's efforts to comply fully with this responsibility under NEPA and SEPA, and are considered extraneous to the considered analysis of potential environmental impacts of this Project. The lead agencies have used the environmental review process to identify appropriate measures to "restore and enhance environmental quality and avoid or minimize possible adverse environmental effects" and will fully consider all the information prior to making their decisions.

4.2.4 General Response No. 4 – Tradeoffs Between the Impacts and Benefits of Windpower Development

Comments from several environmental organizations, including Greenpeace, Renewable Northwest Projects, and Northwest Environmental Advocates, support the development of wind energy as an alternative to other types of power generation, most notably gas combustion turbines. These commentors stated that the environmental impacts of gas combustion turbines,

including health impacts from sulfur dioxide and nitrogen oxide emissions and global warming from carbon dioxide emissions, are far greater qualitatively and affect a far greater quantity of the earth's surface and atmosphere than wind energy facilities. These commentors identified research findings that wind energy development's impacts on birds would be less than the impacts on birds from fossil fuel generation, viewed as a whole. They believe that wind energy as a non-polluting renewable resource fulfills the mandate of the Northwest Power Act and is part of the regional and global solution to the impacts of power generation. Finally, these commentors note the economic competitive advantage of gas combustion turbines over wind energy given the low cost of natural gas, and argue that further economic disincentives to wind energy from unwarranted studies of avian impacts would diminish the prospect for the environmental advantages of wind energy.

In response to the views of renewable resource advocates, other environmental organizations, most notably the Audubon Society, focused on the Project's potential impacts on birds and other wildlife and the potential cumulative impacts of wind energy development in the region, and do not believe that such impacts are acceptable to obtain the benefits of the Proposed Action. Some of these organizations view the Columbia Hills site as an important bird area and advocate a moratorium on wind energy development until proven technology is in place that prevents avian, especially raptor, mortality (see General Response No. 11). Other organizations, such as Central Cascades Alliance, advise that no more than 50 megawatts or 150 turbines should be developed on the western portion of the site until further monitoring of avian usage and mortality is undertaken by the Applicant or permitting authorities.

On the whole, the comments suggest a strong difference of opinion regarding the acceptability to these organizations, wildlife agencies, and individual members of the public of potential avian mortality from the Project. On the one hand, further studies of avian use of the Project site could improve the ability to avoid or minimize impacts to birds, although perhaps only marginally based on the relatively low level of potential avian impacts determined by the draft EIS and the Avian Technical Report. On the other hand, a requirement for further studies and the burden of additional costs and delays could make wind energy noncompetitive in the market for power resources, and delay or disable the ability of Northwest utilities to purchase wind energy in place of other forms of power that are cheaper but have greater impacts on the environment.

4.2.5 General Response No. 5 – Traditional Cultural Properties

The draft EIS indicated, on the basis of oral history information reviewed to February 1995, that Juniper Point appeared to qualify for listing in the National Register as a traditional cultural property. Since then, consultation with the Yakama Indian Nation and further review of oral history tapes confirms this conclusion. Juniper Point is a Yakama legendary place; it was used as a vision quest site and a place to gather roots and medicinal plants. Eagles perched there. The following discussion of impacts assumes that Juniper Point is a National Register-eligible traditional cultural property.

The KENETECH Project proposes no development on Juniper Point itself. Turbine strings located about one-half mile and further distant from Juniper Point, however, would be visible to the north, northeast, and southwest. Because vision questing involved views in the four cardinal directions, the Project would adversely affect Juniper Point as a suitable site for vision

quests from the Yakama Indian Nation's perspective. The Yakama believe that the spirituality of the place would be reduced. They also believe that both the KENETECH and the CARES projects would alter the traditional cultural value of Juniper Point. Thus, this EIS concludes that the Washington Windplant #1 would have a significant unavoidable adverse impact on Juniper Point as a traditional cultural property.

It should be noted, however, that development currently exists on Juniper Point, that views toward the Columbia River now take in development features such as the John Day Dam, and that the KENETECH Project proposes no additional development at Juniper Point. Further, the Yakama currently do not have access to Juniper Point or the area of the Columbia Hills where the KENETECH Project is proposed. Mitigation includes developing a plan for decommissioning the Project. Although the Yakama do not currently practice spiritual activities at Juniper Point, consultation and review of oral history tapes indicate the Yakama will view the project as having an adverse effect on its traditional cultural value to them.

Consultation with staff of the State Office of Archaeology and Historic Preservation (SHPO) has determined that the eligible archaeological resources identified in the draft EIS and the traditional cultural property at Juniper Point may be eligible for listing in the National Register of Historic Places as a Multiple Property Listing. Multiple Property Listings are designed to nominate groups of related resources in archaeologically or culturally common areas. A Multiple Property Listing is similar to an Historic District but has the advantage that boundaries need not be specifically defined, and resources identified in later surveys can be included.

4.2.6 General Response No. 6 – Opportunities for Yakama Indian Nation Input

The County and BPA have made extensive efforts to consult with the Yakama Indian Nation. The attached table provides a chronology of these contacts, whether they were accomplished by letter or meeting, who the participants were, and what subjects were discussed.

Native American Contacts and Consultation

Date of Contact	Type of Contact	Participants	Subject
February 10, 1994	Letter	From Francine Havercroft, Klickitat County, to Fred Ike, Sr., YIN	Offer to schedule a separate EIS scoping meeting with YIN.
April 20, 1994	Letter	From Curt Dreyer, Klickitat County, to Johnson Meninick, YIN	Confirm April 22 meeting; request YIN concerns; introduce Project consultants.
April 20, 1994	Meeting	YIN Culture Committee Members; Kali Robson, YIN Botanist; Rose Leach, YIN Wildlife Biologist; Curt Dreyer, Klickitat County; Kathy Fisher, BPA	Describe KENETECH and CARES Projects; discuss environmental review processes; government-to-government relations; YIN concerns.
April 26, 1994	Letter	From Kathy Fisher, BPA, to Jerry Meninick, YIN	Request YIN's active participation in the environmental review process.

Date of Contact	Type of Contact	Participants	Subject
June 13, 1994	Letter	From Kathy Fisher, BPA, and Curt Dreyer, Klickitat County, to Jerry Meninick, YIN	Request YIN participation in Project EIS scoping; offer to schedule scoping meeting; extend deadline to July 22, 1994.
June 16, 1994	Telephone call	Gail Thompson, HRA; Johnson Meninick and Fred Ike, Sr., YIN	Discuss HRA request to conduct oral history interviews; YIN concerns about Projects; YIN review of archaeological research design.
July 8, 1994	Letter	From Gail Thompson, HRA, to Johnson Meninick and Fred Ike, Sr., YIN	Request YIN information on cultural resources and a meeting/field visit to discuss YIN concerns.
July 21, 1994	Telephone call	Gail Thompson, HRA, and Johnson Meninick, YIN	Arrange meeting/ field visit for August 8, 1994.
August 8, 1994	Meeting/field visit	Johnson Meninick, Fred Ike, Sr., Russell Billy, Jo Anna Meninick, Gordon Lothson, YIN; Dana Peck, KENETECH; Ben Wolff, CARES; Kathy Fisher, BPA; Paul Spies, Columbia Aluminum; Scott King, Gail Thompson, HRA	Describe Projects; discuss government-to-government relations; YIN concerns.
August 15, 1994	Letter	From Scott King, HRA, to Johnson Meninick, YIN	Request review of cultural resources survey study plan.
August 16, 1994	Letter	From Scott King, HRA, to Guy Moura, CTUIR	Request review of cultural resources survey study plan.
August 23, 1994	Letter	From Kathy Fisher, BPA, to Jo Anna Meninick, YIN	Request YIN proposal for participating in oral history interviews.
August 25, 1994	Letter	From Scott King, HRA, to Jeff Van Pelt, CTUIR	Enclose additional copy of cultural resources survey study plan and request review.
August 26, 1994	Telephone call	Scott King, HRA, and Tom Baylor, CTUIR	Discuss CTUIR comments on cultural resources survey study plan; availability of CTUIR technicians for field crew.
September 1, 1994	Telephone call	Scott King, HRA, and Greg Cleveland, YIN	Discuss archaeological survey and availability of YIN technicians for field crew.
September 1994	Archaeological field survey	Julia James, YIN	Member of archaeological field crew.
November 3, 1994	Meeting	CARES Staff and YIN Tribal Council	Presentation on CARES Project to YIN Tribal Council.
November 7, 1994	Letter	Johnson Meninick, YIN, and Kathy Fisher, BPA	YIN proposal for oral history interview.
November 17, 1994	Letter	From Kathy Fisher, BPA, and Curt Dreyer, Klickitat County, to Johnson Meninick, YIN	Clarifying expectations for oral history interviews by YIN and HRA.

Date of Contact	Type of Contact	Participants	Subject
November 29, 1994	Letter	From Jerry Meninick, YIN, to Kathy Fisher, BPA, and Curt Dreyer, Klickitat County	Requesting extension of deadline for oral histories to January 15, 1995.
December 15, 1994	Letter	From Curt Dreyer, Klickitat County, and Kathy Fisher, BPA, to Jerry Meninick, YIN	Extending deadline for oral histories to January 15, 1995.
January 3, 1995	Letter	From Jerry Meninick, YIN, to Kathy Fisher, BPA, and Curt Dreyer, Klickitat County	Enclosing a Tribal Council Culture Committee Action changing the deadline for oral histories from January 15, 1995, to June 30, 1995.
January 11, 1995	Meeting	Johnson Meninick, Fred Ike, Sr., Russell Billy, Walter Speedis, William Yallup, Sr., Amelia Sohappy, Bill Bradley, Gordon Lothson, YIN; Ben Wolff, CARES; Dana Peck, Steve Steinhour, KENETECH; Gail Thompson, HRA	Meeting at YIN Cultural Resources Program Office to discuss cultural resource and other Project concerns.
January 17, 1995	Letter	From Sverre Bakke, Klickitat County, to Jerry Meninick, YIN	Discussing the County's SEPA review process and offering to enter into an intergovernmental Memorandum of Understanding with YIN.
January 24, 1995	Meeting	Johnson Meninick, Fred Ike, Sr., Reverend Russell Billy, Shirley Spencer, Rory Flint Knife, Sharon Goudy, Bill Bradley, Gordon Lothson, YIN; Kathy Fisher, BPA; Knute Rife, Tom Pors, Klickitat County (Foster Pepper & Shefelman); Pat Tangora, R. W. Beck; Greg Poremba, Mark Matthies, Jones & Stokes; Craig Holstine, Eastern Washington University	Discussing YIN concerns regarding consultation process, Project schedules, and potential Project impacts on natural and cultural resources.
February 15, 1995	Letter	From Curt Dreyer, Klickitat County, and Kathy Fisher, BPA, to Lonnie Selam, William Yallup, and Sharon Goudy, YIN Culture Committee	Discussing schedule for SEPA review process, request for YIN comments on environmental impacts, and National Historic Preservation Act Section 106 consultation process.
April 11, 1995	Letter	From Jerry Meninick, YIN, to Kathy Fisher, BPA	Commenting on Draft Environmental Impact Statements for the Projects.
April 13, 1995	Letter	From Kathy Fisher, BPA, to Johnson Meninick, YIN	Discussing comment period for Draft Environmental Impact Statements, site visit planned for April 26, and BPA's desire to discuss potential National Register eligibility of Juniper Point as a traditional cultural property.

Date of Contact	Type of Contact	Participants	Subject
April 26, 1995	Field visit/ meeting	Florence Aguilar, Russell Billy, Sharon Hill, Fred Ike, Sr., Sandy Kiona, Gordon Lothson, Johnson Meninick, Amelia Sohappy, Walter Speedis, Bill Yallup, Sr., YIN; Curt Dreyer, Tom Pors, Klickitat County (Foster Pepper & Shefelman); Kathy Fisher, BPA; Dana Peck, KENETECH Windpower; Ben Wolff, CARES; Gail Thompson, HRA	Discussing YIN traditional cultural uses of the Columbia Hills area and YIN concerns about potential Project impacts on natural and cultural resources.

Appendix B to this document includes meeting notes from the April 26, 1995 field trip with Yakama Indian Nation representatives.

4.2.7 General Response No. 7 – Indian Treaty Reserved Rights

The Yakama Indian Nation claims a continued right to use of the resources of the Project site under the "Reserved Rights" doctrine, including the continuation of off-reservation hunting, fishing, gathering of roots and berries, and the pasturing of horses and cattle upon open and unclaimed lands. The courts have stated that land in private ownership, particularly where it is obvious to a reasonable person that the land is privately owned, is not "open and unclaimed" land for which the Yakama can exercise their reserved hunting and gathering rights. The Yakama Nation's view of reserved rights for hunting and gathering appears to recognize the ability of private property owners to deny access to Native Americans, but the Yakama Nation also claims a kind of sovereignty over plant and animal resources, water, minerals, and other things necessary to preserve and maintain a traditional way of life. The lead agencies are not aware of any legal precedent to support such a claim. Nevertheless, the lead agencies recognize that the Proposal and all alternatives would involve uses of the Project site which are incompatible with traditional uses of the Project area, which is regarded by Yakama Nation elders as a significant impact. Under the No Action Alternative, current grazing and other agricultural uses, and the posting of "no trespassing" signs by landowners, has a similar impact on traditional uses and reserved rights. Under the Proposal and all alternatives, including the Preferred Alternative, denial of access to Native Americans could continue as a privilege of property ownership by non-Indians.

4.2.8 General Response No. 8 – Priority Habitats and Species

Several commentors on the draft EIS expressed concerns regarding Priority Habitats and Species. Priority Habitats and Species is a WDFW program that provides advisory designation and management recommendations of habitat types and wildlife species that are declining or otherwise sensitive to disturbance.

BPA, Klickitat County, and the Applicant were aware of the need to consider Priority Habitats and Species in the environmental review process. Field studies were conducted to identify the type and distribution of Priority Habitats and Species on the Project site and to develop Project

alternatives that consider these habitats and species. Additionally, several mitigation measures were identified on page 2-27 of the draft EIS to reduce impacts to Priority Habitats. The Project was developed in consideration of Priority Habitats and avoids approximately 96 percent of the existing Priority Habitats on the site. In addition, the Alternative Powerline Route and Restricted Areas Alternative respond to this issue by providing an alternative that minimizes impacts to several Priority Habitats (see page 2-28 of the draft EIS). The Preferred Alternative, discussed in Part 2 of this document, includes measures to reduce impacts to and compensate for remaining impacts to oak and some shrub-steppe habitats.

Many WDFW recommendations for Priority Habitats call for complete protection of the habitat and do not provide guidance to minimize or otherwise mitigate unavoidable impacts. For example, the WDFW guidelines for oak woodlands are "remaining oak stands, regardless of size, should be maintained or enhanced and no activity should result in a net decline of oak habitat." Such recommendations calling for complete protection are very difficult to follow within the realities of Project planning. Sometimes impacts are unavoidable. For example, permits can be obtained from the U.S. Army Corps of Engineers to fill wetlands, which are federally protected, during construction of projects when there are no feasible alternatives to meeting the stated purpose and need for the project. There are no current regulatory protections for priority habitats from such agricultural uses as grazing, cultivation, and cutting of firewood. Losses of Priority Habitats, which are advisory and not protected by law, are also sometimes unavoidable.

Of the 1,080 acres of oak and oak/pine habitat present on the site, 98 percent would not be altered by the Proposed Action. The Alternative Overhead Powerline Alignment, which involves a shifting of the route, was developed to reduce impacts on Oregon white oak and other Priority Habitats.

The Priority Habitats and Species and Natural Heritage Wildlife Data (PHS/HRTG) maps provided by WDFW did not include juniper woodlands on or near the Project site, but patches of widely dispersed scattered juniper do occur on the Project site. Most (93 percent) of the scattered juniper areas would be avoided by the Proposed Action.

Shrub-steppe habitats were identified and, to the extent practical, avoided during development of the alternatives. Of the 945 acres of shrub-steppe present on the Project site, about 94 percent would not be altered by the Project. The Alternative Powerline Route, which involves a shifting of the route to avoid Priority Habitats, would reduce the amount of shrub-steppe habitat disturbed by the Project by about 10 percent (about 2 hectares or 5 acres).

No riparian habitat would be altered by the Project. Mitigation measures outlined under Section 2.1 (Earth) and Section 2.3 (Plants) of the draft EIS would serve to further protect riparian areas.

Priority Species were identified in Tables 2.4.2 (page 2-35) and 2.5.1 (page 2-45) of the draft EIS. Twelve non-avian wildlife species were found to be on the site, including western gray squirrel, a state-threatened species. Seven avian Priority Species were found to be present in numbers sufficient to be considered significant elements of the natural environment. These species include peregrine falcon, bald eagle, Swainson's hawk, western bluebird, golden eagle, prairie falcon, and turkey vulture. Impacts for these species are described in the draft EIS, Section 2.5.4.

Klickitat County, BPA, and the Applicant are addressing potential impacts on bald eagle and peregrine falcon through formal consultations with the USFWS.

Consultations with resource agencies, a literature review, and reviews of habitats in the Project vicinity identified 22 priority bird species that could potentially be present on or near the Project site. Of these 22 species, seven (western sage grouse, gray flycatcher, burrowing owl, grasshopper sparrow, bank swallow, black tern, and sage sparrow) were not observed in the study area nor were they listed as present by the WDFW Priority Habitats and Species data base. Seven other Priority Species (osprey, long-billed curlew, loggerhead shrike, sandhill crane, northern goshawk, ferruginous hawk, and ash-throated flycatcher) were observed infrequently in areas proposed for wind turbine development (generally only seen once or twice over the 850 hours of observations made at the site). The draft EIS also identified mitigation for impacts to Priority avian and non-avian species. As indicated in Part 3 of this document, certain modifications and additions to these mitigation measures have been made in response to WDFW comments on the draft EIS.

4.2.9 General Response No. 9 – Migratory Bird Treaty Act and Bald and Gold Eagle Protection Act and Their Relationship to the Proposed Action

The Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act contain provisions, enforceable by federal agencies including USFWS, prohibiting the taking or killing of individuals of protected species of birds, including eagles, peregrine falcons, and other migrating birds. Neither Klickitat County nor BPA have independent authority to enforce the penalty provisions of these acts or to issue permits for lawful "takes" thereunder. The lead agencies and members of the public may complain to the USFWS of a potential violation of one or more of such laws, however, and this would likely lead to an investigation and response from USFWS.

These laws contain prohibitions on taking individuals of protected species that were primarily designed to penalize active, intentional conduct such as unpermitted hunting or commercial use. There have been conflicting court decisions about whether and in what circumstances these prohibitions apply to unintentional conduct such as the construction or maintenance of facilities with which birds or other protected species might collide or otherwise be harmed. USFWS issued an April 28, 1994 memorandum that focuses the inquiry in these circumstances on the windpower developer's efforts to reduce the impacts on wildlife and to develop safer windpower technology, rather than viewing individual collisions as violations of the law. USFWS has not yet determined whether particular avian mortality permits will be required for windplant installation, insofar as it will not consider takings violations to occur where the operator is exercising such appropriate care.

Whether or not a permit is limited taking of protected species is issued, the USFWS may direct that the windplant be constructed and operated to meet certain stipulations to reduce impacts to birds and other wildlife. Stipulations could include, but are not limited to, using state-of-the-art technology known to minimize wildlife impacts (e.g., using results of research conducted by KENETECH's avian task force), locating facilities away from known avian concentration areas,

and scheduling Windplant operations to avoid disturbing avian wildlife during defined critical periods.

This EIS evaluates the full range of estimated avian mortalities and impacts (and those relating to other protected wildlife species) that might be covered by such permits or stipulations, if any.

4.2.10 General Response No. 10 – Inadequate Data on Avian Impacts

Several comments indicated that data regarding avian use of the Project site were not sufficient to determine project-related impacts to birds.

While field studies were conducted over a one-year period, information presented in the draft EIS included existing wildlife data that has been collected over several years, including (1) WDFW periodic breeding surveys in this area for peregrine falcon, golden eagle, and other raptor species (several nest sites in the area had been located over the past 5 years) and (2) over 5 years of data from WDFW and ODFW winter bald eagle surveys conducted along the shoreline of the Columbia River.

In addition, the field studies conducted within the study area defined for this Project were extensive and included over 850 hours of observations by professional wildlife biologists.

Most importantly, the field data provided information at a level sufficient to answer the basic questions needed to understand the risks and the amount of avian mortality that could be reasonably expected. These basic questions are described in the Avian Technical Report and are, in summary:

- What species are present and during what seasons?
- How do the birds use the site (e.g., where do they occur, what habitats do they use, and at what altitude do they fly)?
- To what degree is the site used for migration and are there predictable patterns of migration at the site?
- Is the site used by threatened or endangered species?

The field studies provided the answers to these basic questions. They documented 14 species of raptor and 47 non-raptor bird species. For the key species of concern identified during scoping, the field studies documented use by season, habitat, flight altitude, and many other factors (see Appendix C of the Avian Technical Report for a complete list of all data categories collected). The studies directly surveyed migration patterns during the appropriate seasons. Field biologists located three bald eagle night roosts, bald eagle flight routes to and from roosts, three bald eagle day roosts, 17 raptor nest sites on the primary study area, and a previously unknown pair of endangered peregrine falcons (located east of the primary study area). A 10-mile radius from the Project boundary was surveyed twice (using helicopters and on foot) for nesting golden eagles and peregrine falcons during the breeding season.

While raptor use of any area may vary from year to year, the general species composition, habitat associations, and flight behaviors remain sufficiently stable to allow for reasonable predictions of future use based on the year-long avian study. As reported by Newton (1979, Population ecology of raptors), breeding populations of raptors tend to remain fairly stable. Winter populations are more variable, but the basic conclusions found during the winter studies are not expected to change. For example, the avian study results indicate that rough-legged hawks are a major component of the wintering raptor population. The abundance of rough-legged hawks may vary from year to year, but the basic conclusion that they are common during the winter months would remain the same.

For bald eagle use, which is perhaps the greatest concern regarding winter raptor populations, the number of eagles assumed to use the Project site was calculated by doubling the number actually observed. In fact, the number estimated to be present (10) also represents more than actually seen at any one time (five eagles are the most ever confirmed to be present at any one time). These allowances provide estimates that err on the side of overestimation rather than underestimation. This compensates for possible annual variation.

In short, the data provided from the avian studies provide a solid foundation of information on which to base decisions. Impacts were determined based on this information and on: (1) the level and type of avian mortality documented at existing wind resource areas (WRAs) (i.e., San Gorgonio Pass WRA, Altamont Pass WRA, and Solano WRA, California) and (2) established principles of avian ecology and behavior (e.g., habitat association and foraging behavior).

Additional studies may provide some refinement of the existing conditions, but the basic conclusions would remain the same. By far, the majority of information regarding this site was established in this year-long survey. For example, species are not expected to change habitat use, flight patterns, or foraging behavior over the next few years; bald eagle night roosts are within distinct habitat that is limited, so there are few other places they could possibly establish new roosts; hawks and other raptors tend to use the same nests over several years; and the same non-raptor bird species are most likely to continue to use the site.

In summary, the answers to the basic questions listed earlier have been answered. These answers, together with the analysis of documented impacts at other wind resource areas and established principles of ecology, provided the information needed to understand the risks and the amount of avian mortality that could be reasonably expected. Nonetheless, the lead agencies recognize the special concern about potential impacts to bald eagles and peregrine falcons. Therefore, the Preferred Alternative, described in Part 2 of this document, restricts development in the eastern portion of the Project site until an additional winter season of bald eagle use and an additional year's study of peregrine falcon use are conducted and evaluated.

4.2.11 General Response No. 11 – Is the Columbia Hills An Important Bird Area?

A frequent comment received on the draft EIS was that the Project site is an important bird area, although this is not a term with any specific regulatory meaning. The avian studies found many avian resources present on the Project site and in nearby areas. Bald eagles, a threatened species, roost and hunt in the area during winter. Peregrine falcons, an endangered species, were also

observed on the Project site (though on only two occasions). The site is within a transitional area containing many habitat types, and studies found a correspondingly diverse population of birds, with 14 raptor species and 47 non-raptor species present.

Based on comparison with other studies, the site is not a "funnel" for migrating raptors. Extrapolating the 20-minute observation average of 1.21 and multiplying it by 3 to get an hourly rate, the study resulted in an average of 3.63 raptor sightings per hour. Hawkwatch International reported a season average of 10.56 raptor observations per hour at their four monitoring stations in western North America (Hawkwatch International 1992. Patterns and recent trends in counts of migrant hawks in western North America. Salt Lake City, Utah). Of the 28 survey-years of data reported by Hawkwatch International, none of the observation stations reported hourly rates as low as were found on the Project site, and most were twice as high or more. In addition, most (if not all) of these Hawkwatch monitoring stations are in areas that have few resident raptors, so almost all of the observations are of migrating raptors.

In contrast, the Project site has an established resident population. Because of this, and because of the observed flight behavior and the known breeding populations (determined through the breeding raptor survey), the majority of sightings are believed to be of resident raptors rather than migrants.

Another comparison that suggests that the site is not a migratory "funnel" is a rating scale developed by Heintzeman (1986). According to this scale, a migration watch area is considered "poor" if fewer than 12 birds are seen per hour. A site is considered "good" if over 22 birds are seen per hour. Over 33 birds per hour is considered an "excellent" site. The level of raptor observation made at the Project site was considerably lower than this level (averaging 3.63 raptor observations per hour). Observations were relatively steady throughout the spring and fall seasons, with no migratory "peak" observed. If the site were a migratory "funnel," then the level of observations at the site would be expected to be at least a "good." However, the level of raptors observed at the site was in the low end of the "poor" rating.

Another concern raised early in the planning process was that large flocks of wintering waterfowl regularly crossed the Project site. However, the avian studies showed that this was not the case. During observations made during December 1993 and in January, February, October, and December 1994, waterfowl were infrequently seen flying over the site. While the Columbia River contains large concentrations of wintering waterfowl, these birds were observed to concentrate their movements along or on the river. Only three flocks of waterfowl (all geese) were observed to fly over the ridge during the first winter study and none were observed during the second winter study. Five small flocks (a total of 48 birds) were observed during spring and fall studies. This level of observation is relatively low and indicates that the Project site is not an important waterfowl flyway.

With regard to the threatened and endangered species found in the area, the Project site is not as important an area as many other areas in Washington. Most bald eagles that winter in Washington are associated with western Washington river systems. On the east side of the Cascade Mountains, the upper and middle reaches of the Columbia River (which are north of the Project site) support the greatest number of wintering bald eagles (see Fielder and Starkey 1987, cited in the Avian Technical Report prepared for this project). Most of these primary wintering areas in eastern Washington have been mapped by WDFW as priority habitat.

Klickitat County, on the other hand, supports relatively few bald eagles. In 1990, when the most recent statewide survey of wintering bald eagles was conducted, only about 1.2 percent of the total state count was found in Klickitat County (35 out of a total of 2,983). This amounts to about 5 percent of the total count for eastern Washington areas (35 out of 642).

Although the Project site includes some peregrine falcon foraging habitat, the peregrine falcon, a federally endangered species, was observed twice during the 850 hours of surveys conducted at the Project site. No nest sites were found. Until this study was conducted, almost all other records of peregrine falcons were from west of the Project site, where the core of the Columbia River Gorge population resides.

Other raptors at the Project site were found to be common, but the actual density of nesting was not unusually high. During the breeding/nesting survey conducted within the 32 sections of the primary study area, 11 raptor nest sites were found over the 32-square-mile site (0.34 nests per square mile). This is not an unusually high density of breeding raptors. For example, in a widely cited study, Craighead and Craighead (1969) compared two 36-square-mile areas and found the lowest nesting density of raptors to be 1.14 nests per square mile, or more than three times that found at the Project site.

The relative population size (i.e., whether it is unusually large) can also be evaluated based on the average territory size of a particular species. If an area has a density that approaches one pair per average territory size, that is an indication that the population is close to the maximum for that species. In other words, the larger the population, the more densely spaced nest territories should be. Red-tailed hawks are the most common nesting raptors on the Project site. In a study in similar habitat in north-central Oregon, Janes (1994) reported that non-overlapping territory sizes of red-tailed hawks averaged 0.9 square mile each. Using this figure, if all land were occupied within the primary study area by red-tailed hawks, then the Project site should have contained up to 28 red-tailed hawk nests. However, only 7 nests were found in this study, suggesting that the Project site does not have a particularly high nesting density.

Of the diversity of species found at the Project site, many of the species were determined to be rather infrequent visitors to the area (generally seen less than 5 times over the year-long study). These species include osprey, long-billed curlew, loggerhead shrike, sandhill crane, northern goshawk, ferruginous hawk, and ash-throated flycatcher. The level of use found at the site indicate that these birds were not present in significant abundance to be major elements of the affected environment.

4.3 Written Comments and Responses

This section includes written comments and responses to those comments. In cases where written comments were not addressed to the lead agencies but the lead agencies were provided with copies, the written comments are treated as comments to the lead agencies on the draft EIS and are responded to. Table 4.1 is an index of the written comments received.

TABLE 4.1
Index to Comments on Washington Windpower Draft EIS

	Date
State Agencies	
State of Washington Department of Community, Trade and Economic Development	March 30, 1995
State of Washington Department of Ecology	April 17, 1995
State of Washington Department of Fish and Wildlife-Olympia	April 14, 1995
State of Washington Parks and Recreation Commission	April 13, 1995
Tribes	
Confederated Tribes and Bands of the Yakama Indian Nation (including attachments)[1]	April 11, 1995
General Public	
Cellular One (including attachments)	March 16, 1995
Central Cascade Alliance	April 17, 1995
Columbia Gorge Audubon Society Letter to Jan Beyea[1] (including attachments)	March 20, 1995
Columbia Gorge Audubon Society Letter to Bill Weiler[1] (including attachments)	March 30, 1995
Columbia Gorge Audubon Society	April 17, 1995
James C. Gleason	April 10, 1995
Joe Heineck	April 15, 1995
KENETECH Windpower, Inc.	April 17, 1995
Larry and Modene Miles	April 14, 1995
National Audubon Society (including attachments)	April 17, 1995
Northwest Environmental Advocates (including attachments)	April 17, 1995
PANACEA, Incorporated	February 28, 1995
Porteous Mines	March 22, 1995
Portland Audubon Society	April 17, 1995
Ray Thayer	April 15, 1995
General Public	
Ronald R. Wiggins (including attachments)	April 8, 1995
Terry Walker	Before Hearing
Terry Walker	April 15, 1995
William C. & Claudia R. Young	March 12, 1995
William J. Weiler	April 5, 1995
William Link	April 12, 1995

[1] Will be treated as a comment letter on the Draft EIS.

STATE OF WASHINGTON

DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

111 21st Avenue S.W. • P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 753-4011

March 30, 1995

Ms. Kathy Fisher
ECN3 Bonneville Power Administration
905 Northeast Eleventh Avenue
Portland, Oregon 972332

Log: 030695-16-BPA
Re: Kenetech Windpower Windplant No. 1 Project, Klickitat County

Dear Ms. Fisher:

Thank you for the opportunity to review the draft joint NEPA/SEPA Environmental Impact Statement for the Washington Windplant #1 in the Columbia Hills.

In reviewing this document we would request that you comply with Section 106 of the National Historic Preservation Act. From our review of this document and the accompanying reports we note that the archaeological inventory forms have yet to be filed with our office. There is at this time no Determinations of Eligibility for any of the discovered properties. **1**

As we have noted in prior correspondence it is important to address the issue of Traditional Cultural Properties and cultural landscapes. The documentation of both types of properties needs to be accomplished and Determinations of Eligibility obtained for any properties within the area of potential effect. **2**

We would also suggest that you begin discussions with the concerned parties regarding the development of a Memorandum of Agreement that will incorporate agreed upon avoidance, protection and mitigation measures. **3**

Thank you for the opportunity to comment and please feel free to contact me should you have any questions.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist

RGW:lms

cc: Johnson Meninick

Responses to March 30, 1995 Comment Letter From the Department of Trade and Economic Development, Office of Archaeology and Historic Preservation

1. The Bonneville Power Administration has initiated Section 106 consultation by letter dated April 14, 1995. Archaeological survey forms have been filed with the SHPO. While no formal determination of eligibility for discovered archaeological properties has been made, the final cultural resources report concludes that all but two potentially eligible archaeological properties can be avoided by flagging the sites during construction and by minor shifting of turbine strings within surveyed corridors. For the two potentially eligible sites that cannot be avoided, the EIS and the Preferred Alternative described in Part 2 of this document identifies mitigation including further testing to determine eligibility and artifact recovery if the sites prove eligible. The EIS also includes an alternative (the Restricted Areas Alternative) that would avoid development along turbine string J and EE.

2. Review of oral history tapes and ongoing consultation with the Yakama Indian Nation indicate that the Juniper Point area is likely eligible as a traditional cultural property. Although Yakama Indian Nation representatives have declined to assist with defining boundaries for the nomination of this property because of their opposition to the Project, the analysis of impacts and mitigation measures in the draft EIS as modified by Part 3 of this document assumes that the Juniper Point area is eligible for listing in the National Register of Historic Places as a traditional cultural property (see also General Response No. 5 and Part 3 of this document).

3. Members of the Yakama Indian Nation have stated that they will decline to participate in the MOA because of their opposition to the Project. BPA, under the Section 106 consultation process, is currently considering items to be included in an MOA or other form of agreement with the SHPO.

WORK ORDER _____
FILE COPY _____
ENCLOSURE FILED IN _____ (S)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600 • (206) 459-6000

April 13, 1995

Mr. Curt Dreyer
Klickitat County
228 West Main
Room 150
Goldendale, WA 98620

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Pat Tangora	From Linda
Co.	Co. Kl. Co. Planning
Dept.	Phone #
Fax #	Fax #

Dear Mr. Dreyer:

Thank you for the opportunity to comment on the draft environmental impact statement (DEIS) for the Washington Windplant #1 project, proposed by KENETECH Windpower, Incorporated. We reviewed the DEIS and have the following comments.

The owner of a construction site which disturbs five acres or more of total land area, and which has or will have a discharge of storm water to a surface water or to a storm sewer, must apply for coverage under Ecology's Baseline General Permit for Storm Water Discharges Associated with Industrial Activities. Discharge of storm water from such sites without a permit is illegal and subject to enforcement action by the Department of Ecology. 1

Application should be made at least 30 days prior to commencement of the construction activities. A storm water permit application form, referred to as a Notice of Intent, can be obtained by calling (360) 407-7156.

A short term modification to water quality standards will not be required if a hydraulics project approval is obtained from Washington Fish and Wildlife.

If you have any questions, please call Mr. Max Linden with our Water Quality Program at (509) 454-7807.

Sincerely,

Rebecca J. Inman

Rebecca J. Inman
Environmental Review Section

RI:95-1296

cc: Max Linden, CRO
Linda Matlock, WQ
Debbie Smith, CRO

Responses to April 13, 1995 Comment Letter from the Department of Ecology

1. Comments noted. These permits are identified in the Fact Sheet and in Sections 2.1 and 2.2 of the draft EIS.

Received 4/19/95
KR

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Habitat Program: 600 Capitol Way N, Olympia, Washington 98501-1091 - (206) 902-2534

April 17, 1995

Bonneville Power Administration
ATTN: Kathy Fisher, ECN3
905 NE 11th Avenue
Portland, OR 97232

Klickitat County Planning
ATTN: Curt Dreyer
228 West Main, Room 150
Goldendale, WA 98620

Dear Ms. Fisher & Mr Dreyer:

SUBJECT: Joint NEPA/SEPA Draft Environmental Impact Statement (DEIS) - Washington Windplant #1. Lead Agencies: Bonneville Power Administration and Klickitat County. Columbia Hills - T03, R16 - T04, R19.

The Washington Department of Fish and Wildlife has reviewed the above-referenced DEIS, as well as the overall ramifications of the introduction and expansion of wind-powered electrical generation facilities in Washington state.

Although Klickitat County, when considering the proposal, has only to decide on the environmental impact to the Columbia Hills site, the state of Washington and the federal agencies have a greater responsibility to assess the cumulative impacts of additional wind-generated energy facilities within the state and the region. Innovation of alternative energy generation should not be at the expense of limited natural resources. Loss of 'local' or 'regional' populations of raptors may seem acceptable within the context of the proposed project. But if each additional site proposed is to be evaluated and permitted solely on its impacts to local or regional populations, the cumulative impacts could be devastating. 1

An area wide approach, encompassing territories of local and regional raptor populations should be adopted. Within the area, wind resource areas, raptor and other species and habitats could be identified, and population goals established for vulnerable species. Based on these goals and raptor use of given wind resource areas, wind-generated energy facilities may be feasible. WDFW proposes that this approach be pursued through joint agency (local, tribal, states, federal) review and in conjunction with industry and environmental associations prior to establishing wind generated energy facilities in the region. 2

Our review of the Washington Windplant #1 DEIS, for site specific placement of such a facility at Columbia Hills, has indicated that there is a significant amount of information lacking to allow adequate evaluation of the impacts. We find that if an area wide study is not undertaken, the DEIS must be supplemented, incorporating further studies and analysis of information currently available, and reissued to provide agencies with jurisdiction adequate information for environmental review. An additional alternative will need to be included to explicate the information compiled that is lacking in the Draft. 2

ADEQUACY OF AVIAN STUDIES:

Within the state of Washington, there are few sites that support the diversity of unique raptor occurrences as does the area in and around the Columbia Hills. Analysis has shown that only between 0.5 and 5% of 305 sampled areas in eastern Washington have a similar diversity. This analysis was based on the information provided in the DEIS which may underestimate the raptor resources present. It is clear that the collection and analysis of additional information is crucial for adequate environmental review and responsible decsionmaking. 3

Several of the avian studies conducted were insufficient to provide adequate information to evaluate potential impacts to species which utilize the area associated with the proposed project. Winter raptor populations vary considerably from year to year based upon prey availability and species diversity, as well as wintering conditions further to the north. Although additional days were added to the winter survey period, limited data was collected overall. No information was gathered for November, and information gathered for December, January and February represents only about 100 minutes of observation of raptor use within 247 acres of an approximately 12-14,000 acre study area. This is not sufficient information on which to base the conclusions that were drawn in the DEIS. Additional studies should be conducted to more accurately depict winter use of the site. 4

Spring and fall migration study design did not allow for a comparison of raptor use within time periods. Random plot surveys were conducted to evaluate migration. Individual plots were sampled for a twenty minute interval during three time periods of the day. Surveys conducted between 6 AM and 9 AM and 4 PM and 6 PM are considered outside the prime periods of the day for migration. There is also considerable variability within the morning and evening survey periods based on how close to midday they occur. Based on the study design, few of the actual observations may even represent migration depending on what actual time raptors were observed. Random survey plots do not allow concentration of time at given locations and do not allow for comparison of migratory information. Additionally, the implication that times of day were not important for raptors (Avian Study, page 4-11) does not relate to migration. The data is also insufficient for determining placement of turbines based on location and movement patterns. As mentioned before, spring and fall surveys should be conducted from March through mid-May and from the end of August through early November. Survey efforts should be concentrated based on the best weather conditions, time of day, and location within the study area. Random plots are difficult to use to determine if hawks are migrating through an area. 5

The report indicates that the number of raptor species seen during the survey was small. Contrary to the conclusions made in the DEIS, the opposite may be true, based upon the results shown. The report indicates 1.21 birds were seen per 20 minute interval. Based upon an hourly rate, the number of birds seen either represent a large resident population of raptors, or a migratory level that is considered important and indicates a funneling of birds through the area. Based on several factors, such as breeding success from the previous season, there is a tremendous variability in the level of migratory raptors present in any given year. WDFW has serious concerns about the methodology utilized to assess this issue. This information should be reanalyzed after data from subsequent studies has been obtained. 6

The avian report and the DEIS indicate that the study area does not receive abundant waterfowl use and is not considered an important migratory waterfowl corridor. We feel that this information is under represented as the month of November was not included in the study. November is considered the peak month for waterfowl migration. Large flocks of waterfowl move into the area in and around Columbia Hills in November, particularly Canada geese which are known to move between the Columbia River and agricultural fields to the north. In addition, the Columbia River is known as a large east-west migratory corridor for waterfowl. Certain weather conditions (low clouds and fog often seen in the Columbia Hills) cause migratory waterfowl to fly lower, closer to the ground, increasing their susceptibility to collisions. Using comparative information on waterfowl use of the area from mid-winter surveys conducted in cooperation with USFWS and WDFW, a more detailed analysis of waterfowl use should be developed. 7

No surveys were conducted to determine the nocturnal use of the project areas by avian or chiropteran species. Information from the National Avian-Wind Power Planning Meeting indicates that these studies area important in determining the significance for potential impacts. As specified in the *Standardized Assessment and Monitoring Protocols* presented by Sidney Gauthreaux at the National Avian Wind Power Planning (NAWPP) Meeting, nocturnal studies should be conducted and the information obtained should be used to modify the proposal and develop mitigation measures for any impacts identified. 8

Additional information is needed on specific bald eagle flight paths from foraging areas along the Columbia River, especially from below John Day Dam, and from the identified communal roosts. This information is essential for the siting of turbine strings to eliminate or significantly minimize turbine/eagle collisions. If the project is permitted and planning proceeds, bald eagle protection rules require that a site management plan be developed. Guidelines for the protection of bald eagles take into consideration the location of perching, roosting, and foraging habitats used by the eagles. Bald eagle flight paths and corridors will be protected in relation to the proposed sighting of wind turbine strings. 9 10

There was no mention of the Columbia River Gorge peregrine population in relation to nest site productivity. The report identifies seven nesting pairs in Oregon and Washington. The recovery goal for the area is a minimum of three. In 1994 there were only five occupied peregrine sites in Oregon and Washington of which only four successfully reproduced. Although the Gorge population has shown a gradual increase in the number nesting pairs, productivity of this population continues to be 11

well below recovery goals. (Pagel, USFS, pers. comm.) Due to its low reproductive success, the viability of the Columbia River Gorge peregrine population has importance to the overall survival of the regional population. This information should be considered when identifying significant adverse impacts of the project. 11

Additional surveys may be necessary to identify chiropteran use of the area. Bat mortality associated with wind plants, has been noted in other areas of the country. Bats associated with the site *Myotis thysanodes* and *M. ciliolabum* are both federal candidate species. 12

ADDITIONAL INFORMATION REQUIRED:

Due to the many unknowns associated with siting of the first windplant in Washington, and the potential for impacts to threatened, endangered, and priority species, we strongly recommend that the permit for the Columbia Hills site be restricted to 50 megawatts or less and a concomitant portion of the site. Any further development, above the initial 50 MW, or authorization for continuous operation, should not be permitted until the applicant performs studies, approved by WDFW, designed to document avian mortality at the site. The permit should be further restricted to allow the permitting agencies to supplement permit conditions as warranted by the studies of the windplant in operation. Supplementary conditions would include the ability to take certain turbines, or turbine strings, out of operation, if they proved to be of specific concern related to avian mortality. 13

Results of ongoing industry research and experimentation on avian interactions should be juried by the scientific community, published, and where appropriate applied to the project design. Permits need to be conditioned to require retrofitting the turbines with paint or other materials as identified by these studies. 14

Until research results are publicly available, the most current research results should be applied. As an example, the California Energy Commission Studies indicated that of the potential factors contributing to avian mortality, end-row turbines, turbines within 500m of a canyon, turbine elevation, and lattice-type towers were the most important. These conclusions should be considered and incorporated into the project design. 15

Studies of windplants in other locations have determined avian mortality can be affected by the siting of individual turbines. For example, turbines located in close proximity to cliff faces seemed to have a higher mortality rate. Siting of turbines should be discussed in greater detail in the document, with specific emphasis on proximity to cliff faces and similar sites where avian use and mortality may be expected. 16

It is unclear why the powerline along the turbine is underground but the powerline between strings is above ground. The rationale for that decision needs to be presented. If above ground powerlines are justified, planning and design of the project should include electrocution protection measures which meet the 1995 standards set by the Avian Powerline Interaction Committee. These protection measures should apply to all newly constructed powerlines, riser poles, etc as well as any upgrades of existing powerlines that would involve a voltage increase. 17

Although there is no mention of lights atop the turbines, their use has been noted on turbines in other areas. Lights have been identified as an additional contributor to avian and chiropteran mortality. If lights are proposed, we recommend alternatives be determined and implemented. 18

Methods used for slab construction should incorporate design features to prevent rodents or other small mammals from burrowing under the slab. Use of rodenticides will not be acceptable in the Columbia Hills area where rodents and small mammals are a major portion of the prey base for other species. 19

The project has the potential to contribute to siltation of local streams, as well as the Columbia River, during and after construction, until vegetation can be re-established. Siltation of watercourses should be controlled by limiting construction to the dry season, and by requiring an erosion control plan incorporating Best Management Practices. Project construction should be monitored daily, to assure the project meets control standards. Any work within the water would require a hydraulic Project approval from WDFW. Any stormwater detention and treatment should meet or exceed the standards set in the Ecology Stormwater Manual. 20

The Department of Fish and Wildlife has identified numerous habitat types and species as priorities for management and preservation. Project design and planning should incorporate the management recommendations these for Priority Habitats and Species (PHS) into the development of the least impacting alternatives for project size, turbine, road and powerline locations and construction timing and methods. The information provided in the DEIS identifies many priority habitats and species on or near the project site.

Priority habitats are those habitat types with unique or significant value to many species. Habitat types on or near the project site listed as priority by WDFW include: Oak woodlands, Juniper savannah, Prairies and Steppe, Shrub-steppe, Riparian, Wetlands, Talus and Cliffs. Management recommendations have been developed for many of these habitat types and should be incorporated into design criteria and planning for any sites selected for development within Washington. Following is a brief overview of priority habitat recommendations. Additional information and planning assistance is available from WDFW. 21

The DEIS identifies proposed construction of both turbine strings and roads within existing, documented **oak habitat** (*Sections 8 & 9, Township 3 North, Range 17 East, WM and Sections 5 &6, Township 3 North, Range 18 East, WM).* Oregon white oak is the only native oak of Washington. Oak woodlands provide rare and variable habitat comprising a distinct ecosystem which contributes significantly to the diversity of wildlife found in Washington. WDFW priority habitat management recommendations state that: "Oregon white oak woodlands, regardless of stand size, should not be clearcut, removed, replaced or patch-cut unless these activities are inherent to the functional maintenance of oak habitat. Remaining oak stands should be maintained or enhanced and no activity should result in a net decline of oak habitat." (Priority Habitat Management Recommendations: Oregon White Oak Woodlands, WDW 1/94). Turbine strings and roads, proposed for areas identified as oak or oak-pine woodlands should be relocated to avoid or minimize impacts. 21a

The DEIS identifies proposed construction of both turbine strings and roads within existing, mapped **juniper woodlands** (*Sections 9&10, Township 3 North, Range 17 East WM and Section 6, Township 3 North, Range 18 East, WM)*. Juniper woodlands provide unique habitat for a variety of species. Birds and mammals consume the berries and juniper forests provide shade, cover, nesting and hiding components to many species of small mammals and birds. Swainson's hawk are closely associated with juniper woodlands with habitat requirements for nesting and brooding. Deer also utilize juniper for food and cover. Although specific management recommendations have not yet been developed by WDFW for juniper savannahs, identification as a priority habitat indicates that it is a habitat type limited in availability, providing a habitat component for unique or dependent species and it is vulnerable to habitat alteration. (Priority and Habitats and Species List, WDFW 1/95) Turbine strings and roads, proposed for areas identified as juniper woodlands should be relocated to avoid or minimize impacts. **21b**

The DEIS identifies proposed construction of both turbine strings and roads within existing, mapped **shrub-steppe** communities (*Section 13&14, Township 3 North, Range 16 East, Sections 2,10&11, Township 3 North, Range 17 East, WM).* The presence of Douglas buckwheat, Sandberg's bluegrass, bluebunch wheatgrass and an intact cryptobiotic layer, are all indicators of a high quality, relatively undisturbed native plant community. These areas are utilized by a wide variety of mammals, birds, reptiles and invertebrates dependent upon shrub-steppe to meet the majority of their life requisites. The areas of high quality shrub-steppe communities should be fully delineated on the site, and preserved. No construction, staging or other impacts should be allowed within these areas. Before undertaking construction peripheral to shrub-steppe habitat an erosion control plan should be developed to protect the area from encroachment from sidecast material, as well as prompt and aggressive native revegetation of disturbed areas to eliminate encroachment of noxious weeds. Fragmentation of any existing steppe or shrub-steppe should be avoided. Re-establishment or replacement of the components of steppe and shrub-steppe communities, particularly the cryptobiotic layer and Douglas' buckwheat dominated communities, are not feasible. Mitigation for loss of the such communities would require protection of other similar habitat. Construction near delineated high quality shrub-steppe communities should include protection measures to avoid impacts from side-cast material **21c** **21d**

Although Table 2.3.5 indicates that no impacts to **riparian areas** would occur as a result of the project, Figure 2.3.1 indicates new road construction within a mapped riparian area (*Section 23, Township 3 North, Range 16 East, WM*). Riparian habitat is extremely important to wildlife, providing habitat continuity and travel corridors, a moderate microclimate, water storage and conservation, stream temperature control, and a diverse and productive habitat for many species. Even those riparian areas that are degraded should be preserved with the goal of cessation and reversal of current trends toward loss or degradation. WDFW has established recommended fixed-width Riparian Habitat Areas (RHAs) derived from a review of scientific literature. RHAs generally include a zone of characteristic riparian vegetation plus a transition zone dominated by upland vegetation. The appropriate RHA should be determined and road construction, stream crossings and utility lines within the RHA should be avoided. **21e**

Priority species are fish and wildlife species requiring protective measures and/or management guidelines to ensure their perpetuation. Species classified as priority by WDFW identified in the DEIS as on or near the site or, potentially using the site include: peregrine and prairie falcons, bald and golden eagles, northern goshawk, ferruginous and Swainson's hawks, osprey, western burrowing owl, western sage grouse, long-billed curlew, sandhill crane, loggerhead shrike, Lewis' woodpecker, western bluebird, sage sparrow, juniper hairstreak butterfly, western grey squirrel, Columbian black-tailed deer, northern pocket gopher, and Merriam's shrew. Management recommendations have been compiled for most all of these species.

Peregrine falcon were observed within the study area. A pair of was sighted within 5 miles of the proposed site. Peregrines hunting territories may extend to a radius of 15 miles from the nest site. Management recommendations include avoiding disturbance during the breeding season (March - August); restriction of access to cliff rims where nests are built within ½ and ¼ mile of cliff faces; preservation of all major perches around nests by retaining all large snags and large trees; routing of powerlines away from eyries; avoiding the application pesticides near eyries and where winter prey species congregate. **21f**

Prairie falcon were observed perching and foraging within the study area. The availability of suitable nesting cliffs associated with steppe and shrub steppe habitats capable of supporting abundant prey is a key element to their success. Management recommendations to preserve or provide these requirements are: limit human habitation within ½ mile of nests; steppe and shrub steppe habitats should be maintained within breeding home range; and control of ground squirrels and other rodents should be limited to areas outside foraging areas. **21g**

Golden eagles are found both nesting and foraging in the project area. They require large, open areas for feeding and are sensitive to erratic disturbance. Limiting factors for golden eagles are the availability of secluded nest sites; adequate prey populations (large rodent or lagomorphs) located within foraging range of the nest; and minimum nesting territory size. Management recommendations to remit these limiting factors include: avoid large-scale conversion of rangeland near golden eagle territories; avoid development activities that remove vegetation from localized areas and reduce the prey base; restrict camping activities below eyries; spatial and temporal buffers should be used to protect nest sites from disturbance and site-specific management plans should be developed in cooperation with local wildlife authorities; avoid disturbing activities from February 15 to July 15; buffers of approximately 1600 feet should be established around any nest sites during breeding season and access within the buffer restricted until 45 days after the nestlings have fledged or dispersed; construction within 1 mile of the nest should be avoided during the period of nesting through fledging (March 15 through July 15). **21h**

The **northern goshawk**, observed in the project area, is a forest habitat generalist, utilizing a variety of forest types, ages, structural conditions and successional stages. Goshawks and their prey populations - small to medium sized birds and mammals - are limited by the availability of food and habitats. Three components make up the nesting home range (6000 acres) of the goshawk: the nest area, post fledging-family area (PFA) and the foraging area. USFS Management recommendations (Reynolds etal, **21i**

1992) are currently used by WDFW and were specifically designed to provide breeding season habitat for goshawk and their prey. Management recommendations include: Three suitable nest areas (30 acres each) should be maintained per home range. If the project site is identified as part of the identified northern goshawk nest range and any part of the site is identified or designated as part of a nest area, adverse management activities should not occur at any time in those areas; management activities in identified PFA area(s) should be limited to the period from October through February and should meet the criteria specified in Reynolds etal 1992 for planned activities within the PFA; if any of the site is considered to be essential as part of the goshawk foraging area both the desired conditions and management recommendations are similar to that for the PFA. WDFW is currently assembling specific management recommendations for goshawk in Washington and these criteria may need to be considered when developing alternatives or mitigation for the DEIS if applicable. **21i**

Ferruginous hawk, although observed infrequently within the study area, prefer habitat types that are available on the project site: sparse, short grassland and arid shrub vegetation. They generally nest on rocky outcrops, steep cliffs, or in isolated juniper or deciduous trees. Availability of nest sites in undisturbed grassland habitat and in close proximity to adequate prey populations is the factor limiting to ferruginous hawks. Management recommendations include: retain trees and shrubs greater than 3.3 feet in height and within 1 mile of one another. **21j**

Two **Swainson's hawk** nests were identified within the study area. Since individual nesting Swainson's hawks vary in their response to human disturbance and the availability of nesting habitat proximal to suitable hunting habitat is the limiting factor to their success, management recommendations which should be included in the project design include: avoid disturbance near occupied nest during the breeding season (April 1 - September 1); Retain uncultivated tracts, and native shrub-steppe habitats within the range of Swainson's hawks. **21k**

Long-billed curlew although infrequently observed on the site, prefer habitats that are found on the site. The availability of shortgrass prairie habitat is a limiting factor for curlew and should be maintained. **21l**

Loggerhead shrike require open habitats such as the shrub-steppe areas found within the study area for both breeding and nonbreeding seasons. Loss of habitat availability or loss of prey base are limiting factors for this species. Buffers of at least 1100 feet should be maintained around nesting and foraging habitat for applications of pesticides on adjacent croplands. **21m**

General management recommendations applicable to all of the raptor species as well as long-billed curlew , loggerhead shrike, sage sparrow include: preserve remaining steppe and shrub-steppe habitat types that harbor significant populations of medium sized rodents, hares and rabbits; protect prey concentrations with a disturbance buffer of at least 1320 feet; avoid range management activities that degrade native shrub-steppe habitat; restrict access to the rims of cliffs supporting nests; avoid development near nests; modify powerlines and poles to prevent electrocution; use of **21n**

organochlorine, organophosphate, and carbamate insecticides should be avoided or substituted with pyrethroid compounds; repellents should be used in place of rodenticides in areas where raptors occur; and spray applications of pesticides should be avoided. 21n

Juniper hairstreak butterfly is found amongst both juniper-shrub/steppe composite and juniper cover hills and dunes. It is limited by alteration of habitat requirements. To preserve local populations of juniper hairstreak, juniper woodland should be kept intact, not converted to rangeland or used by offroad vehicles. Grazing should be limited, minimized or halted to allow nectar plants to flower. 21o

Limiting factors for **western grey squirrel** are loss of oak/conifer habitat, habitat fragmentation, disease, disturbance, competition, automobiles, and hunting. Management recommendations include: Retain mixed oak/conifer stands with mast producing trees and shrubs; limit habitat fragmentation; limit noise disturbance above ambient background levels around nesting habitat during the critical breeding period (May 15 - September 30); avoid construction of new roads within 1300 feet of occupied western grey squirrel habitat. 21p

Pocket gophers, common on the project site require open, undisturbed tracts of prairie. Management recommendations to meet this requirement include: restrict development of open areas where gophers may occur. plow infrequently fields used by gophers and avoid using herbicides in areas used by gophers. 21q

Merriam's shrew are dependent on arid, undisturbed shrub-steppe and steppe habitats that support adequate numbers of ground dwelling insects. These habitat types should be conserved and not degraded through conversion or spraying of pesticides. 21r

MITIGATION:

The DEIS The DEIS is lacking in its discussion of measures to be taken to mitigate the impacts of this proposal. Mitigation is necessary for the replacement of the loss of habitat function and value from construction of the project. Up to 382 acres will be directly impacted by roads, turbine placement, etc. Measures need to be identified for replacement of unavoidable impacts to wildlife habitat.

Results of research presented at the National Avian-Wind Power Planning Meeting (Denver, CO 7/94) demonstrated habitat loss/disturbance effects at distances up to 250-500 m from the nearest turbines. This should be considered when evaluating the extent of area to be mitigated. Dependent upon the project design after incorporating PHS management recommendations, as well as consideration of the value of on-site vs. off-site mitigation, acreage required for mitigation could vary. If off-site mitigation is determined to be the better option, the goal should be in-kind replacement of the function and value of that which is lost on the project site. 22

Alternative sites for the windplant and alternative powerline routes are identified with no identification of a preferred alternative. We recommend that the windplant be restricted to the western portion of the site (Option 1) and that the alternative powerline route be 23

developed as the preferred alternative.

The document indicates that populations of a number of game species exist on the site in huntable numbers and that birding and wildlife photographic opportunities exist on the site. We realize that the site will remain private land and the landowner has the right to restrict access to these types of uses. Windplants can occupy significant amounts of acreage and we want to ensure that these sites will not be completely closed to public use. We recommend the applicants be restricted from requiring the private landowners to close their lands to public access. In other words, the level of public use of the lands currently allowed by landowners should not be changed by the siting of a windplant on the land. **24**

The document states that up to 10,000 loads of gravel will be needed for site construction. The source of such an extensive amount of gravel needs to be identified since mining of this much gravel can have significant fish and wildlife impacts. If necessary, measures to mitigate these potential impacts need to be identified. **25**

We hope that the next step in the process will be the development of a regionalized approach for siting wind-generated energy facilities. Regional planning is vital for protection of existing natural resources. If the Columbia Hills site is to be further considered prior to the development of a regional plan, a supplemental DEIS will need to be produced and distributed for review. **26**

Thank you for the opportunity to review the documents prepared for the Washington Windplant #1 proposal. If you have any questions regarding the comments provided please call me at (360) 902-2575.

Sincerely,

Constance Iten

Constance Iten
Habitat Biologist

cc: David Mudd
David Anderson
Carl Dugger

Responses to April 17, 1995 Comment Letter from the Washington State Department of Fish and Wildlife

1. Comments noted. See General Response No. 2.

2. Comments noted. See General Response nos. 2 and 10.

3. The comment regarding the diversity of species present is noted. As described in General Response No. 11, the Project site was found to contain many species of birds, including raptors. The raptor species and their habitats, including roost sites and nests, were listed in Section 2.5 of the draft EIS.

   Based on a conversation between David Anderson of WDFW and Steve Hall of Jones & Stokes Associates, it is our understanding that the WDFW's method for determining species diversity was based on comparing existing WDFW raptor data (collected with varying techniques and levels of survey intensity), for random blocks of land located throughout eastern Washington. It is typically not possible to make strong quantitative comparisons between areas that have had different levels of study. The intensity of raptor surveys conducted for this environmental review is expected to be significantly greater than for the 305 areas identified by WDFW.

   There are two specific points regarding the comparison made in the comment. First WDFW has compared Project-specific site data collected through an intensive, site-specific study, with general Priority Habitats and Species data collected from a variety of sources.

   Secondly, two features of the site make raptor nest sites more likely to be noticed on the site than on many lands in eastern Washington: (1) the site is along a major roadway with easy access to viewing locations and (2) the site contains a steep ridge face that allows for relatively easy identification of raptor nests. Many areas of eastern Washington are more isolated and less access to raptor habitats.

   Therefore, while the Project site contains a diverse array of raptors (as listed in Section 2.5 of the draft EIS), a quantitative comparison with the 305 other sites is not possible because of the problems associated with comparing different areas with different levels of studies, different accessibility, and different visibility of nesting areas.

   See also General Response No. 10 and response to comment nos. 5 and 6.

4. The avian study team consulted with the WDFW and other agencies for input regarding methods needed to study wildlife use at the Project site and to discuss findings. Consultations with the WDFW, ODFW, USFWS, and others included:

   - A letter from Carl Dugger (WDFW) to David Every (Dames & Moore), November 29, 1993.

   - A letter from David Anderson (WDFW) to Steve Hall (Jones & Stokes Associates), February 1 and 11, 1994.

- A March 8, 1994 meeting with Mr. Anderson, Mr. Dugger, Chris Kerry (Oregon Department of Fish and Wildlife), Mr. Hall, Jon Ives (Jones & Stokes Associates), Pat Tangora (Beck), and Kathy Fisher (BPA).

- A telephone conversation with Jody Bush (USFWS) and Mr. Hall, February 15, 1994.

- A meeting with Ms. Bush, Jeff Haas (USFWS), Mr. Hall, and Ms. Tangora; March 10, 1994.

- A meeting with nationally recognized experts on study design issues, including Harvey Nelson (USFWS, Ret.) and Dale Strickland (West, Inc.), March 22, 1994.

- A meeting with Mr. Anderson, Mr. Dugger, Ms. Fisher, Mr. Ives, Mr. Greg Poremba (Jones & Stokes Associates), and Ben Wolff (CARES) on November 28, 1994.

- A meeting with Ms. Bush and Michelle Eames (USFWS), Ms. Fisher, Mr. Ives, and Mr. Wolff on December 14, 1994.

Many of the studies, including the expanded breeding bird survey, the survey timing, and the year-long study were in direct response to WDFW recommendations. Following these meetings, a copy of the Avian Study Plan was provided to the WDFW for comment. Because of this consultation, and because no additional comments were received after WDFW reviewed the Avian Study Plan, the lead agencies concluded that the studies were acceptable to the WDFW.

In response to WDFW comments specific to the winter surveys, these surveys involved over 150 staff hours by Jones & Stokes Associates in the field and covered over 12,000 acres. Studies conducted included fixed point observation stations, wintering bald eagle surveys (using the same techniques employed by WDFW studies in Klickitat County), and waterfowl surveys, in addition to the large amount of incidental observations made while conducting formal surveys or traveling between survey stations. An additional 100 hours of study was conducted by Dames & Moore prior to the start of the Jones & Stokes Associates study.

While winter raptor use varies from year to year, the general species composition, habitat associations, and flight behaviors remain sufficiently stable to allow for reasonable predictions of future use. For example, the results show that rough-legged hawks are a major component of the wintering raptor population. The abundance of rough-legged hawks may vary from year to year, but the basic conclusion that they are common on the site during winter months would remain the same. For bald eagle use, the draft EIS doubled the number estimated to be present to compensate for annual variations, and the number assumed to be present (10) in the evaluation of impacts represents more individual eagles than were actually seen at any one time (five eagles were the most ever confirmed to be present at any one time). This doubling was intended to compensate for possible uncertainties inherent to field observations, including annual variation.

5. The spring surveys were conducted from March to mid-May 1994, and fall surveys were conducted from September through October 1994. These survey periods were discussed

with WDFW staff (see the response to comment no. 4) during telephone conversations and meetings and were selected based on WDFW and other recommendations.

The study did not "concentrate on the best weather, time of day, and location" because such concentration would bias the data and potentially invalidate the results. The approach the avian team used was to systematically look at the whole area over the course of different seasons, different times of day, different habitats, and different weather conditions (excluding severe weather). The survey points used on the Columbia Hills site are well distributed within the Project area. They were developed in response to WDFW recommendations that a larger area be surveyed than just the areas being considered for turbine placement. To select a narrow range of locations and conditions to study, as is suggested by this comment, would provide an opportunity for researcher bias, could introduce some invalid presumptions (which may lead to invalid conclusions), and would leave many time periods and areas essentially unstudied.

6. Raptors are indeed an important natural feature of the Columbia Hills area, and this is acknowledged in the draft EIS. However, the level of raptor use does not stand out as either an unusually large resident population level or a "funneling" of migrating raptors. This conclusion is based on numbers published from other sources.

During the breeding/nesting survey conducted within the 32 sections of the primary study area, 11 raptor nest sites were found over the 32 square-mile site (0.34 nests per square mile). This is not an unusually high density of breeding raptors. For example, in a widely cited study, Craighead and Craighead (1969) compared two 36-square-mile areas and found the lowest nesting density of raptors to be 1.14 nests per square mile, or more than three times that found at the Project site.

The population size (i.e., whether it is unusually large) can also be evaluated based on the average territory size of a particular species. If an area has a density that approaches one pair per average territory size for that species, it is an indication that the population is close to the maximum for that species. In other words, the larger the population, the more densely spaced nest territories should be. Red-tailed hawks are the most common nesting raptors on the Project site. In a study in similar habitat in north-central Oregon, Janes (1994) reported that non-overlapping territory sizes of red-tailed hawks averaged 0.9 square-mile each. Using this figure, if all land was occupied within the primary study area by red-tailed hawks, then the Project site should have contained up to 28 red-tailed hawk nests. However, only 7 nests were found in this study, suggesting that the Project site does not have a particularly high nesting density.

A comparison with other studies was also used to evaluate if the site serves as a "funnel" for migrating raptors. Extrapolating the 20-minute observation average of 1.21 and multiplying it by 3 to get an hourly rate, the study resulted in an average of 3.63 raptor sightings per hour. Hawkwatch International reported a season average of 10.56 raptor observations per hour at their four monitoring stations in western North America (Hawkwatch International 1992. Patterns and recent trends in counts of migrant hawks in western North America. Salt Lake City, Utah). Of the 28 survey-years of data reported by Hawkwatch International, none of the observation stations reported hourly rates as low as found on the Project site. In addition, most (if not all) of these Hawkwatch monitoring

stations are in areas that have few resident raptors, so almost all of the observations are of migrating raptors. In contrast, the Project site has an established resident population. Because of this, and because of observed flight behavior and the known breeding populations (determined through the breeding raptor survey), the majority of sightings are believed to be of resident raptors rather than migrants.

Another comparison that suggests that the site is not a migratory "funnel" is a rating scale developed by Heintzeman (1986). According to this scale, a migration watch area is considered poor if fewer than 12 birds are seen per hour. A site is considered "good" if over 22 birds are seen per hour. Over 33 birds per hour is considered an "excellent" site. The level of raptor observation made at the Project site was considerably lower than this level (averaging 3.63 raptor observations per hour). Observations were relatively steady throughout the spring and fall seasons, with no migratory "peak" observed. If the site were a migratory "funnel," then the level of observations at the site would be expected to be at least a "good." However, the level of raptors observed at the site was in the low end of the "poor" rating.

7. While no data were collected in November 1993 or 1994, sufficient data were collected in December 1993 and in January, February, October, and December 1994 which indicated that waterfowl infrequently fly over the site. There is no reason to assume that major waterfowl movements occur over the site during November but not in late October or early December. Only three flocks of waterfowl (all geese) were observed to fly over the ridge during the first winter study and none were observed during the second. Five small flocks (a total of 48 birds) were observed during spring and fall studies. This level is relatively low and indicates that the Project site is not an important waterfowl flyway. While November may be the peak month of migration, major daily movement patterns that occur in November should be detectable in prior and subsequent months. In addition, flocks of waterfowl observed wintering along the Columbia River during winter studies in 1993 and 1994 were not observed to fly up over the ridge and actually cross the Project site. Waterfowl movements were observed to be concentrated along the river.

8. Impacts on bats were disclosed in the draft EIS. Bats, including two federal candidate species (Townsend's big-eared bat and fringed myotis) were assumed to occur on the Project site (see pages 2-34 and 2-35, Section 2.4.3.3 of the draft EIS). Impacts to bats were identified on page 2-38, Section 2.4.4.1 of the draft EIS (see also response to comment no. 12).

   During the development of the avian study, the avian study team determined that nocturnal migrants (most of which are passerines) were at low risk because nocturnal migrants typically fly well above the ground and out of danger with colliding with ground features. In addition, passerine mortalities at California projects are low relative to their abundance in the area.

   Because of the high elevation at which nocturnal migrants typically fly, the most likely time to observe such birds would be at dawn and dusk. If the site were a major migratory flyway, then it is anticipated that larger flocks of birds (greater than 25) would be seen during these periods. However, avian study observers (who were regularly on the Project

site at dawn and dusk during peak passerine migration periods) observed no large flocks entering or leaving the site.

9. Klickitat County, BPA, and the Applicant are addressing potential impacts on bald eagle and other threatened and endangered species through formal consultations with the USFWS. Bald eagle flight patterns were recorded and addressed in the draft EIS. Field staff recorded the location of the observation, the flight behavior, pattern, direction, path, and altitude of each bald eagle seen and mapped movements on USGS maps. A copy of the variables is provided in Appendix B of the Avian Technical Report; a copy of the survey form is provided in Appendix C.

   Roost sites and regular flight paths were identified and considered in the impact evaluation discussed in the draft EIS. Figures 2.5.2 and 2.5.3 in the draft EIS show bald eagle daytime perch locations and bald eagle night roosts. As described on page 2-54 of the draft EIS, turbine strings that bald eagles could encounter on their way to and from night roost sites include strings Z, Y, AA, BB, and CC. The Fact Sheet to this final EIS document identifies a Bald Eagle Site Management Plan under "Permits and Approvals."

   The lead agencies recognize, however, the importance of agency concerns regarding the bald eagle. The Preferred Alternative, described in Part 2 of this document, therefore would prohibit development in the eastern subarea of the site until an additional winter season of bald eagle monitoring is conducted to better determine their flight paths and roosts. This information would support preparation of the Bald Eagle Management Plan. Appropriate operating buffers will be set during the Section 7 consultation process with the USFWS.

10. Klickitat County, BPA, and the Applicant are addressing potential impacts on bald eagle and applicable mitigation measures through formal consultations with the USFWS. See also response to comment no. 9.

11. Available information, as described in this comment (five nests with four successfully reproducing) and as described in the draft EIS (up to seven nest sites), shows that the peregrine falcon population has exceeded the recovery goal for the Columbia Gorge Management Unit (three nest sites with 1.5 young per nest). A previously unknown pair of peregrine falcons was found during the avian study conducted for the draft EIS, so the population is actually greater than the five pairs indicated in this comment.

    The draft EIS concludes that turbine-related injury or mortality to peregrine falcons would unlikely jeopardize the peregrine falcon population in the Columbia Gorge. However, as part of consultation under Section 7 of the Endangered Species Act, the USFWS will be making its own determination regarding the Project's potential to jeopardize the continued existence of the peregrine falcon in the Columbia River Gorge.

12. Bats are addressed in Table 2.4.2 and Section 2.4.4 (on page 2-38) of the draft EIS. These species are assumed to be present and at risk of collision. Additional surveys would not change this conclusion unless some of the bat species were found to be absent (in which case the anticipated level of impact would be lower than identified). The draft EIS's conclusions are therefore based on "worst-case" assumptions for the presence of bat species.

13. Several commentors suggested that restrictions should be placed on the extent of initial development, some on the basis of installed MW and others on the basis of number of turbines. Based on a review of the information in the draft EIS and supporting technical documents and on comments on the draft EIS, the lead agencies have identified a Preferred Alternative that would restrict initial development based on geographical area and that would specifically prohibit issuance of building permits for development in the eastern subarea of the site until after an additional winter season of avian monitoring for bald eagle and peregrine falcon use is conducted. (See Part 2 of this document.) The lead agencies believe such a geographic restriction is more likely to protect avian resources than a restriction based simply on MW or number of turbines. In no circumstance, however, would the total project physical development as discussed in this EIS be allowed to exceed that specified in KENETECH's Conditional Use Permit Application without additional environmental review. See also General Response No. 4.

14. Comments regarding jurying ongoing industry avian research are noted but are beyond the scope of the lead agencies for this Project. Conditions requiring retrofitting based on future research results would be very open ended with no means of determining the feasibility of the measures.

15. Although studies are currently being conducted to determine the underlying causes and circumstances of avian collisions with wind turbines, there are currently no known scientifically supportable measures to prevent incidental mortality altogether.

    Design features have been proposed for this Project by the Applicant to reduce the mortality associated with collision with wires, electrocution, and lattice type towers (see Section 1.4.5 of the draft EIS, Mitigation Proposed by the Applicant and Part 1 of this document). Based on studies at Altamont Pass (BioSystems Analysis 1992), 19 percent of avian mortality resulted from collision with wires (11 percent) and electrocution (8 percent). An additional percentage of mortality occurred on lattice type towers. Based on mortality data collected during 1993 and 1994 at Altamont Pass by the USFWS, electrocution accounted for 12 percent of the mortality while collisions with wires accounted for 2 percent (Struzik personal communication). To reduce avian collision with wires, turbine towers would not include guy wires. To reduce avian electrocution, the Applicant proposes to use the most current raptor-protection measures on overhead powerlines and poles. To reduce mortality associated with lattice towers, turbines would be mounted on tubular steel towers rather than on lattice type towers.

16. Turbine string locations are discussed in Section 2.5.4.1 of the draft EIS, page 2-53 (relating to raptor nest sites) and page 2-54 (relating to bald eagle roost sites). Raptor mortality studies at Altamont Pass have indicated mortality to be higher near canyons than away from canyons (Biosystems Analysis 1992). Struzik (personal communication) surmises that the higher mortality is a result of providing perching sites for raptors adjacent to areas that are frequently hunted. The use of tubular steel towers and enclosed ladders, and smooth nacelles, would reduce the attractiveness of the towers as perch sites at all locations, including adjacent to cliff faces.

17. The powerlines along turbine strings are proposed to be below ground because of safety issues associated with the proximity of powerlines and turbines. Sections 1.4.5.1 and 1.4.5.2

have been modified to clarify this situation (see Part 3 of this document). For the powerline between turbine strings, raptor protection measures are proposed. It should be noted that the general area around the Project currently includes a number of high and low voltage overhead powerlines. As a point of clarification, no upgrades involving voltage increases to existing powerlines are proposed.

18. As stated in Section 2.13.4.1 on page 2-126 of the draft EIS, turbines would not be lighted.

19. A discussion of these impacts has been added to Section 2.4.4.1 of the draft EIS (see Part 3 of this document). In addition, a mitigation measure has been added to the EIS (see Part 3 of this document) to address this issue. Specifically, the Applicant would be required to submit a design that incorporates applicable and feasible measures to control burrowing mammals for foundations extending less than 2 feet below the ground surface for approval by Klickitat County Department of Public Services. This mitigation measure is also included in the Preferred Alternative. Chemical controls for rodents or small mammals are not proposed.

20. Proposed erosion control and soil contamination control measures are described in Sections 1.4.5.3, 2.1, and 2.2 of the draft EIS. An erosion and sediment control plan will be required under the NPDES General Permit for the Project.

21. See General Response No. 8.

21a. Of the 1,080 acres of oak and oak/pine habitat present on the site, approximately 98 percent would not be altered by the Project. The Alternative Overhead Powerline Alignment, which involves a shifting of the route to reduce disturbance of Priority Habitats, was identified by the lead agencies because of concerns about potential impacts on Oregon white oak and other Priority Habitats. The Preferred Alternative, described in Part 2 of this document, incorporates measures to reduce impacts to Oregon white oak and to mitigate (through enhancement and preservation) any impacts that do occur.

21b. The WDFW did not map any juniper woodlands on or near the Project site (based on Priority Habitat and Species maps), but patches of scattered juniper were found to occur on the Project site. Most of the juniper areas would be avoided by the Proposed Action. Alternatives evaluated in the draft EIS would further reduce impacts to juniper woodlands. The Preferred Alternative, described in Part 2 of this document, includes mitigation that would involve routing roads and the Project powerline to avoid juniper woodland where feasible. It should also be noted that the juniper areas that would be affected contain scattered juniper. See General Response No. 8.

21c. Of the 945 acres of shrub-steppe present on the Project site, 94 percent would not be altered by the Project. The Alternative Powerline Route, which involves a shifting of the route to avoid Priority Habitats, would reduce the amount of shrub-steppe habitat disturbed by the Project by about 10 percent (about 2 hectares or 5 acres). Most of the shrub-steppe habitat that would be avoided consists of high-quality bluebunch wheatgrass-Idaho fescue communities. The Preferred Alternative, described in Part 2 of this document, would include adjustments to the proposed powerline route that would reduce the amount of shrub-steppe habitat disturbed. In addition, the Preferred Alternative calls for avoidance

of Douglas' buckwheat/Sandberg's bluegrass community, and where avoidance is not feasible, mitigation through on-site or off-site preservation of this community.

The response to comment no. 20 addresses concerns regarding erosion control.

21d. The comment recommending off-site protection of habitats similar to the ones disturbed is noted. The Preferred Alternative described in Part 2 of this document includes on-site or off-site preservation of Oregon white oak and Douglas' buckwheat/Sandberg's bluegrass communities.

21e. No riparian habitat would be altered by the Project. One road in Section 25, Township 4 North, Range 16 East is outside and above a draw that was identified as riparian habitat. Mitigation measures outlined under Section 2.1 (Earth) and Section 2.3 (Plants) would serve to further protect riparian areas by controlling Project erosion and sedimentation.

21f. As described in Section 2.5.3.1 on page 2-47 of the draft EIS, no peregrine falcon nests are located on the Project site, so management recommendations for nest sites would not apply to current or proposed activities at the site.

Based on Call (1978) and on WDFW recommendations, a 10-mile radius was used to establish the greater study area to search for golden eagle and peregrine falcon nest sites (see the response to comment no. 4 above), as described in Section 3.3.2 of the Avian Technical Report. No pesticides are proposed to be used by the Applicant.

21g. The one prairie falcon nest site identified through avian studies is located near SR-14 and is over 1 mile from proposed Project activities. The most recently published WDFW management recommendations (1992) do not contain recommendations for prairie falcon. However, the Proposed Action and alternatives are consistent with the mitigation measures identified in the WDFW comment letter. Prairie falcons were found to use all habitats on the site, including agricultural lands. Data did not indicate concentrated use within shrub-steppe habitat.

No measures, such as rodenticides, are proposed by the Applicant for controlling ground squirrels or other rodents; however, requiring design measures to prevent burrowing under certain foundation slabs have been identified as a mitigation measure in Parts 2 and 3 of this document.

21h. The Proposed Action and the alternatives would not include large conversions of rangeland. Because only about 3 percent of the vegetation on the Project site would be disturbed, Project-related activities are not expected to have a major effect on the raptor prey base.

The one-mile construction limit for golden eagle was not identified by WDFW during early consultation (see the response to comment no. 4), nor does it appear in the most recently published WDFW management recommendations (1992). Conversations were held with WDFW to clarify the 1,600-foot nesting construction buffer versus the 1-mile nesting construction buffer, both of which were mentioned in this comment. As a result of this conversation, Part 2 and Part 3 of this document incorporates a 1,600-foot buffer for general

construction and a 1-mile buffer for blasting during the nesting through fledgling period. It should be noted that the golden eagle nest site located south of the primary study area would be shielded from construction noise and activities by the ridge. As indicated in the draft EIS and the Avian Technical Report, studies have shown golden eagles to be particularly vulnerable to collisions with wind turbines. As a worst-case analysis, the draft EIS assumes the Proposed Action and the alternatives would likely result in golden eagle mortality.

21i. Northern goshawks are not considered to be significant elements of the affected environment. Only one sighting of northern goshawk was made (see Table 4-1 in the Avian Technical Report), and the species is not associated with the types of habitats found at the site; they are birds of old-growth and mature forest, not of open rangeland. No northern goshawk nests were found on the Project site and based on their 6,000-acre habitat requirement, the 1,080 acres of oak and oak-pine habitat is not sufficient to support northern goshawks. The sighting made at the site most likely represents a nomadic, non-breeding individual. Because of this, the WDFW or U.S. Forest Service management recommendations would not be appropriately applied to the Proposed Action or alternatives.

21j. Ferruginous hawks occur infrequently on the Project site. Only four sightings were made during the one-year study and no nest sites were found on the site or within the 10-mile radius greater study area (see Section 5.4.2, page 5-37, of the Avian Technical Report). The site is outside of the normal range of ferruginous hawks, which are located generally northeast of the Project site within the channeled scablands of the Columbia Basin. Because field data indicate that the hawk occurs on the Project site infrequently and does not breed on or near the site, the management recommendations to protect nesting ferruginous hawks would not be applicable to this Project.

21k. Of the two Swainson's hawk nests found on the site, one is located downslope near Goodnoe Hills and is within 0.25 mile of turbine string NN. The other is sufficiently distant (about 1 mile) from proposed activities to not be disturbed. Based on this comment, an additional mitigation measure has been added to the EIS (see Parts 2 and 3 of this document) to reduce construction-related disturbance to the nest site near turbine string NN.

Approximately 97 percent of uncultivated tracts would be retained after Project development, including 94 percent of native shrub-steppe habitats. The Preferred Alternative, described in Part 2 of this document, would further reduce disturbance of shrub-steppe habitats.

21l. As indicated in Section 2.5.3.1 of the draft EIS, single long-billed curlews were observed on two occasions during the avian study: once during the first winter study and once during spring migration study. They were not observed during the spring breeding survey. While this species may be present, the level of observations indicate that the Project site is not a major breeding area. However, the site is within the general range of the species and, therefore, wind energy development could potentially result in collisions and loss of habitat for this species. As indicated previously, about 94 percent of shrub-steppe habitat would not be disturbed by the Project.

21m. As with long-billed curlew, loggerhead shrike were determined to be uncommon on the site (3 sightings, as stated in Section 2.5.3.1 of the draft EIS). Potential nesting areas include the edges of oak woodlands, which are mostly avoided by the Proposed Action. No pesticide use is proposed by the Applicant. However, because the land for the Project will be under easement, the Applicant has no control over the use of pesticides on croplands by the existing landowners.

21n. Please see the response to comment no. 21c regarding protection of shrub-steppe habitats. The recommendation to protect "prey areas" with one-quarter-mile buffers is vague and would be difficult to implement. There is no accepted definition of "significant populations" of prey or of prey concentration areas. In addition, raptor hunting strategies, as with most predatory strategies, are as closely tied to prey vulnerability as they are to prey abundance. For example, prey abundance is typically quite low on tilled cropland, but several raptor species tend to hunt in these areas because the prey is relatively easy to see and catch (see Bechard 1982. Effect of vegetative cover on foraging site selection by Swainson's hawk. Condor 84:153-159). Because of this complication, and because of the lack of definable criteria, the lead agencies believe this recommendation could not be effectively implemented.

Range management activities are outside of the scope of the decision being made because (1) the Applicant is not proposing changes in range management for the properties it has easements for and (2) the Applicant does not have authority to require property owners to change their practices.

Cliffs are located mostly south of the area proposed to be developed. Construction or operation of the Project would not require access to these areas by the Applicant. The Applicant would not have authority to restrict other access historically or currently made available by property owners.

Powerlines would be constructed and maintained using the most recent guidelines for minimizing the risk of bird electrocution.

Use of insecticides by existing landowners is not related to the Proposed Action. No plans are proposed by the Applicant to use insecticides or to use poison to control rodents or other animals.

21o. The scattered juniper woodlands on the Project site are currently grazed and, in most places, contain non-native grasses and weeds. Little or no sagebrush is present among the woodlands. As previously mentioned, alteration of existing agricultural activities, including grazing, is not within the authority of the Applicant and is outside of the scope of the Proposed Action.

21p. Potential impacts to oak habitat was a major consideration factored into developing alternatives for evaluation in the draft EIS as discussed in General Response No. 8. The Alternative Powerline Route would result in the minimum amount of disturbance and habitat fragmentation.

The 1,300-foot buffer is greater than the 400-foot buffer recommended by WDFW during consultation meetings and phone calls (see the response to comment no. 4), and the 400-foot buffer previously recommended by WDFW was included as a mitigation measure in the draft EIS to protect western gray squirrels during the breeding period. Following receipt of WDFW comments on the draft EIS, the lead agencies asked WDFW to clarify this apparent discrepancy. As a result, Parts 2 and 3 of this document add mitigation to avoid blasting or activities with similar noise impacts within 1,300 feet of western gray squirrel nests from May 15 through September 30. WDFW has indicated a preference that the 1,300-ft buffer apply to any activity; however, the lead agencies do not believe sufficient justification for such mitigation has been produced by WDFW. It should be noted that a 1,300-foot buffer is not included in published Priority Habitat and Species Management Guidelines.

21q. Portions of the project site (approximately 97 percent) will remain undisturbed (see Sections 2.2.2 and 2.2.5.1 of this document) and available as pocket gopher habitat. Restriction of herbicide use on the site has been defined as a mitigation measure proposed by the Applicant (see Part 2 of this document).

As stated previously, the Applicant does not have authority to alter long-term use of the Project site by landowners for agricultural purposes. Again, the Applicant does not propose to use pesticides on the site.

21r. As indicated previously, the Proposed Action would retain about 94 percent of the existing shrub-steppe habitat. The Preferred Alternative would further protect shrub-steppe habitat.

22. The Preferred Alternative includes on-site or off-site preservation of oak woodland and Douglas' buckwheat/Sandberg's bluegrass community. This measure will be considered by decision makers when considering whether to issue and how to condition permits and approvals.

23. The draft EIS did not identify a Preferred Alternative because the lead agencies wanted the opportunity to review input on the alternatives and mitigation identified in the draft EIS prior to identifying a Preferred Alternative. Upon consideration of the comments received on the draft EIS, including comments from the Department of Fish and Wildlife, this document identifies a Preferred Alternative as described in Part 2 as is consistent with NEPA requirements.

The Preferred Alternative incorporates features from several of the alternatives identified in the draft EIS consistent with WAC 197-11-440(5)(c)(vi), which provides that an EIS may evaluate a "range of alternatives or a few representative alternatives, rather than every possible reasonable alternative..." The Preferred Alternative incorporates several mitigation measures that were identified in the draft EIS and from comments on the draft EIS and is designed to reasonably avoid, reduce, or mitigate impacts to Priority Habitats and Species. As described in Part 2 of this document, the Preferred Alternative divides the site into three subareas, would restrict Phase 1 development to the western subarea, would allow development in the central subarea subsequent to a routing study for the Project powerline to reduce impacts to Priority Habitats, and would restrict development in the eastern

subarea until after an additional winter season study of bald eagle use and an additional year's study of peregrine falcon use are conducted.

24. As discussed in the EIS, the Applicant proposes to provide locked gates on privately-owned roads providing access to the Project site in order to limit access and control vandalism. The Proposed Action does not include fencing around the entire site, and private land owners would continue to be free to grant access to their lands according to their own discretion. The level of public use of these private lands is a decision that will continue to rest with the land owners.

25. As a point of clarification, the EIS estimates that up to 10,000 trips could be required for hauling gravel to the site for road construction. Because each trip is one-way, this is equivalent to 5,000 not 10,000 loads of gravel (see notes to Table 2.11.3). This estimate assumes that all Project roads would be constructed during the initial phase of Project development. The Preferred Alternative identified in Part 2 of this document would require less gravel initially. Discussions with gravel pit operators indicate sufficient gravel would be available for the Project.

26. See General Response No. 2.

CLEVE PINNIX
Director

STATE OF WASHINGTON

WASHINGTON STATE PARKS AND RECREATION COMMISSION

7150 Cleanwater Lane KY-11 • P.O. Box 42650 • Olympia, Washington 98504-2650 • (206) 753-5755

April 14, 1995

RE: DEIS - Columbia Wind Farm #1
and Washington Windplant #1
projects - Goldendale
Comments

Ms. Kathy Fisher, Project Leader
Bonneville Power Administration
905 NE 11th Avenue
Portland, OR 97232

Dear Ms. Fisher:

Thank you for sending us a copy of the Draft Environmental Impact Statements (DEIS) for the Columbia Wind Farm #1 and the Washington Windplant #1projects proposed by CARES and KENETECH, respectively. Following are some concerns about potential impacts to Goldendale Observatory State Park by the proposed projects. With over 30,000 visitors per year the observatory sustains many recreational, educational, and economic benefits to the area surrounding Goldendale. Our primary concern with the wind plant projects rests with preserving the quality night sky environment in the Klickitat Valley vicinity so that celestial viewing opportunities from Goldendale Observatory are not degraded. State Parks staff requests that you respond to our concerns surrounding this proposal.

Lighting design for the project area:

Neither DEIS describes nor evaluates a lighting design for any structures in the analysis of the project proposal. Pictures and diagrams of the proposed turbines do not show aircraft warning lights of any kind. Although section 2.13.4.1 states that lighting for these structures is not required under 14 C.F.R. 77, any diversion from this original stand may have impacts on the night sky environment. Also, there is no mention of lighting schemes for any project support buildings. What are the plans for on site lighting? Will this lighting, if any, conform to the Klickitat County Illumination Control Ordinance (ICO) described in section 2.8.2.2? 1 2

Increased Dust Emissions:

Another possible impact to the night sky environment is the increased emissions of particulate matter from the Columbia Hills area. Section 2.10.4.1 describes emission control during the construction phase of the project. However, the DEIS does not discuss the total increase in particulate emissions from areas left disturbed after construction. Nor does it discuss the measures to control the emissions after the project is complete and in the operating phase. After construction what percent of project acreage would be bare or disturbed soil surface? A significant amount of dust in the air in Klickitat Valley above the current level would cause problems with operation of telescope equipment and hinder viewing of some celestial objects. 3

Increased turbulence:

Our third concern deals with air turbulence. Telescopes perform best when the column of air extending outward from the front of a telescope tube is very calm. The largest impacts to viewing occur within the first 50 miles. If air movement (turbulence) occurs in the various layers of atmosphere in front of a 4

telescope, the image can be severely distorted. What are the effects of turbulence on the atmosphere near the turbines? How far reaching are these effects? At what elevation above the turbine blades are these effects negligible?

Thank you for your attention to these concerns and giving us the opportunity to comment. Please call me at (360) 902-8633 if you have any questions.

Sincerely

Chris Regan, Environmental Specialist,
Environmental Programs

cc: Dave Heiser, Environmental Programs Manager
Ange Taylor, Eastern Region Park Manager
John Scarola, Park Manager, Goldendale Area
Steve Stout, Park Ranger, Goldendale Observatory
Bill Fraser, Parks Planner, Eastern Region
Dave Thies, President, Columbia Gorge Audubon Society

Responses to April 14, 1995 Letter From the Washington State Parks and Recreation Commission

1. Aircraft warning lights are not shown on the pictures and diagrams of the proposed turbine structures because they fall below the height requiring lighting by the FAA, and no turbine lighting is proposed by the Applicant.

2. No support buildings are proposed on the Project site. The discussion of mitigation in Section 2.8.4.2 of the draft EIS has been modified (see Part 3 of this document) to add a statement that, if the Applicant proposes limited site lighting in the future, that any such lighting must conform to the requirements of the Klickitat County illumination ordinance and Illumination Control overlay zone.

3. No areas are proposed to remain disturbed after Project construction. Roads would be graveled, and turbine foundations would be paved. After construction, approximately 79 hectares (193 acres) of the site would be permanently occupied with Project features (e.g., buildings, roads, and tower platforms). To minimize the amount of wind-blown dust generated on site during construction, the Applicant would follow soil erosion measures required under the National Pollutant Discharge Elimination System General permit discussed in Section 2.1.2 of the draft EIS. Specific measures are identified in Section 1.4.5.3 of the draft EIS, including preparation of a sediment and erosion control plan. After construction, areas disturbed during construction but not permanently occupied with Project features would be revegetated and roads on the Project site would be covered with a 15-cm (6-inch) minimum gravel surface (see Section 1.4.5.3 of the draft EIS). A small amount of dust would be generated by vehicles traveling on the gravel roads. However, it is anticipated that proposed improvements to the roadbeds and revegetation would minimize the amount of particulate emissions generated on site during Project operation.

4. As a general estimate, turbulence effects are negligible at a distance of 10 times the height of the turbine structure. Because turbines would extend up to about 184 feet, turbulence effects would be negligible at about 1,840 feet (about 1/3 mile) from a turbine. Thus turbulence-related impacts at the observatory would not be expected.

Confederated Tribes and Bands
of the Yakama Indian Nation

Established by the
Treaty of June 9, 1855

April 11, 1995

Ms. Kathy Fisher, ECNS
Bonneville Power Administration
905 NE 11th Avenue
Portland, OR 97232

RE: Comments on the joint NEPA/SEPA Draft Environmental Impact Statement (EIS) for the Washington Windplant #1 (Kenetech Project) and the Columbia Hills Wind Farm #1 (CARES Project)

Dear Ms. Fisher;

The YAKAMA NATION is a federally recognized tribe and is comprised of the Fourteen Confederated Tribes and Bands of the YAKAMA. The YAKAMA NATION is a sovereign Nation with governing powers, with elected tribal officials to represent the YAKAMA NATION which is sanctioned by the United States Government.

The YAKAMA INDIAN NATION takes this opportunity to submit the following general comments on the Draft EIS of both Kenetech and CARES wind power projects.

The opinion of the YAKAMA NATION is that this project is on a fast track -- much too fast. The windpower project under the NEPA process, as proposed, the BPA as a responsible Federal Agency is violating one of its major responsibilities, which is: 1

> "Restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects." 2

The wind turbines are to be placed adjacent to the Columbia River Gorge Scenic Area at locations known to be frequented by golden eagles, bald eagles, peregrine falcons, and other wildlife. There is no question that the wind turbines are a threat to migratory bird populations. 3

These wildlife are protected by the Migratory Bird Treaty Act, 16 USC - 703 - 712, the Bald and Golden Eagle Protection Act, 16 USC - 668 and the Endangered Species Act of 1973.

Disturbances of cultural sites that are potentially eligible for listing in the National Register of Historic Places. Cultural resources surveys show that the area has a relatively high potential for archaeological sites. A survey conducted on the proposed wind turbine site identified nine archaeologically significant sites. Which included six areas with scattered rock tools, rock clusters, rock cairns, and other isolated artifacts. Cairns in the Columbia Hills region could mark places of importance to aboriginal peoples, such as -- trails, burials, and traditional religious sites. 4

Post Office Box 151, Fort Road, Toppenish, WA 98948 (509) 865-5121

The YAKAMA INDIAN NATION cultural staff have identified Juniper Point as being associated with legend and vision quest use in the past. Therefore; Juniper Point should be eligible for listing as a traditional cultural property. 5

The elders of the area who are members of the YAKAMA INDIAN NATION are opposed to these proposed projects because of their past experience of removal and taking of their cultural and religious way of life. These elders and the YAKAMA NATION as a whole has not been afforded sufficient opportunity to voice their serious concerns in regards to the Wind Power Projects and of its potential impacts on treaty reserved rights. 6 7

If you have any questions, please do not hesitate to contact: Mr. Johnson Meninick, Manager, Cultural Resources Program at (509) 865-5121 Ext. 737 or Mr. Frederick Ike, Sr., Cultural Protection Analyst, Cultural Resources Program at (509) 865-5121 Ext. 733.

Sincerely,

YAKAMA INDIAN NATION

Jerry Meninick, chairman
Yakama Tribal Council

JM/fla

Copy: Gail Thompson
Ben Wolfe
Curt Dreyer
Executive Committee YIN
Cultural Committee
Carroll E. Palmer, Deputy Director, DNR
Wildlife Program: Bill Bradley
Gordon Lothson
In House Counsel

Legal Overview of Treaty Rights, Trust Responsibilities, and Reserved Rights:

8

While the doctrine of discovery is recognized by the United States Supreme Court (US 8 Wheat.] 543 [1823] discovery gave Europeans and the United States, as the discovering nations' "ultimate dominion" over the lands they discovered within aboriginal territory, this dominion remained "subject -- to the Indian right of occupancy." Under this doctrine, Indians were recognized as the "rightful occupants" of the land with legal claim to possession.

This right to use, occupy, and enjoy the land and water, came to be known as "Indian Title" or aboriginal title.

Aboriginal title encompasses aboriginal rights, such as, the right to fish and hunt. They are independent of aboriginal title to land, a treaty, or an act of congress.

The relationship between the U.S. Government and Indian tribes is also bound by treaties. The U.S. Constitution proclaims that "all treaties made, or which shall be made, under the authority of the United States shall be the Supreme Law of the Land; and the judges in every state shall be bound thereby, anything in the constitution or laws of any state to the contrary notwithstanding.

Treaties with Indian tribes are contemplated by this constitutional provision. Tribal rights secured by treaty are superior to the rights other citizens enjoy. Furthermore, and the preservation of treaty rights is the responsibility of the entire Federal government. The Bonneville Power Administration (BPA) has an affirmative legal duty to protect treaty rights.

The Supreme Court has expressly held that an Indian treaty is "not a grant of rights to the Indians, but a grant of rights from them." The purpose of an Indian treaty was not to give rights to the Indians, but to remove rights they had. Thus Indians have a great many rights in addition to those describes in treaties. In fact, any right not expressly extinguished by a treaty or federal statute is reserved to the tribe. This fundamental principle if Indian law is known as the "reserved rights" doctrine. (Pevar 1992)

The privilege of taking fish at all the usual and accustomed places, and the continuation of off-reservation hunting, fishing, gathering of roots and berries, and the pasturing of horses and cattle upon open and unclaimed lands, were considered as "privileges secured to Indians" and guaranteed in the Treaty of 1855 "Swindell 1942"

(YAKAMA NATION 1994)

In addition to respecting aboriginal rights and treaty reserved rights, the United States must honor its trust responsibilities to Indian tribes. This doctrine arose through the judicial interpretation and analysis, and has since been supplemented and reinforced by formal federal agency policy.

The trust responsibility doctrine can be traced to Cherokee Nation v. Georgia (30 U.S. [5 pet.] 1 [1831], in which the U.S. Supreme Court stated that Indian tribes were not foreign nations, but constituted "distinct political" communities "that more correctly were domestic --- nations whose "relation to the United States resembles that of a ward to his guardian." This language, first enunciated the doctrine of federal trusteeship in Indian

Affairs, a doctrine that continues to govern the relationship between tribes and the United States today.

Numerous court decisions have defined and described the trust responsibility as requiring the federal government to adhere to stringent fiduciary standards of conduct in matters related to Indian tribes. The trust responsibility applies to all federal agencies according to the principles of federal trust responsibility, government departments and agencies must utilize their authority to scrupulously safeguard that which is the subject matter of federal treaties with Indian tribes -- Indian Trusts assets. Trust assets are property in which Indians hold and maintain legal interests, and which are held in trust by the United States for tribes and individuals. These assets include, but are not limited to: land, water, fish, wildlife, plants, minerals -- essentially everything that is necessary to preserve and maintain a way of life.

Treaty

The religion of the YAKAMA, Columbia River Indians, is not a matter of certain days and set observations, but it is part of his every thought and daily life. Heritage is a precious possession of the Yakamas. It is a heritage so old that no one knows when it was actually born, only the Supreme being knows. It is a heritage of a religion that recognized a creator who gave life to the Earth and to its possessions. The Yakama people still practice the religious beliefs, traditions, and customs of their ancestors. Traditions that have been passed down through the countless generations, so that the Indian way of life will continue for our future

generations.

Over one hundred years ago treaty makers assembled in a cottonwood grove at Walla Walla, Washington and entered into the Treaty of 1855, which was ratified by the Senate, proclaimed by the President of the United States and became law in 1859.

The Yakamas paid a great price for the treaty: 10,828,800 acres, or 16,920 square miles of lands were ceded to the United States Government. However; the Yakamas stipulated in the treaty, reserved and guaranteed certain aboriginal rights which have been exercised by the Yakamas since time immemorial. These legally protected rights belong to the Yakamas and are regulated and enforced by the inherent sovereign powers of the YAKAMA INDIAN NATION. These powers are limited only by the Treaty of 1855 or specific acts of congress. This treaty has now matured into a heritage for the present and the future members of the YAKAMA INDIAN NATION.

The wise old chiefs with the inherent powers of gifted leaders, realized that the lives of the YAKAMA Indian people must and would change when the unwanted treaty was thrust upon them.

Cultural Resources

The definition of cultural resources is not limited by dictionary meaning or by governmental identification. The richness of the American Indian heritage has no price tag and cannot be put on paper, for it would make little sense without understanding the culture. The religion is the real life of the Yakama Indians and all the resources are identified clearly within their beliefs, traditions, customs, and legends. The most obvious cultural

resources are those identified by the first foods ceremonies: the water, salmon, venison, roots, and berries. Water is the defining element of the Indians existence. Unwritten laws are guarded by the elders, who possess the knowledge for cultural stability and hand the information of teachings, ceremonies, songs, and stories down to the younger generation in their native language. This tradition has been ongoing for centuries.

The elders are windows to the roots of their own identity, to the visions of earth and life that came before modern times. The sharing of knowledge between the elders and the young is what makes survival possible.

Mother Earth

Until the age of Enlightenment in the 1700s and the "Scientific Revolution" that accompanied it, the prevailing viewpoint among the peoples of the earth was that the planet itself was a living being. Most cultures shared this belief whether they were "Western" in orientation (Sumerians, Greeks, Romans) or whether they still lived within nature. They believed that the earth was a being with skin, soul, and organs as well as spirit. The skin was the soil; the soul was contained within the rocks and bones of the dead; the organs included rivers (bloodstream) and wind (the lungs) the spirit. Earth was alive. We lived upon it as millions of tiny micro-organisms live on human skin.

Most cultures believed that the earth was a female being -- the actual mother of life.

This is different from the "scientific revolution" paradigms that gave impetus to the idea of human superiority over animals and

nature implanted by the Judeo-Christian tradition.

The power to alter nature gave the western culture false proof of their superiority. Thus the patriarchal, hierarchical, western technological society that has raped the earth. Failing to see that planet as alive they have become free of moral and ethical constraints and have benefitted economically from exploiting resources at the earths expense.

All native groups literally speak of the planet as "mother" and they truly believe this. All life as we know it is nurtured at her breast.

We have germinated within her -- we are a part of her and we burst into life from her -- in the end we dissolve back into her to become new life. Every culture that maintains this attitude about Mother Earth also has restrictions against any individual owning, mining, or selling the land. Such ideas were unthinkable to native people until they met the invading western cultures.

Religion

One of the most fundamental precepts in the founding of our country is the Freedom of Religion. As citizens, Indians have an inherent right to the free exercise of their religion. That right is reaffirmed by the U.S. Constitution in the Bill of Rights as well as by many Federal Statutes, by State and Tribal law. The practice of traditional native Indian religions outside the Judeo-Christian mainstream or in combination with it, is further upheld in the 1978 Indian Religious Freedom Act. Unfortunately, in recent years there have been increasing incidents of infringement of the religious rights of American Indians. New barriers have been

raised against the pursuit of their traditional culture -- of which the religion is an integral part.

It is clear that these incidents did not result from a Government policy to abridge the religious freedom of Indians. Rather, events were allowed to occur because there was a lack of Government policy. Lack of knowledge, unawareness, insensitivity, and neglect are the keynotes of the Federal Government's interaction with the traditional Indian's religion and culture. This state of affairs is enhanced by the perception of many non-Indian officials that because Indian religious practices are different that their own -- that they somehow do not have the same status as a "real" religion. Yet the effect on the individual whose religious customs are violated or infringed is as intense as if he had been Protestant, Catholic, or Jewish.

The Columbia River Indians developed a unique culture from what Nature had in store for them. They were also referred to as being the Children of Nature. Their very life-style and religious ceremonies were developed from all or parts of the living things and gave salutation to the forces of Nature and its elements. They did this with spiritual feeling and thinking.

In a mysterious spiritual way, the Great Spirit communicated with the people. They understood that He made this beautiful and wonderful creation and He created them to enjoy His handiwork. Then they realized that their very existence depended upon everything in this world.

In trying to express their thankful appreciation for life int his world, they developed religious ceremonies to glorify the

Creator. In doing so, they used various things in their ceremonies such as: the feathers of the various birds and their parts, skins and pelts of the animals and their parts, various vegetation and different kinds of herbs they found that had healing properties, different kinds of wood, rocks, and things of the water such as fish, shells, pelts of otter, horns of deer and elk as well as claws, hooves and teeth. These things are an integral part of all the ceremonies and become an established belief.

My People studies the characteristics and traits of things mentioned, and these became texts similar to a verse of the bible from which a sermon is preached.

It has been taught by the Dreamers and the Prophets that religion is man's response to the Creator/God. There is a basic mystery in all religions and a sacred law that presents a culture of People. The Columbia River Indians are guided by the Natural Elements of the world, this religion has many symbolic aspects where He feels that there is a Supreme Being that designed all of nature for us to appreciate and express thanks through rituals with spiritual harmony in mind.

Through our religion the Creator allowed certain truths and revelations of spiritual power to be known by our ancestors. Certain people were chosen by the Supreme Being by opening their hearts to gain knowledge to know certain religious rites and ceremonial use of His sacred creations.

A few examples are the Dreamer Prophets; Smowhala of Priest Rapids Band, Xanapu of Kah-milt-pah Band whose teachings are now followed by the Rock Creek Band, Dreamer Meninoch of Skin-pum

Longhouse, and Jacob Hunt of Husum as one of the last Longhouse Prophets. The Dreamers and Prophets had walked the Columbia Basin and they received their teachings through Dreams and Revelations of how the religion is practiced today. The graves of our ancestors are testimony unto themselves of the religious beliefs, culture, traditions and the heritage they left behind for the future generations.

IN CONCLUSION: The YAKAMA NATION is not acting or pretending to develop an alibi to discourage industry for personal reason in a selfish manner.

The YAKAMA NATION wholeheartedly and truthfully is serious in opposing the planned Wind Farm (s) to be constructed on so called Columbia Hills.

YAKAMA NATION knows beforehand how the wind farm (s) is going to destroy the Cultural and Natural Resources that are irreplaceable under any mitigation plan without fully understanding the important value of religious and spiritual sites that are located in their original places since time immemorial.

YAKAMA NATION knows that the wind farm (s) will not be beneficial to YAKAMA NATION in any way at all.

YAKAMA NATION knows that the wind farm (s) has no proof of why wind farm (s) should be justified to be located at so called Columbia Hills and under whose demand it is mandatory.

YAKAMA NATION, its members, all the resources is first in time, first in right, versus any new planned projects.

DATE: 4/3/94

TO: William Bradley, Ph.D.

FROM: Gordon A, Lothson, Ph.D.
Archaeologist-Geomorphologist
Special Projects Manager

SUBJECT: The Traditional Use and Archaeological Potential Extant Within the Boundaries of the Columbia Hills Wind Farm Project--Management Protocol.

As per your request, I have pulled together a specific management protocol that addresses the questions posited in my earlier evaluation of the archaeological reports written for the Columbia Hills Wind Farm site by Historical Research Associates Inc. (HRA) and Eastern Washington University (EWU). It assumes the worst case scenario that the project as described will be constructed. This protocol does take issue with the recommended procedures written for the archaeological properties set forth in the HRA and EWU documents. We do not agree with the conclusions reached in those documents and also feel that both HRA and EWU have failed in their application of the National Register of Historic Places (NRHP) criteria--specifically 36 CFR 60.4; criteria c. and d. We recommend to you and the tribal council the following: 9

1. The conclusions reached by HRA and EWU should be discarded and reevaluated in terms of both criteria c. and d. (see HRA documentation pp. 4-3, 4-4 for criteria).

2. Traditional use sites and their significance should be studied and evaluated by the tribal cultural resource program and not an outside consulting entity. Only the tribal cultural resource program have the personnel who speak the language, understand traditional land use and the significance of continued land use, and most important, the significance of the area as a place of religious and economic importance. 10

3. All of the archaeological sites found by HRA and EWU should be surface collected so as to minimize secondary impact caused by the construction activities. This surface collection should be a controlled collection so that the materials can be replaced on the landscape if the wind farms are abandoned. HRA and EWU should undertake this surface collection as they know the location of the archaeological sites. The tribal archaeologist or designated representative should oversee and monitor these collection activities. Surface features should be mapped in some detail and the information recorded in by special drawings, notes and photographs. **TO DATE THIS HAS NOT BEEN DONE!!!** 11

4. Areas impacted by proposed construction should be shovel 12

tested to make certain that archaeological sites do not exist buried beneath the surface. Areas of high potential should be shovel tested at a higher frequency than areas of low potential--the frequency of shovel testing to be determined by the consulting archaeologists in consultation with the tribal archaeologist or his designated representative.

5. Additional special studies of man land relationships, particularly spatial relationships of the various structural and physical features identified by the consulting archaeologists should be undertaken by HRA and EWU. This spatial archaeological analysis should be extensive and should explore spatial relationship between the physical features. The purpose of such analysis is to spatially determine the physical relationships between these features, determine patterns of use and to facilitate data collection for historic district evaluation. This pattern of use and the concept of the HISTORIC DISTRICT (NRHP criteria c.) were not addressed properly in the HRA and EWU documentation. 13

6. HRA and EWU should have nominated the Columbia Hills location to the National Register as an National Historic District (NHD). IT IS NOT HRA OR EWU PLACE TO DECIDE WHAT IS or WHAT IS NOT, A NATIONAL HISTORIC SITE. WHEN IN DOUBT THE SITE OR DISTRICT SHOULD BE NOMINATED AND THE DECISION PLACED IN THE HANDS OF THE STATE ARCHAEOLOGIST AND THE ADVISORY COUNCIL OF HISTORIC PRESERVATION. There is ample evidence for such a desigation. Both HRA and EWU were in error on two counts: 1. the Columbia Hills area easily qualifies as a NHD given the spatial and site data presented in the HRA and EWU documents and 2. advise should have been sought from the state archaeologist as to the qualification of the area or sites within the area to the NRHP. 14

7. Lastly, a field monitor from either HRA or EWU should be on site during the initial roadway and turbine pad construction. The two contracting agents should also fund a tribal monitor who would be on site to facilitate the protection of traditional use areas and archaeological sites. This later person should be from the cultural program or a designated person from tribe who has some archaeological training. 15

These are the minimum things that should be done from a technical archaeological perspective. The cultural program and its director Mr. Johnson Meninick and Mr. Fred Ike Sr. most certainly will have others to add. My feeling on the project from purely an archaeological-traditional use perspective, is that the project is a bad idea. I know full well that there are other factors that drive final decisions and one has to balance off one advantage over another-often one cultural resource against 16

another. Thankfully this is not my decision and the above remarks are to be considered a response to your request for additional what if data.

If I can help you, Johnson or Fred with any other information please feel free to ask.

cc: Johnson Meninick
Fred Ike Sr.
Reverend Russell Billy
Greg C. Cleveland

Responses to April 11, 1995 Letter from the Confederated Tribes and Bands of the Yakama Indian Nation

(Including Two Attachments Entitled: 1)Legal Overview of Treaty Rights, Trust Responsibilities, and Reserved Rights; and 2) Memorandum from Gordon A. Lothson, Ph.D to William Bradley, Ph.D.)

1. See General Response No. 1.

2. See General Response No. 3.

3. Comments noted. The draft EIS in Section 2.5.4.1 discusses expected impacts to golden eagles, bald eagles, peregrine falcons, and migratory birds. The draft EIS in Section 2.4.4.1 discusses impacts to other wildlife.

4. Construction and operation of the windplant will avoid impacts to all but two archaeological sites that might be eligible for listing in the National Register of Historic Places. Although the potential National Register eligibility of the stone cairns is unknown, construction and operation of the windplant will also avoid them. None of the isolated artifacts were believed to be eligible for the National Register and will not be avoided by Project construction.

5. See General Response No. 5.

6. The opposition of the Yakama elders in the area of the proposed Project is noted.

7. See General Response No. 6, which summarizes the opportunities that the County and BPA have provided for the Yakama Indian Nation and the elders to voice their concerns about the projects and their potential impacts. Appendix B to this document includes meeting notes from the April 26, 1995 meeting with Yakama representatives on the Proposed Project site.

8. The lead agencies do not respond to the legal overview presented by the Yakama Indian Nation as it is outside the purview of NEPA or SEPA. See General Response No. 7.

9. The County and BPA have directed the cultural resources consultant to consider whether the archaeological sites that have been determined National Register-eligible would appropriately constitute an eligible Multiple Property Listing. Juniper Point would be part of such a determination as a traditional cultural property (see also General Response No. 5).

10. The County and BPA have requested Yakama assistance in describing the boundaries, physical nature, and cultural significance of Juniper Point as part of the consultation process under Section 106 of the Natural Historic Preservation Act. The Yakama Indian Nation Culture Program has refused to negotiate a MOA with BPA, the County, and the SHPO because of their opposition to the projects (see Appendix B).

11. National Register-eligible archaeological sites will be flagged as areas to be avoided by construction activities. Under the environmental monitoring plan for construction (see Part 2 of this document), an environmental monitor and a Yakama representative would monitor the avoidance of these cultural resources. The lead agencies believe this method of avoidance will have fewer impacts to cultural resources than controlled surface collection of all eligible and potentially eligible sites.

12. The Study Plan provided for clearing vegetation in areas where less than 50 percent of the surface is visible, from 1-m^2 plots with hand trowels at 100- to 150-m intervals. Crew members also deviated somewhat from survey transects in low visibility areas to inspect drainage cutbanks, disturbed areas, and other surface exposures. The Study Plan also provided for excavating 30-cm-diameter shovel probes at 50- to 100-m intervals along survey transects in areas characterized by significant deposits of loess, alluvium, or both.

13. The County and BPA have directed the cultural resource consultant to prepare a determination of eligibility form to recognize archaeological sites and the Juniper Point traditional cultural property. Assembling the context documentation for a Multiple Property determination will entail evaluating the environmental relationships of these sites. The form will also discuss the four National Register criteria. See General Response No. 5 and Part 3 of this document.

14. The County and BPA point out that according to cultural resources regulations and procedures, it is appropriate for the consultant to make recommendations regarding National Register eligibility. The SHPO reviews these recommendations and determines whether or not it concurs with the findings. As discussed in the responses to General Response No. 5 and other specific comments, consultation with the SHPO staff indicated that the eligible archaeological resources and traditional cultural property at Juniper Point may be eligible for listing in the National Register of Historic Places as a Multiple Property Listing. Multiple Property Listings are designed to nominate groups of related resources in an archaeologically or culturally common area. A Multiple Listing is similar to a Historic District but has the advantage that boundaries need not be specifically defined, and resources identified in later surveys can be included. The County will direct its cultural resource consultant use data developed for the cultural resources assessment to prepare a Multiple Property Documentation Form for the eligible archaeological sites and for the Juniper Point traditional cultural property. This National Register form will identify the property types of which examples have been inventoried in the Project vicinity.

15. The EIS identifies monitoring of National Register-eligible cultural resources during Project construction by a tribal archaeologist or representative as a mitigation measure (see Part 3 of this document) and as part of the Preferred Alternative described in Part 2 of this document.

16. Comments noted.

Cellular One Center
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Mobile (503) 780-7848
Fax (503-248-7488

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March 16, 1995

Curt Dreyer, Klickitat County Planning Director
Klickitat County Planning Department
228 West Main St., Room 150
Goldendale, WA 98620

Dear Mr. Dreyer:

RE: Washington Windplant #1 Project- Draft EIS

Enclosed is a copy of a memorandum from Carol Friz, an RF Engineer for McCaw Cellular Communications, Inc. in Portland, Oregon. We are very concerned that the proposed development by Kenetech may interfere with our microwave communications in this area.

As noted in the memorandum, the wind generators may block established microwave paths from our sites at Haystack and Luna. Based on the information available, we are very concerned about the impact to our interstate communications. Since this could potentially jeopardize our communications throughout the Columbia River gorge, and, until resolved, we must go on record with limited opposition to the phase of the project in the area shown on the enclosed map. 1

We will appear at the hearing on April 5 to explain our concerns. I am certain we can work out the issues with Kenetech and have no desire to interfere with their project. 2

Please call me if you have questions.

Very truly yours,

Ron Fowler, Real Estate Manager

Memorandum for Record

From: Carol Friz

Date: March 7, 1995

Subject: Impact of Proposed Kenetech Washington Windplant #1 Development on Columbia River Gorge Microwave Sites

---

I have reviewed the Draft Environmental Impact Statement (EIS) for the Washington Windplant #1 proposed by Kenetech Windpower, Inc., dated February 1995. Based on the information contained in the EIS, there is a real possibility for interference with our Haystack - Luna microwave path.

Attached is a copy of the path profile for the 18.6 mile Haystack - Luna path. As can be noted on this profile, there is an area near the Luna end where the terrain is quite flat and very near to the centerline of this path before it drops off severely a couple miles west of Luna.

The second attachment is a copy of the 7.5 minute map showing our Luna site and the path centerline toward Haystack. I've made some rough sketches of the proposed turbine strings per the EIS. Turbine strings EE and CC are of direct concern, and there is some possibility that strings DD and Z may impact the path, depending on their exact location. **3**

Although Table 2.12.1 in the EIS shows interference candidates as Haystack and Luna, on paths toward Roosevelt (Arlington) and Goldendale, our Haystack - Arlington path runs south of the proposed development and, based on the information in the EIS, should not be impacted by this development. A possible future Haystack - Goldendale path should not be impacted since both sites are west of Highway 97 while the proposed development is east. I am unaware of any present or planned paths from Luna, except that existing to Haystack.

Using the industry standard clearance criteria of full first Fresnel zone clearance at K=4/3, where K = Effective Earth Radius Factor, our required clearance at each of the points where the proposed turbine strings cross the path is calculated in the following table. This clearance is required in a concentric circle around the path centerline, that is, above, below, and to each side. **4**

Turbine String	Approx. Distance from Luna (feet)	First Fresnel Zone Radius (feet)	Earth Bulge at K=4/3 (feet)	Required Clearance* (feet)
EE & DD	2800	36.6	4.8	41.4
CC	5000	48.4	8.4	56.8
Z	10,000	66.4	15.8	82.2

* Technically, this figure is the required vertical clearance since earth bulge is a vertical phenomenon. Horizontal clearance would equal the First Fresnel Zone Radius.

Since the EIS did not contain exact coordinates for the proposed turbine strings, I have extracted the locations as well as possible. Thus, some of the above requirements may increase or decrease when exact locations are known.

In summary, the proposed windplant has the potential to severely impact our existing microwave network in the Gorge. We will need to ensure that the turbine strings are located so as to minimize or negate this impact.

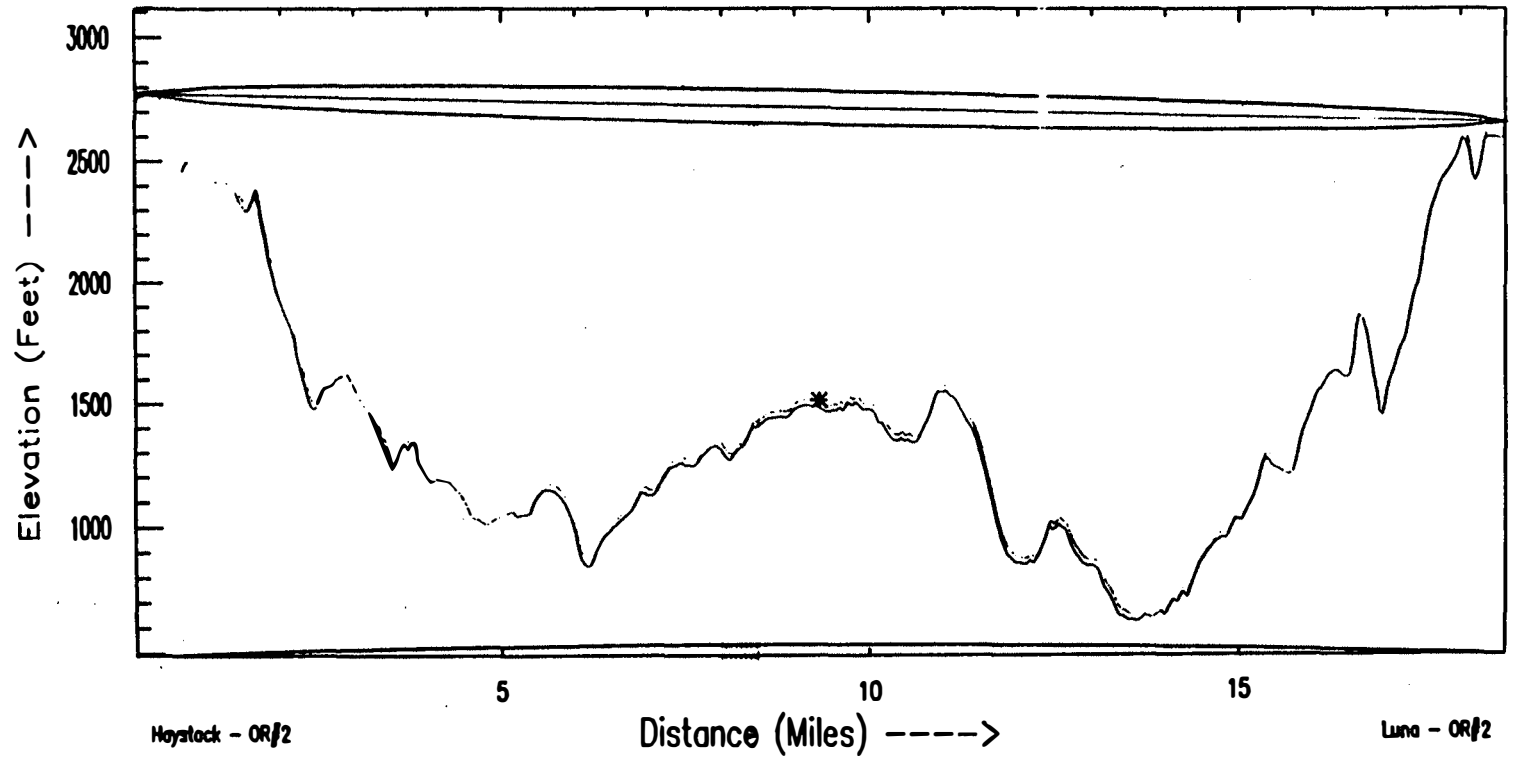
Any questions, I can be reached on 503-274-6163.

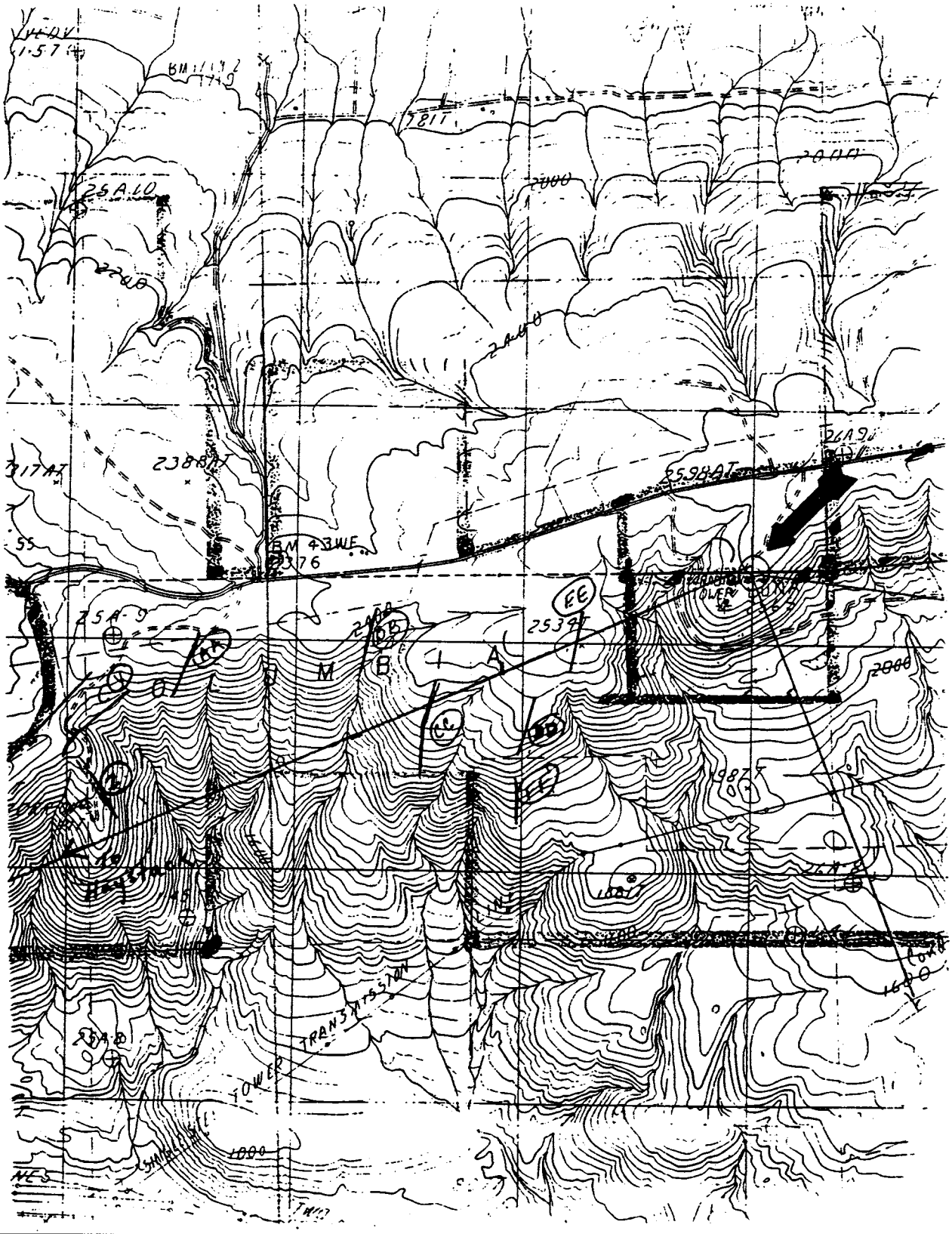
Attachments (2)

cc: Ed Menteer
Ken Seymour
Norm Davis
Ron Fowler ✓
Bob Hansen
Mike Heinig

Oregon District CFRIZ%	Microwave Designer V406	03/06/95 09:55:15	LCC Incorporated ANET v1.6

Haystock				DIST	18.60 Miles	*	Reflection Point
LAT	045 40 47 N	LAT	045 46 49 N	FREQ	5.00 GHz	——	Fresnel Zone
LNG	120 54 47 W	LNG	120 33 22 W	K	1.33	- -	Line of Sight
TOWER	60.00 Ft	TOWER	60.00 Ft	TREE HT	20.00 Ft	——	Vegetation
AMSL	2716.94 Ft	AMSL	2598.81 Ft	FRES ZONE	1.00	——	Terrain Profile
AZM	67.96 ° N	AZM	247.96 ° N	FS LOSS	135.97 dB	——	Earth Curvature




BM 1192
5811
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25A.LO
2700
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238AT
559AT
BM 43WE
3376
25A-9
25397
EE
2000
TRANSMISSION
TOWER
1000
1600

Responses to March 16, 1995 Letter from Cellular One

1. See response to comment no. 3.

2. Cellular One did not provide comments at the April 5, 1995 hearing.

3. Part 3 of this document under "2.12, Public Services and Utilities" makes the following modifications to the draft EIS to indicate that there is a Cellular One path between the repeater stations at Luna Point and Haystack Butte and to identify the turbine strings that potentially cross this Cellular One pathway:

   - Table 2.12.1 is modified to add the Luna Point, Haystack Butte Cellular One Pathway.
   - Table 2.12.2 is modified to indicate that turbine strings CC, DD, EE, and Z may potentially affect the Cellular One pathway.

4. Part 3 of this document under "2.12, Public Services and Utilities" modifies the draft EIS's discussion of impacts to describe the types of clearances that might be necessary where turbine strings intersect Cellular One signal paths. Part 3 also modifies the draft EIS's discussions of mitigation to identify Turbine Strings, M, G, I, K, Z, CC, DD, EE, NN, and OO as potentially crossing the Cellular One signal path and to indicate that final design should incorporate the required clearances between turbines and microwave signals using methods generally accepted by the communications industry.

CENTRAL CASCADES ALLIANCE
1208 Snowden Road
White Salmon, WA 98672

April 17, 1995

Mr. Curt Dreyer
Klickitat County Planning Director
228 West Main St., Room 150
Goldendale, WA 98620

Via Fax: 509-773-6206

Dear Mr. Dreyer:

This letter serves as the official comments of the Central Cascades Alliance (CCA) on the joint NEPA/SEPA Draft Environmental Impact Statement (DEIS) for the Washington Windplant #1 (the proposed Kenetech facility in the Columbia Hills).

In general, regarding wind power development in the Gorge, our group's concern focuses on impacts to wildlife, in particular raptors and other avian species and the western gray squirrel. 1

Before getting into specifics, allow me to put our region's situation regarding wind power development into some context. CCA believes that there are workable solutions regarding wind power development in Klickitat County IF the county assumes a very active role. The county has an opportunity to take a real leadership position on wind power development in our region by asserting itself as the responsible official that is seeing that wind power, if developed, is developed only very slowly and carefully, with thorough monitoring of wildlife impacts and adequate mitigation. In short, it is the county officials' responsibility to not allow its residents to be treated like second-class citizens. Let me explain. 2

The following is from a Boston Globe article, dated January 2, 1995: "A Kenetech review of promising sites in the Northeast turned up several that didn't materialize, in the Berkshires and Cape Cod, and the Hamptons region of Long Island. 'They're all impossible,' says Kenetech vice president Hap Ellis, noting that all three regions are both scenic and home to powerful people. 'I can see it now, Billy Joel and Christie Brinkley leading some kind of protest concert against windmills.'"

Why is wind power development okay in Klickitat County, but not in the Berkshires, Cap Cod and the Hamptons?

* NOT because these areas have high raptor numbers, like we do here;

* NOT because these areas are potentially important migratory bird routes, like we may be here;

* NOT because these areas have wide open undeveloped land that is essential for wildlife, like we have here;

No, the reason is simple. It's because these areas are full of people who have political clout, and Kenetech believes that Klickitat County residents don't have this clout. 2

There's another aspect to this. That is, the concessions given to other communities with wind power proposals far exceed anything Kenetech has offered here, both in money for mitigation, future wildlife monitoring, etc., and in agreed-upon limits to growth in the near term. 3

The following again from the Boston Globe article of January 2, 1995: "the company [Kenetech] will spend much more to honor an agreement with environmental groups that includes a $300,000 contribution to land preservation in western Maine as well as $50,000 toward the cost of a statewide study on appropriate sites for wind farms." All this at a site where the Maine Audubon Society concedes that "they don't expect bird deaths to be a major issue." In addition, the article continues: "Kenetech has sought to win over critics by offering to scale back the first phase of the wind farm to 100 turbines." We've received no such offer here, though I've been working hard to secure one.

CCA doesn't necessarily want to kill all wind power proposals, we just want to see that any development does not negatively impact wildlife populations in our region. The proposed Kenetech site poses some serious concerns regarding particular species, including: the peregrine falcon, which feeds on the site; the bald eagle, which is now known to regularly fly through the eastern end of the site en route between roosts (and, I understand the U.S. Fish & Wildlife Service (USFWS) just confirmed, has a roost on the site); golden eagle and several other raptor species, which nest on or near the site; and the western grey squirrel, a state-listed species found in the oak/pine habitat on the site. 4

Following are our specific comments:

1. Only one year (and not even a complete year) of wildlife surveys were conducted. AS POPULATIONS AND MIGRATION ROUTES/PATTERNS VARY GREATLY FROM YEAR TO YEAR, THERE IS NO WAY PREDICTIONS OR MANAGEMENT DECISIONS CAN BE ACCURATELY MADE FROM ONLY ONE YEAR OF DATA. Researchers generally need three to five years to determine accurate TRENDS. In short, the argument can certainly be made that there are inadequate data upon which to make a decision regarding wildife impacts at this time. 5

2. This project proposes to remove up to 22 acres of Oregon white oak habitat. This is totally unacceptable. This habitat, home to the state-listed western grey squirrel, is severely threatened in Washington. There is no mitigation mentioned in the DEIS except the feeble: "We will try to stay away from oak woodlands." We want assurance that development -- turbines, roads, AND powerlines -- will stay OUT of the oak woodlands. Any that must be disturbed should be offset by purchasing and protecting other oak woodlands and/or planting oaks on the site. The DEIS mentions providing a 400-foot buffer for any squirrel nest sites 6

from May to September. This is inadequate. The squirrels nest from late December to September. In addition, we want at least 60% canopy in the stand around the nest sites, not just 50%.

3. The DEIS claims that the habitat on the site would continue to deteriorate anyway without the wind power project because of continued grazing. But the grazing is going to continue after wind power development, so the turbines are then an additional deterioration. In addition, not all the habitat proposed to be disturbed is currently being grazed. 7

4. All roads should be gated to discourage vehicular access, which has negative impacts on wildlife. 8

5. There should be large buffers between riparian areas and roads and turbines to help protect wildlife. 9

6. There should be large buffers around talus slopes, cliffs and rock outcroppings to help protect raptors. 10

7. Another rare species twice spotted on the site is the long-billed curlew. DEIS said: "Project site receives only occasional use." At least two wildlife biologists claim it may be a nest site -- needs attention. 11

8. 115 western bluebirds were counted on the site (a Washington State Priority Habitat Species). How will removal of 22 acres of prime habitat affect numbers? 12

9. DEIS admits that 6 to 20 raptors could die a year from the turbines. How was this arrived upon? How many raptor deaths are too many? How many deaths will affect regional populations? 13

10. Ridiculous peregrine falcon statement: "If one of these peregrines were to strike a turbine, it would be unlikely to affect the viability of the population of the Columbia Gorge Management Unit." THERE ARE ONLY SEVEN PAIRS IN THE WHOLE GORGE. 14

11. We wish to be assured that continued access to the site is guaranteed to Native Americans who use it to collect native flora. 15

12. There should be at least a one-mile buffer around the bald eagle roost, and a large buffer around their flyway between roosts. 16

13. We urge that as few roads as possible be built and maintained, and that switchbacks be used as little as possible. 17

14. We wish to get a commitment from Kenetech to conduct ongoing monitoring of bird kills and other general wildlife research, as determined by wildlife officials, after the facility is built. 18

15. We are happy to learn that Kenetech plans to use tubular towers instead of lattice-style towers, in an effort to discourage avian perching at the site. 19

16. We urge Kenetech to stay out of the eastern end of the site, at least in the near term, but perhaps permanently, as this is where the bald eagle roost and flyway occurs. 20

Finally, the main point I wish to instill in the decision-makers' minds is to assure that this development, if allowed at this time, is allowed only in a very slow, well-thought-out manner. The wind is not going to go away. Making developers go slowly and carefully will not scare them off to other areas. The wind is here. 21

In addition, wind is likely to expand. The U.S. Department of Energy predicts that wind power will expand by 600 percent over the next 15 years. The Boston Globe article of January 2, 1995, states: "the world is on the verge of a wind-energy boom, says Christopher Flavin, co-author of 'Power Surge: Guide to the Comming Energy Revolution.' Worldwide, a record 600 megawatts of wind power was harnessed last year -- enough to power 250,000 households -- and Kenetech has proposed 1,800 megawatts in this country alone." So, again, strict language in the Conditional Use Permit won't scare them away. 22

Following are three reasons to make the developers go slowly:

1. To allow time for researchers to develop technological fixes to help the birds better "see" the blades and/or avoid hitting them. Kenetech is working on this and has made some progress. An article in the March/April issue of EPRI Journal states: "EPRI-sponsored researchers have developed a technology to help prevent birds from flying into structures that can injure or kill them. The device, which emits a pattern of radio-frequency signals that are imperceptible to human beings, has been tested successfully in the laboratory. Now the researchers are preparing to test it in the field." Other efforts are in the works. The point here is that if we proceed slowly, we're likely to get less harmful turbines in our county. 23

2. It would allow the monitoring of bird kills and impacts to wildlife populations to be tabulated after a limited amount of turbines were in place. There will be bird kills, but if we have only a small-scale facility we can then determine how excessive the kills are and will be prior to building a huge facility that could decimate raptor populations in our region. 24

3. It would allow time for wildlife officials to conduct a major comprehensive, cumulative impacts study for the whole of the Gorge (an area likely to see more and more wind power proposals -- at least four are in the works right now) regarding avian species' (particularly raptors) numbers, migration patterns, nesting and roosting sites, etc., and projections of the likely impacts from increased wind turbines in the region. 25

Time is the critical issue here. As you know, the Wasco County, Oregon, facility (proposed by Zond across the Columbia River) has been put on hold for a year in order to collect more data on wildlife before having a hearing in which the county would approve or deny that site. Wildlife biologists have told me that the Columbia Hills area, in particular the

Kenetech site, may be of even greater importance to raptors than the Wasco County Sevenmile Hill site.

In addition, in a Bangor (Maine) Daily News article, dated November 21, 1994, Stephen Wright, chairman of the Maine Land Use Regulation Commission (the body entrusted with making the decision regarding wind power development in that state), said, "I would personally be more comfortable with a small demonstration (of the technology) prior to the start of a large-scale project." In essence, this is how CCA urges Klickitat County to proceed.

In conclusion, as we have not yet seen the official comments of either the Washington Department of Fish & Wildlife or the USFWS, CCA reserves comment on whether or not this site is considered a unique raptor or other wildlife area. If these agencies determine that the site IS a unique raptor area, and that any number of turbines would harm populations, then the county should NOT approve the facility at this time. Likewise, if the agencies conclude that data are inadequate to determine the uniqueness of the site, the county should instruct the developer to gather more data. **26**

Finally, if the facility is approved, CCA urges Klickitat County to include very strict and specific language in its Conditional-Use Permit, including the following:

1. That the facility be kept small-scale in the near term (that being 150 turbines maximum for at least two years); **27**

2. That money be provided by the developer to adequately monitor bird kills and impact to populations during this time. And that independent assessments be made to determine if populations are being harmed; **28**

3. That public hearings be conducted on at least an annual basis to reassess the situation; **29**

4. That further development will be put on hold indefinitely if it's determined that there are bird or other wildlife problems on the site. **30**

Again, this is an opportunity for Klickitat County to assume a leadership role on this issue. Without stringent requirements of this nature, CCA will likely oppose the project outright and join efforts to defeat it.

Thank you for the opportunity to comment.

Sincerely,

Jay Letto

Jay Letto
President
Central Cascades Alliance
1208 Snowden Road
White Salmon, WA 98672
509-493-4428

Responses to April 17, 1995 Letter from the Central Cascades Alliance

1. Comment noted.

2. See General Response No. 4. The lead agencies have identified a Preferred Alternative in Part 2 of this document that places certain restrictions on the development of the Project until surveys to route the powerline and avoid Priority Habitats where feasible and until further monitoring of bald eagle and peregrine falcon use in the eastern portion of the Project site is conducted. The Preferred Alternative also incorporates several measures to avoid, reduce, and mitigate adverse environmental impacts (see Part 2 of this document).

   CCA's comments on the relative political clout of citizens within Klickitat County are noted. The purpose of this EIS is to evaluate the potential adverse impacts associated with the Applicant's proposal and to identify potential mitigation measures that, if implemented, would avoid, reduce, and mitigate impacts. The Klickitat County Board of Adjustment, whose members are also citizens of Klickitat County, will then use this information to determine whether to issue and how to condition permits and approvals for the proposed Project.

3. Comments noted. The Preferred Alternative described in Part 2 of this document incorporates several mitigation measures in response to comments and would also restrict initial development to the west portion of the site. Although this is not a restriction on the absolute number of turbines, it would serve to limit the extent of impacts until additional information can be developed on routing the powerline and on potential impacts to bald eagle and peregrine falcon.

4. Bald eagle use patterns were identified during the field study conducted for the Project and described in the draft EIS, Section 2.5.3.1, pages 2-47 and 2-48, and in Figures 2.5.2 and 2.5.3. Peregrine falcon use was described in Section 2.5.2.1 of the draft EIS. The potential impacts to bald eagle and peregrine falcon are currently being addressed through formal Section 7(c) Endangered Species Act consultation with the USFWS.

5. See General Response No. 10 as well as response no. 4 to the April 17, 1995 WDFW letter.

6. See General Response No. 8 and Response No. 21a to the April 17, 1995 WDFW letter.

7. The discussions of No Action under each element of the environment have been modified, as appropriate, to clarify that grazing and agricultural uses and associated environmental degradation would occur under No Action and under the Proposed Action and alternatives (see Part 3 of this document.)

8. Comment noted. Gating access roads is included as part of the Applicant's proposal as discussed in Section 1.4.5.2 of the draft EIS.

9. Impacts to riparian habitat were addressed in Section 2.3.4 and Table 2.3.5 of the draft EIS. No riparian habitat is expected to be affected as indicated in Table 2.3.5. Even though

there would not be any direct impacts to riparian areas, mitigation measures outlined in Section 2.2.3 (Water) and Section 2.3.4 (Plants) of the draft EIS would be applied during construction to control erosion and sedimentation and protect riparian areas, water bodies, and wetlands. Also see response to comment no. 21e of the April 17, 1995 WDFW letter.

10. See the response to comments 21a and 21f of the April 17, 1995 WDFW letter. The majority of the talus slopes, cliffs, and rock outcroppings are located south of the closest area proposed to be developed. Construction or operation of the Project would not require access to these areas.

11. Long-billed curlews were observed only twice (two observations in 85 person-days of field surveys), once during winter and once during spring. They were not observed during the spring breeding survey. While this species may be present, the level of observations indicates that the Project site is not a major breeding area.

12. Western bluebirds are widely distributed in Klickitat County, and the modification of 22 acres of oak/pine woodlands represents a small portion of the total range occupied by bluebirds. This modification of habitat could result in a slight reduction in the breeding population of bluebirds using the Project area, with a shift made to other oak/pine woodlands in the vicinity. See Section 2.5.4.1, page 2-55 of the draft EIS for a discussion of impacts.

13. The question of raptor deaths will be considered as part of the permitting and approval decisions being made by Klickitat County and BPA. As described in the draft EIS (Section 2.5.4.1), regional declines in raptor populations are not expected to result from the Proposed Action or alternatives because major migratory movements were not identified over the site. Mortality estimates were made by multiplying the widest mortality range cited in Section 5.2 of Appendix D of the Avian Technical Report (1.7 to 5.8 per 100 turbines) by the number of turbines (in units of one hundred). Using the highest per-turbine mortality rates reported in California, the Project is projected to potentially cause up to 20 raptor mortalities per year. This is expected to be a high estimate because of the level of raptor use found on the site and because of the designs (i.e., use of tubular towers) incorporated into the Proposal. Most raptor deaths would be composed of red-tailed hawks, rough-legged hawks, and American kestrels. The overall population levels of this species would not be significantly affected by this level of mortality.

14. The USFWS recovery plan for the peregrine falcon identifies that 3 pairs is a sufficient number of peregrine falcons to maintain a viable population in the Columbia Gorge Management Unit. Between 5 and 7 pairs of peregrine falcons currently reside in the Columbia River Gorge and, based on field studies for this project, no more than one pair would be at risk from Proposed Action or alternatives. Therefore, the peregrine falcon population of the Columbia Gorge is expected to remain viable. The USFWS, under Section 7 of the Endangered Species Act, will be making a final determination on this issue.

    The potential impacts to peregrine falcons and other listed threatened and endangered species are currently being addressed through formal Section 7(c) Endangered Species Act consultation with the USFWS.

15. Comment noted. See General Response No. 7.

16. Buffers that have been defined for bald eagle roost sites are less than 1 mile. The Pacific States Recovery Plan for the bald eagle recommends buffers of 1,300 feet around screened roosts and 2,600 feet around visible roosts (USFWS 1986). Please see response to the WDFW letter, comments no. 9 and no. 10.

17. Comments noted. As discussed in Section 1.4.2.5 of the draft EIS, of the 25.3 km (15.7) miles of primary access road (roads leading to the turbine strings), 6 km (3.6 miles) would involve upgrading existing roads.

18. Support for a monitoring program is noted. Monitoring is identified as a potential mitigation strategy on page 2-58 of the draft EIS. In addition, the Preferred Alternative described in Part 2 of this document includes additional pre-construction monitoring and operations monitoring of avian impacts.

19. Comment noted.

20. The lead agencies have identified a Preferred Alternative that would restrict initial development to the west portion of the site, require a powerline routing study prior to development in the central portion of the site, and prohibit development in the eastern end of the site until an additional season of winter monitoring is conducted to better determine the flyways for bald eagle and an additional year of study is conducted on peregrine falcon use in the eastern end of the site (see Part 2 of this document).

21. Comment noted. See Part 2 of this document for a description of the Preferred Alternative identified by the lead agencies.

22. Comments noted.

23. The comment in support of waiting until technological solutions to raptor mortality are found is noted. Current research results have been applied to the design of the Project. Also see General Response No. 4 and response to comment no. 15 to the WDFW letter.

24. See Part 2 of this document, which describes phasing and monitoring included in the Preferred Alternative.

25. See General Response No. 2.

26. See General Responses No. 10 and No. 11. Also see WDFW letter and responses.

27. As described in Part 2 of this document, the lead agencies have identified a Preferred Alternative that would restrict initial development to the western portion of the site and that would allow development in the central portion following a powerline routing study intended to avoid Priority Habitats where reasonably feasible. The lead agencies have identified the Preferred Alternative based on the environmental review included in the draft EIS and on comments received. Several commentors suggested putting limits on the initial phase of the proposed Project in order to have the opportunity to monitor

environmental impacts prior to approving the entire proposal. Some commentors suggested a limit on the MW that could initially be installed; other commentors, such as CCA, suggested a limit on the total number of turbines. Based on their review of environmental information on the proposed Project, the lead agencies believe that limiting the geographical extent of initial Project development would be more appropriate and would be more likely to reduce adverse environmental impacts due to the bald eagle flight paths and occasional peregrine falcon use on the eastern end of the site. The Preferred Alternative would restrict development in the eastern portion of the site pending additional study of bald eagle and peregrine falcon use.

28. See response to comment no. 24.

29. As described in Part 2 of this document, under the Preferred Alternative a supplemental EIS would be required prior to issuing building permits for development on the eastern portion of the site if the additional monitoring conducted in that area reveals significant new information about the level of impacts that would be expected. If a supplemental EIS proves to be required, hearings would be conducted.

30. Comment noted. See Part 2 of this document on the Preferred Alternative.

COLUMBIA GORGE AUDUBON SOCIETY

Rec'd 4/5/95 KPE

March 20, 1995

Jan Beyea, Chief Scientist
National Audubon Society
700 Broadway
New York, NY 10003

Dear Jan:

The construction of hydropower dams on the Columbia River system without regard to the consequences to the anadromous fish runs has been a costly but valuable lesson for us in the Northwest. The minimal expense of building fish ladders was not considered important then, and now the runs are extinct or on the edge of extinction. There is no mitigation possible for the extinction of these salmon runs.

Wind power companies now propose to harvest the wind along the Columbia River with machines that kill birds. We know of four proponents that control about 15,000 acres on which about 1,000 wind machines would be placed. Considering the amount of land involved it is likely that the plan is to add many more machines to those already proposed. We have heard that other wind farms may soon be proposed for the Walla Walla area. It is not unreasonable to conclude due to the high winds blowing along the bluffs overlooking the river, that wind farms could eventually extend from here up the river all the way to Walla Walla a distance of approximately 140 miles. If this is allowed to occur without pause, thorough discussion, and a search for real solutions, including technical solutions, to the wind power-avian problem, the birds local to the area and migrating through may go the way of the salmon. 1

The location of the proposed Kenetech/C.A.R.E.S. wind farms along the Columbia Hills overlooking the Columbia River is an area crucial to birds. The Columbia River is the only river in the western United States flowing through the Cascade Mountain Range, and is probably the most significant east-west migratory route for avian species in the west. The Deschutes and John Day River canyons enter the Columbia River Gorge from the Oregon side only 15 miles from each other, and flank the proposed project site. On the Washington side there is a low pass just west of the site and Rock Creek Canyon is just a few miles to the east. These lower elevation side 2

P.O. Box 512, Hood River, Oregon 97031

canyons and pass add a north-south migratory crossroads to an already significant avian area. No cumulative impact is beingconsideredfor all the wind farms now being proposed here.

It is distressing - but not surprising - to us that the E.I.S. authors chose to apply a denigrating spin on the significance of these migratory routes by simply claiming they are not "migratory corridors", and do not funnel directly through the site. (Technical Report: Avian Use, "Flight Patterns," p.4-26). Since the Gorge is only about three miles wide here, we wonder how narrow a migratory route must be to be termed a corridor? **2**

Recently David Anderson, a Washington Department of Fish and Wildlife non-game wildlife biologist, met with our board, and he advised us of his extensive avian concerns with the proposed Kenetech/C.A.R.E.S. wind farms. Mr. Anderson informed us that the project site, at a minimum, involves a bald eagle communal roost site, a golden eagle nest site, two golden eagle territorial ranges, a peregrine falcon territorial range, a prairie falcon nest site, and probably provides habitat for 18 raptor species, including owls. **3**

Since Kenetech turned down the nearby Seven Mile Hill site in Oregon (now proposed for a wind farm by Zond) due to avian concerns, I asked Mr. Anderson to compare the avian significance of the Kenetech/C.A.R.E.S. Columbia Hills site with the Seven Mile Hill site. His response was that these two sites have equal avian significance. I then asked him if we ought to agree to or oppose an initial test of 150 wind power machines on each of the Kenetech and C.A.R.E.S. sites to gather data on avian problems. Mr. Anderson replied that this was a very important avian site and that it would not be appropriate to construct wind power machines here. Mr. Anderson also told us that even though the proponents, the agencies and regulators will probably deny it - these wind farms have the potential to significantly impact avian species in the region. **4**

Another concern Mr. Anderson expressed to us regarded hidden habitat loss that goes beyond what will be admitted. He says these wind machines will be moved from place to place in search of the best specific wind sites, resulting in a lot more roads and concrete foundation pads than are expected. These concrete pads attract ground squirrels (who burrow under them) to the area, which would probably draw even more raptors than now use the site. It was also pointed out that wind power companies have poor records for their handling of hazardous wastes, oil, and grease, which then pollute the area. **5**

Mr. Anderson also had rather strong doubts about the avian research conducted for the Kenetech/C.A.R.E.S. project: (1) Avian data was collected prior to an agreed upon research plan. (2) A single year study would not reflect variable bird use of the area from year to year. (Annual variations of bird populations over several years is demonstrated in our Christmas Bird Count records for 1986-1994 in nearby Hood River, Oregon.) (3) A gap in the winter data (November- **6a** **6b** **6c**

January: during the most common waterfowl use of the Columbia Hills). (4) Avian studies occurred simultaneously with the writing of the E.I.S. (5) The extremely brief time period between the completion of the avian studies and the E.I.S. leaving very little or no time to analyze the data and incorporate it into the E.I.S. (See Anderson's letter of 2/6/94 to Jones & Stokes Associates) (6) The high concentration of so many raptor species using the area. 6d 6e

In December, Ben Wolff of C.A.R.E.S. spoke with our board about their proposed wind farm contiguous to the Kenetech site on the Columbia Hills. We found Mr. Wolff to be unusually open with us, but we were shocked when he revealed that poisoning of small mammals on the site was "a real alternative." The intent would be to deny raptors a prey base and thereby discourage their use of the area. Since that meeting Mr. Wolff has written us that he is "not aware of any plan to poison wildlife in the wind project area." We suspect that they are considering poison but have not yet developed a plan. We have requested that Mr. Wolff clarify this issue, and commit to no poisoning, but we have not heard back from him. In our meeting with Mr. Wolff we also asked him how C.A.R.E.S. would respond to a significant avian problem and his response was once again very frank; he told us that C.A.R.E.S. would proceed with the project even if there are significant avian problems. 7

Unfortunately, an incident has occurred (see enclosed news clipping of 3/2/95) that may be related to wind farms: a bald eagle has been shot on or very near the Kenetech/C.A.R.E.S. sites. We have some concern that other birds may have been shot and taken, and this one was lucky enough to get away 8

Our problems extend beyond trying to deal with these proposed wind farms. They include your decision to drop National Audubon's request for a moratorium on wind power until the avian concerns are addressed and resolved. We believe it is wise to allow each chapter to make their own decision on issues. However, we believe that the wind power-avian issue is of such magnitude and the problem so obvious, that National must take a leadership role. This is not a dangerous position for National to take, as long as the threat is great and any error would be on the side of birds and the environment. 9

The moratorium you proposed on wind power sent a clear message, and it brought the problem to center stage where it needs to be. The public was being forced to see that alternative energy like wind power is not green if it slaughters birds. Our regulatory agencies knew that they had National Audubon behind their efforts to address the problem, and this encouraged them to be professional and not give in to the kind of pressures they are now under to reduce their concerns to a manageable level. Our political representatives had to think twice before allowing tax deferment incentives to build machines that kill birds. And, most important, the wind power industry was forced to solve the avian problem by designing and building machines that do not kill birds. Now all this fades away.

We are left with the test. "Is the site in an important bird area? If it is, oppose the wind farm, but if it is not, allow the construction of a maximum of 150 machines." Of course the wind farm company will claim it is not an important bird area, and they will produce an E.I.S. that will verify this, regardless of how significant the site actually is. Even if a company proceeds slowly and builds an initial 150 machines, and then there is a problem, what is the likelihood that they will ever remove those machines once they are in? We doubt they would, and that is why we also doubt this test offers a reasonable compromise position. 10

If we do not focus on a technical solution to the wind power-avian problem we are left with two fallback options: proper siting and mitigation. Proper siting suggests that there are windy locations without bird problems - and we wonder if such places exist. Even if they do, how do we get the wind companies to locate there? If mitigation is necessary, this suggests to us that the proper site has not yet been found. Considering the intense raptor use of the proposed Kenetech/C.A.R.E.S. site, heavy mitigation would be required since bald eagles, golden eagles, peregrine falcons and the like are involved. 11

This mitigation element has created a whole new problem, and that is pseudo-environmentalists who support wind power so they can secure grants, support mitigation plans and personally benefit by administering those wind power mitigation monies. These people do not support the Zond Seven Mile Hill site on the Oregon side of the river because of avian concerns. But despite similar agency concerns, they do support the Kenetech Columbia Hills wind farm proposal that is much larger and has potential for more adverse impacts. The individual most actively involved has even appeared in a Kenetech promotional videc The inconsistency of their position, and the apparent close relationship existing between them and Kenetech causes us to doubt their credibility. These people are attempting to undermine the importance of this area for birds and they are actively seeking the support of northwest evironmental groups for wind power. They have gone with Kenetech to Audubon's state office in Olympia. We have asked Washington State Director Jim Pissot for support and direction on this issue, but he has directed us to you. We know these individuals have been talking with you. We hope you will listen closest to us, the local Audubon Chapter involved in this issue. 12

For all these reasons, CGAS urges you to reconsider your decision to drop National's moratorium on wind power. Wind power can be a green alternative power source, but only if the avian problems are solved.

We understand the importance of credibility regarding this issue, and that is why our position has been and will continue to be advanced based on the expert opinions of those who both work for the public and have authority under the law to review the proposals: agency biologists (see

enclosed news clipping of 3/2/95). We request that you contact the Director of Washington Department of Fish and Wildlife and ask him to provide strong support to his regional non-game biologist's preliminary avian assessment of the impacts of these proposals.

Due to the magnitude of the wind power proposals we are facing, and the avian significance of the area, Columbia Gorge Audubon has decided to oppose all wind farms in the area until the wind power companies design and build wind machines that do not kill significant numbers of birds or deny them habitat. However, we realize that our small 250 member bi-state chapter cannot meaningfully deal with this problem without the assistance of National Audubon. Therefore we request your involvement in reviewing, commenting on and possibly litigating these wind farm proposals. We are enclosing copies of the Kenetech/C.A.R.E.S. Draft E.I.S., Technical Report on Avian Use, and Botanical Resources Field Survey for your review. The comment deadline has been extended to April 17, 1995. 13

Most Sincerely,

David Thies, President
Columbia Gorge Audubon Society

Enclosures: WDFW letter of 11/29/93, WDFW letter of 2/6/94, CGAS Christmas Bird Count record, The Enterprise news clipping of 3/2/95, Kenetech Joint NEPA/SEPA Draft EIS, C.A.R.E.S. Joint NEPA/SEPA Draft E.I.S., Kenetech/C.A.R.E.S. Avian Use Technical Report, Botanical Resources Field Survey

cc: Washington State Audubon Chapters; Lynn Herring,Portland Audubon Chapter; Jim Pissot, Washington State Office NAS; Jill Shirley, Audubon Western Regional Office; Michell Ammes, U.S. Fish and Wildlife Service; Yakama Indian Nation; Kurt Dreyer, Klickitat County Planner; Kathy Fisher, Bonneville Power Administration; Portland Area Office, U.S. Department of Interior, Fish and Wildlife Service; Oregon Department of Fish and Wildlife; David P. Anderson, Washington Department of Fish and Wildlife; Bob Turner, Director, Washington Department of Fish and Wildlife; the news media.

CURT SMITH
Director

STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE
5405 N.E. Hazel Dell Ave., Vancouver, WA 98663 Tel. (206) 696-6211

November 29, 1993

A. David Every, Ph.D
Senior Terrestrial Ecologist
Dames & Moore
500 Market Place Tower
2025 1st Avenue
Seattle, WA 98121

Subject: Klickitat Wind Energy Project
Meeting of November 18, 1993

Dear Mr. Every:

This project, involving at least two operators, would construct approximately 400 wind turbines on the hillsides above the Columbia River, south and southeast of Goldendale. Included with the project would be substations, transmission lines and service roads.

As we discussed during the November 18 meeting, the Department of Wildlife would like to see the following issues addressed during the study phase of this project:

A. One of our primary concerns deals with the proposed timing of the draft EIS. As agreed, the avian study will continue for an entire year, to accurately assess avian use of the project. The avian report would possibly be completed in the fall of 1994. However, the draft EIS is scheduled to be issued in the summer of 1994, even before the avian study is completed. **14**

It is our position that the draft EIS should not be issued until after the avian study is completed, its data is thoroughly analyzed, and the project is then designed to accommodate the results of the study. Any other approach would suggest that the avian study is mere "window dressing" which would have little or no impact on the final project design. The draft EIS should show the proposed design of the project. We believe it presumptuous to design a project that is supposed to accommodate the needs of wildlife before the wildlife use patterns of the area are well known.

B. A formal scoping meeting should be convened after the results of the 45 day preliminary study and literature survey are available. At that time we will be more able to assess future study needs. 15

C. Although it is difficult for us to establish our concerns before the completion of the literature review phase, at a minimum the wildlife study should concentrate on the following: 16

1. Species using the area:
    a. threatened or endangered species
    b. passerine birds
    c. waterfowl
    d. raptors
    e. ground-nesting birds
    f. bats
    g. other wildlife
2. Seasonality of the use
3. Nature of the use:
    a. foraging
    b. migrations
        -- north/south
        -- east/west (e.g., through the Gorge)
        -- daily (river to fields, etc.)
    c. nesting and breeding
4. Potential impacts to wildlife:
    a. bird strikes against rotors, towers or transmission

lines

-- impact of lighting as an attractant or a possible deterrent

b. electrocution hazards

c. destruction of breeding, nesting, foraging habitat

d. impacts to terrestrial wildlife

D. Impacts on wildlife recreation should be measured, including the following: 17

1. Impacts on hunting opportunities

2. Impacts on non-consumptive wildlife recreation (bird-watching, etc.)

E. Impacts of construction on water quality and stormwater runoff should also be estimated, and an erosion control plan should be included in the draft EIS. 18

F. Finally, the draft EIS should include mitigation proposals which would preferably avoid or lessen impacts to wildlife resources, or at least provide for replacement of resources adversely affected by this project. 19

We may offer additional comments and recommendations after we have had a chance to review the results of the preliminary study phase and literature survey.

I will be the primary contact for this project for the Department of Wildlife. Please feel free to contact me at (206) 835-8831 if you have any further questions.

Sincerely,

Carl Dugger
Area Habitat Biologist

cc: Kathy Fisher, RAE, BPA, P.O. Box 3621, Portland 97208-3621
Samuel E. Enfield, 8011 29th Av. NW, Seattle 98117
Kurt Dreyer, Klickitat Planning
David Mudd
Bryan Cowan
David Anderson
Connie Iten
F:HPA/Klickitat

CURT SMITCH
Director

STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE
5405 N.E. Hazel Dell Ave., Vancouver, WA 98663 Tel. (206) 696-6211

February 6, 1994

Steve Hall
Jones and Stokes Associates
2820 Northup Way Suite 100
Bellevue, WA 98004

Dear Mr. Hall:

Subject : Raptor Study - Wind Turbine Project
Klickitat County

This letter is a follow-up to our phone conversation on February 1st regarding the raptor study associated with the wind generation project. I wanted to provide you with my suggestions for data collection on this project. The Washington Department of Wildlife (WDW) feels that certain information will be critical for our evaluation of the project as proposed on raptor species.

I am concerned that data collection has been initiated prior to the development of a comprehensive methodology for this project. WDW has stated many times that we want data that represents a year-around analysis of raptor use of the project area and lands with wildlife resources adjacent to the project site. These suggestions for data collection will assist you in determining the methodology needed to answer some of the questions our agency will be concerned with. 20

RAPTORS

Spring and Fall Migration

I have discussed this topic with Steve Hoffman from HawkWatch International. The migration period for the spring should be during March and April and possibly to mid May. The fall migration period will be considered from the end of August to the end of October or early November. 21

The sample period should be two times a week and surveys should begin two hours after sunrise and end one hour before sunset. Survey stations should be approximately two miles apart to have adequate coverage of the area. Full day observations should be conducted at all survey stations on the same days. Surveys should be conducted during good weather.

Breeding Season

Breeding surveys should be conducted to determine the location of all raptor species within the project area. The draft avian study did not indicate the need for breeding bird surveys to be conducted off the project site.

Additional surveys should be conducted to determine the location and species of raptors adjacent to the project that may be impacted by the wind power project. Many raptor species hunt over large areas and therefore may fly into the project area. These areas would include both the Washington and Oregon sides of the Columbia River. I would suggest a combination of ground and aerial surveys (helicopter) to assist with collection of this data. These surveys should be coordinated with both local state wildlife biologists from Washington and Oregon. **22**

Wintering Period

This information may be the most variable from year to year based upon obvious changes in winter weather patterns and prey availability. As with any study, one years information only provides you with a brief picture of avian use of a particular location. Different species may be present or absent on a project location for different reasons. For example, rough-legged hawk winter populations and distribution tend to be influenced more by meadow vole availability. Red-tailed hawks show less variability from year to year and forage on a wider range of prey species. **23**

Once a week coverage of the project area, as well as surrounding habitats, provide you with the best information. Two week intervals would be the maximum time between surveys to capture winter raptor movements.

Our concerns are that the 1993-1994 winter survey period has not been adequately covered due to the late start of the avian study. Poor observation weather in December and January, a transition between contractors and a lack of a sound methodology during this winter period, indicates a potential for a lack of sufficient information to adequately review winter studies. The need for further surveys next winter may be warranted.

These comments are based on our discussion and pertain only to the raptor study portion of the project. I suggest that we follow-up with a meeting to further discuss these ideas and determine the lines of communication between your organization and WDW's habitat and wildlife management division. It would be good to discuss other portions of the avian study.

Please feel free to contact me regarding any questions you have regarding this project.

Sincerely,

David P. Anderson
Area Wildlife Biologist

dpa

cc: Carl Dugger WDW
David Mudd WDW
Curt Dreyer Klickitat Co.
Kathy Fisher BPA

The Enterprise
Serving White Salmon and Bingen, Washington, since 1903
MARCH 2, 1995 | VOL. 93, NO.9 | 1 SECTION, 18 PAGES | 50¢

Injured bald eagle is flying back to the wild

By JESSE BURKHARDT
The Enterprise

MARYHILL — It took a month of doctoring and rehabilitation, but an adult bald eagle spread his magnificent wings and flew back to the wild last Thursday morning.

"He was so happy to get thrown up in the air and not have a rope attached to him," said Bob Sallinger, assistant director of the Portland Audubon Wildlife Care Center.

Sallinger explained that part of the eagle's rehabilitation work involved attaching a line to him and then releasing him into the air. This helped the bird gain strength by allowing him to fly naturally.

"We would fly him like a kite," Sallinger said. "Release him, and then run like hell beneath him, holding onto the line."

The male eagle, estimated to be between five and seven years old, weighed almost 11 pounds. He was discovered near Goldendale in late January, suffering from injuries caused by a gunshot wound.

According to Sallinger, the big bird's femur had been shattered by the bullet. The bone had healed itself, but the eagle was unable to fly because an air sac had been punctured by bullet fragments.

The bird received medical treatment from Dr. Marli Lintner, a veterinarian at the Avian Medical Center in Lake Oswego, Ore.

During his stay with the Wildlife Care Center, approximately 50 volunteers looked after the eagle. A special cage had to be built to accommodate the energetic bird.

"In all, caring for the eagle required about 150 hours of work, all by the volunteer staff," said Sallinger.

Sallinger added that the eagle, although probably traumatized by his ordeal, appears to be strong and has a good chance of surviving in the wild. "They have a fairly large territory out here," Sallinger said. "There are a lot of animals to hunt."

Sallinger said there are approximately 770 breeding pairs of bald eagles in Washington and Oregon combined.

David Anderson, a wildlife biologist for the Washington Department of Fish & Wildlife who is stationed in Trout Lake, expressed uneasiness about the fact the bird was found near the proposed site of a large wind power facility in the Columbia Hills. He fears a negative impact on raptor species if the turbines are built there.

"It brings home the concerns about the wind power project," Anderson said. "The towers could affect wildlife resources in that area, and that's a preliminary concern we have."

Two groups involved in the energy project — Kenetech and Conservation & Renewable Energy System — plan to place a combined 436 wind turbines on 13,605 acres of land southeast of Goldendale. The facilities would generate approximately 140 megawatts of electrical power that would be sold to the Bonneville Power Administration.

Although bald eagles — a national symbol — were recently taken off the Endangered Species list, they are still considered threatened. They are protected by the Eagle Protection Act and the Migratory Bird Protection Act as well as the Endangered Species Act. Deliberately harming them is a felony.

Anyone with information about the shooting of this bird, or any other eagle, should contact the Washington Department of Fish & Wildlife at (360) 696-6211, or the U.S. Fish & Wildlife Service, (509) 538-2755.

EAGLE ENERGY — Katie Serres of the Portland Audubon Society holds an adult bald eagle before releasing it from the grounds of the Maryhill Museum last Thursday. Upon release, the bird circled twice, then flew to the north. *Photos by Jesse Burkhardt*

Response to March 20, 1995 Letter from the Columbia Gorge Audubon Society to Jan Bayea, National Audubon Society

(Including Attached Letters (November 29, 1993 and February 6, 1994) from the Washington Department of Wildlife)

Note: Although this letter was not addressed as a comment letter to the lead agencies, it was copied to the lead agencies and is being treated as a comment letter on the draft EIS.

1. See General Response No. 2.

2. See General Response No. 11.

3. The draft EIS (Section 2.5.3) identifies the presence of these avian resources. The WDFW has officially commented on the Project in its April 17, 1995 letter. Please see responses to comments in that WDFW letter.

4. Section 2.5.3 of the draft EIS describes avian use of the site and surrounding area and Section 2.5.4 describes expected impacts. See responses to the April 17, 1995 WDFW comment letter. See also General Response No. 11.

5. The environmental review conducted for the Proposed Action includes specific surveys along proposed turbine strings. Mitigation measures identified in this EIS include the need for additional surveys (botanical, cultural resources) once alignments for the Project powerline and roads are determined. Part 3 of this document adds a discussion of the potential for concrete pads to attract ground squirrels and other burrowing small mammals to the area.

6a. An Avian Study Plan was developed to establish the year-long study in consultation with the WDFW, USFWS, and others (see response to the April 17, 1995 WDFW comment no. 4). The original study plan was significantly revised in response to WDFW comments (see responses to comments no. 14 through no. 23 of this letter). Because of the need to collect seasonal information, it was necessary to collect the winter data before the plan was finalized. However, established survey methods were used during that time. (See Chapter 3 of the Avian Technical Report for a complete description of the methods used to conduct all of the avian studies.)

6b. See General Response No. 10. While annual variations do occur, breeding raptor populations are typically quite stable, at least over a period of 5 to 10 years (see Newton, I. 1979. Population ecology of raptors; T & AD Poyser; Berkhamsted, England; page 56). While non-breeding populations may be somewhat more variable, the basic species composition, habitat use, and general abundance remains sufficiently stable to draw conclusions from the one-year study. In addition, the impact analysis considered variability. For example, the number of bald eagles assumed to potentially use the area was doubled from the number actually observed at the site (using data collected over two winters).

6c. A supplemental winter avian survey was conducted during December 1994 because of WDFW concerns about poor visibility and the scarcity of data collected during the previous year's winter survey.

6d/e. Avian studies and drafting the avian section of the draft EIS did occur somewhat simultaneously consistent with WAC 197-11-402 (8). The lead agencies did not issue the draft EIS, however, until after the *Avian Technical Report* was completed to ensure that all relevant information in that report was considered in the draft EIS.

7. This comment applies to another project—the CARES Columbia Windfarm #1. Use of poisons to control small mammals is not part of the Applicant's Proposed Action.

8. Concerns regarding the shooting of the bald eagle are noted.

9. Comments noted; they apply to National Audubon Society's policies regarding windpower development and not to this specific proposal.

10. See General Response No. 11 and the response to WDFW comment no. 6.

11. Comments noted. The need for mitigation does not necessarily imply that a site is not appropriate for windpower development, only that mitigation would be needed to reduce or compensate for adverse impacts. Also see General Response No. 11 regarding the importance of the avian resources in the area.

12. Comments noted. Also see General Response No. 4.

13. The opposition of the Columbia Gorge Audubon Society to wind energy development is noted.

14. In response to this concern by the Washington Department of Wildlife (now the Washington Department of Fish and Wildlife), a year-long study of avian use was conducted prior to issuing the draft EIS for the proposed Action. This delayed the draft EIS from summer 1994 until February 1995, after avian and wildlife studies were completed in December 1994. Section 1.4 of the draft EIS describes the features and locations of Project facilities. Part 1 of this document describes modifications to the proposed features submitted by the Applicant.

15. Public scoping meetings were held in White Salmon, Washington, on February 15, 1994 and in Goldendale, Washington, on February 16, 1994. Telephone conversations and scoping meetings were held with state (WDFW and ODFW) and federal (USFWS) wildlife agencies (see the response to WDFW comment no. 4). In addition, the preliminary results were presented to them on November 28, 1994, and December 14, 1994 (respectively), as discussed on page 3-1 of the Avian Technical Report.

16. The wildlife issues identified in the WDFW November 29, 1993 letter were addressed in the draft EIS and the Avian Technical Report in the following sections:

- Threatened and Endangered Species: See Sections 2.4.3.3, 2.4.4.1, 2.5.3.1, and 2.5.4.1 of the draft EIS. Also see response to April 17, 1995 WDFW comment nos. 9, 10, and 11.
- Passerine Birds: See section 2.5.3.4 of the draft EIS and Sections 4.1.3, 4.2.1, and 4.3.1 of the Avian Technical Report.
- Waterfowl: See section 2.5.3.3 of the draft EIS and Sections 4.1.2 and 4.2.1 of the Avian Technical Report. Also see response to April 17, 1995 WDFW comment no. 7.
- Raptors: See Sections 4.1.1, 4.2.1, and 4.3.1 of the Avian Technical Report. Also see Section 2.5.3.3 of the draft EIS and the response to April 17, 1995 WDFW comment no. 12.
- Ground-Nesting Birds: See Section 2.5.3.4 of the draft EIS.
- Bats: See Section 2.4.4.1 of draft EIS and the response to April 17, 1995 WDFW comment no. 8.
- Other Wildlife: See Sections 2.4.3.4 and 2.4.4.1 of the draft EIS.
- Seasonality of Use: See Section 2.5.1 of the draft EIS.
- Foraging: See Sections 4.2.2, 4.2.3, and 4.3 of the Avian Technical Report.
- Migrations (North/South, East/West/ Daily): See Sections 3 and 4 of the Avian Technical Report and the response to April 17, 1995 WDFW comment no. 6.
- Nesting and Breeding: See Section 4.3 of the Avian Technical Report and the response to April 17, 1995 WDFW comment no. 211.
- Birds Strikes Against Rotors, Towers, Transmission Lines: See Sections 5.3.2 and 5.4.2 of the Avian Technical Report.
- Lighting as an Attractant: Turbines would not be lighted.
- Electrocution Hazards: See Sections 5.3.2 and 5.4.2 of the draft EIS.
- Destruction of Breeding, Nesting, Foraging Habitat: See Section 2.5 of the draft EIS.
- Impacts to Terrestrial Wildlife: See Section 2.4 of the draft EIS.

17. The draft EIS discusses impacts to wildlife recreation in Sections 2.4.4.1 and 2.8.4.1.

18. The draft EIS evaluates construction impacts on erosion, sedimentation, and water quality in Sections 2.1.4.1 and 2.2.4.1. As discussed in Section 2.1.2 of the draft EIS, an Erosion and Sediment Control (ESC Plan) Plan would be required for the proposed Project under a NPDES General Permit for the Project. Section 2.1.2 describes requirements for the ESC

Plan. In addition, Section 2.1.4.2 describes additional mitigation measures that would further reduce the potential for erosion impacts.

19. Proposed mitigation measures are described in Section 2.5.4.2 in the draft EIS as modified by Part 3 of this document.

20. Refer to the response to comment no. 16, above, and to the response to the April 17, 1995 WDFW comment no. 4 and the Avian Technical Report. The data were collected using that methodology and provided detailed information about year-round avian and wildlife use at the site and surrounding areas.

21. The Avian Study Plan (see Section 3 of the Avian Technical Report) followed the recommended seasons and time of day (as described in Sections 3.2, 3.4, and 3.5.5 of the Avian Technical Report). Our design was a systematic sample of stations. It is generally accepted that a systematic sample provides better spatial representation than strict random sampling (Hurlbert 1984). Sample means are unbiased and precision is generally much better than for simple random sampling (Sceaffer et al. 1986, Thompson 1992). Our systematic sample of survey points and subsequent surveys were not conducted to evaluate only migration. The method we employed makes no assumptions about migrants versus residents; it is designed to monitor use over a specific defined area. Surveys were conducted throughout the day (6:00 am to 6:00 pm). One objective was to determine if there were differences in use during different times of the day.

    The Hawkwatch protocol places one or two observers at one particular site, usually a prominent north-south landscape feature such as a ridge. The observers collect field observations, regardless of distance as long as some kind of identification can be made. Observations are made on a daily basis (weather permitting) for an entire spring or fall. These data are useful when these same points are monitored over several years and trends are apparent. However, these data would not provide the kind of information needed to accurately characterize bird use of the Project study area.

22. Additional breeding surveys were agreed upon during the March 8, 1994 meeting with Carl Dugger and David Anderson of the WDFW. As agreed, lands within 10 miles of proposed development were surveyed twice using helicopters and ground searches were also made, as described in Section 3.8 of the Avian Technical Report. WDFW declined our invitation to accompany the avian study team on the helicopter surveys due to schedule conflicts.

23. See General Response No. 10, the response to the April 17, 1995 WDFW comment no. 4, and Section 3.4 of the Avian Technical Report.

March 30, 1995

Bill Weiler
Habitat Biologist, Region 3
WDFW

Delivered Via FAX: (509) 575-2474

Re: Columbia Hills Windpower Development

Dear Bill:

It was disappointing to learn from our conversation of March 28, that WDFW personnel, Kennetech, and "some" environmental interests met the week of March 20 at the proposed Columbia Hills Windfarm Site. This exclusionary meeting raises serious questions about the intent and casts a long shadow over the integrity of the participants.

You indicated that Jay Letto, former president of CGAS, organized this meeting. As you know, Mr. Letto, has become a self appointed spokesperson for windpower development in the Gorge, and an apparent agent for Kennetech. He sent out a discussion paper to Northwest Environmental interests late last year. Inherent in that paper was a call for these interest to gather to discuss this issue and to attempt to distill a consensus on windpower development in the Gorge. CGAS considered such an attempt a reasonable approach to the issue. In the hope of stimulating a healthy debate, CGAS sent out a discussion paper questioning some of Letto's basic tenants. CGAS waited for notification of the meeting. Our Oregon Conservation Chair, Jill Barker, who has been working on the windpower issue, made numerous calls to Letto, inquiring about the meeting date. Letto kept moving the meeting date ahead, but assured Barker that CGAS would be notified.

As you may know, CGAS recently invited David Anderson, WDFW non-game biologist, to address our board, regarding his preliminary assessment of the potential impacts of the Columbia Hills proposals on wildlife, particularly avian species. Mr. Anderson informed our board that he considered the site to be very significant, and that the proposals pose a serious threat to wildlife resources, and probably should not be built. He also expressed concern over aspects surrounding the EIS consultant's collection of wildlife data. CGAS published Anderson's conclusions in our newsletter and attached them to our aforementioned discussion paper. 1

It appears to CGAS that Anderson's preliminary conclusions may have been perceived as damaging to Letto's heretofore stated position: that the Columbia Hills and its immediate environs are not important bird areas. Furthermore, CGAS concludes that the proposed "consensus building meeting" failed to materialize because of the then more urgent business of "damage control." The on-site meeting, where a clear effort was made by the organizer to exclude other environmental interests, particularly CGAS (the group that had questioned Letto's assumptions) was nothing more than an attempt to head off the potential damage of Anderson's preliminary conclusions. In a subsequent conversation between CGAS and Anderson (who also was in attendance at the on-site meeting), Anderson expressed surprise that other environmental interests

P.O. Box 512, Hood River, Oregon 97031

were not represented, especially the bird group, Audubon. We all know the inestimable importance of the wildlife agencies' Findings of Facts and Conclusions for the project proponents and their cheerleaders.

The most disturbing part of our March 28 conversation was your indication that WDFW's position would probably be a green light for Kennetech's initial "west phase." Because this position would be inconsistent with Anderson's preliminary conclusion already expressed to CGAS, it raises the question: Is new information about the site's importance to wildlife now available, or is your prediction of WDFW's position an outgrowth of the private on-site meeting between Kennetech, Kennetech's supporters and department personnel? 2

You indicated that your position was now the same as you predicted for WDFW (which, incidentally, appears to be in direct conflict with your letter to Letto, dated February 28, 1995, where you used strong words criticizing the DEIS, including the proclamation that "this project is on a fast track--much too fast.") Regrettably, we now must ask, has your apparent change of heart come about as a result of Kennetech's project interest through Mr. Letto? Aren't you a member of the group, Central Cascades Alliance (CCA), spearheaded by Letto? Do you not work for WDFW? At the on-site meeting, were you representing CCA, WDFW, or both? It is interesting that your prediction for WDFW's position, your present position, and Letto's position on this issue have become one and the same. 3

You qualified, or rather apologized for your present position by saying, "It can't be stopped." It seems that this proposal should (or should not) be advanced under the best data available and not on the perception of whether it can be stopped. If biologists choose to be professionals and subsequent data suggests significant problems from the development, the proposals will probably self-destruct. Did biologists fail to speak out during the process of siting dams along the Columbia River, even though they knew the dams, and their silence, would probably lead to the extinction of one of the world's great anadromous fisheries?

This position of a "foot in the door" for Kennetech is both noncredible and a potential death knell for the Columbia Hills natural resources. The only meaningful data that will be collected by allowing an initial phase will be dead birds. This data is already available in copious quantities from research at windpower facilities in California and elsewhere. We do not need additional corpses of peregrine falcons, golden and bald eagles and assorted other avian species to gather useful information. Once the "initial phase investment" is made, the rest of the project is a virtual certainty. Anderson indicated that Kennetech, while at the site, quickly and clearly made the connection between initial investment and project completion. The only credible approach to this issue (particularly considering the presence of state and federal T&E species) is to collect comprehensive data over an adequate time period; then to determine the local and regional significance of the site; and then, determine if wildlife resources and windpower farms, of any dimension, are compatible. Migration data is virtually non-existent and can only be collected over a significant length of time. 4

While there is still time for objectivity, I would draw your attention to the documented natural resources that are draped across the Columbia Hills landscape. At a minimum the site involves: 5

--four-five Washington State Priority Habitats, including the most eastern extension of Oak/Pine Woodland.
--six-ten Washington State Priority Species

--state threatened western gray squirrel
--state and federal threatened bald eagle
--state and federal threatened peregrine falcon
--remnant, rare, high quality, native vegetative communities

5

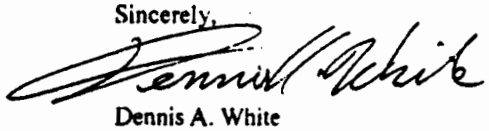
The aggregate biological significance of the Columbia Hills is tremendous. Considering the areas juxtaposition with the Columbia River,it is probably unique in the Northwest. The cumulative and synergistic negative effects of such a pervasive human footprint on the landscape could be devastating.

6

This is a beautiful and serene landscape that has watched over 10,000 years of humanity coursing up and down the mighty Columbia. Its desecration by a profusion of road cuts, endless strings of steel towers with whirling blades, and transmission lines is a social issue, but one that must be addressed.

We strongly urge you, either in your capacity as a biologist for WDFW or member of CCA to be a professional and not succumb to the pressures of industry and its pawns.

Sincerely,



Dennis A. White
367 Oakridge Road
White Salmon, WA 98672
(509) 493-3891

cc: USFWS
Bob Turner, Director, WDFW
Dave Mudd, WDFW
David Anderson, WDFW
Carl Dugger, WDFW
National Audubon Society
Dave Theis, President, CGAS

CURT SMITCH
Director

STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE
5405 N.E. Hazel Dell Ave., Vancouver, WA 98663 Tel. (206) 696-6211

November 29, 1993

A. David Every, Ph.D
Senior Terrestrial Ecologist
Dames & Moore
500 Market Place Tower
2025 1st Avenue
Seattle, WA 98121

Subject: Klickitat Wind Energy Project
Meeting of November 18, 1993

7

Dear Mr. Every:

This project, involving at least two operators, would construct approximately 400 wind turbines on the hillsides above the Columbia River, south and southeast of Goldendale. Included with the project would be substations, transmission lines and service roads.

As we discussed during the November 18 meeting, the Department of Wildlife would like to see the following issues addressed during the study phase of this project:

A. One of our primary concerns deals with the proposed timing of the draft EIS. As agreed, the avian study will continue for an entire year, to accurately assess avian use of the project. The avian report would possibly be completed in the fall of 1994. However, the draft EIS is scheduled to be issued in the summer of 1994, even before the avian study is completed.

It is our position that the draft EIS should not be issued until after the avian study is completed, its data is thoroughly analyzed, and the project is then designed to accommodate the results of the study. Any other approach would suggest that the avian study is mere "window dressing" which would have little or no impact on the final project design. The draft EIS should show the proposed design of the project. We believe it presumptuous to design a project that is supposed to accommodate the needs of wildlife before the wildlife use patterns of the area are well known.

B. A formal scoping meeting should be convened after the results of the 45 day preliminary study and literature survey are available. At that time we will be more able to assess future study needs.

C. Although it is difficult for us to establish our concerns before the completion of the literature review phase, at a minimum the wildlife study should concentrate on the following:

1. Species using the area:
    a. threatened or endangered species
    b. passerine birds
    c. waterfowl
    d. raptors
    e. ground-nesting birds
    f. bats
    g. other wildlife
2. Seasonality of the use
3. Nature of the use:
    a. foraging
    b. migrations
        -- north/south
        -- east/west (e.g., through the Gorge)
        -- daily (river to fields, etc.)
    c. nesting and breeding
4. Potential impacts to wildlife:
    a. bird strikes against rotors, towers or transmission

lines

-- impact of lighting as an attractant or a possible deterrent

b. electrocution hazards

c. destruction of breeding, nesting, foraging habitat

d. impacts to terrestrial wildlife

D. Impacts on wildlife recreation should be measured, including the following:

1. Impacts on hunting opportunities

2. Impacts on non-consumptive wildlife recreation (bird-watching, etc.)

E. Impacts of construction on water quality and stormwater runoff should also be estimated, and an erosion control plan should be included in the draft EIS.

F. Finally, the draft EIS should include mitigation proposals which would preferably avoid or lessen impacts to wildlife resources, or at least provide for replacement of resources adversely affected by this project.

We may offer additional comments and recommendations after we have had a chance to review the results of the preliminary study phase and literature survey.

I will be the primary contact for this project for the Department of Wildlife. Please feel free to contact me at (206) 835-8831 if you have any further questions.

Sincerely,

Carl Dugger
Area Habitat Biologist

cc: Kathy Fisher, RAE, BPA, P.O. Box 3621, Portland 97208-3621
Samuel E. Enfield, 8011 29th Av. NW, Seattle 98117
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February 6, 1994

Steve Hall
Jones and Stokes Associates
2820 Northup Way Suite 100
Bellevue, WA 98004

8

Dear Mr. Hall:

Subject : Raptor Study - Wind Turbine Project
Klickitat County

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Please feel free to contact me regarding any questions you have regarding this project.

Sincerely,

David P. Anderson
Area Wildlife Biologist

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cc: Carl Dugger WDW
David Mudd WDW
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Kathy Fisher BPA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

TAKE PRIDE IN AMERICA

ca
5/24

In Reply Refer To:
FWS/DD

Memorandum

To: Regional Directors
Assistant Directors

9a

From: Director

Subject: Windpower

In a memorandum dated, January 16, 1994, the Regional Director, Region 1, asked that the Service develop a written policy regarding the effects of the use of windpower turbines on wildlife. The policy is that the Service will enforce regulations associated with the Migratory Bird Treaty Act, 16 USC-703-712, the Bald and Golden Eagle Protection Act, 16 USC-668, and the Endangered Species Act.

The Service supports the Administration's goal of developing and expanding renewable energy sources such as windpower. Therefore, the Service will assist the windpower industry with development of windpower technology that is not detrimental to wildlife. Hopefully such actions as modification of site placement, changes in operating schedules, and equipment modification can be developed to reduce the impact of windpower on wildlife.

To improve communications, working relationships with the industry, and to assist with development of safer windpower technology, I am assigning the lead responsibility for this effort to the Migratory Bird Management Office. They will be responsible for involving enforcement and endangered species personnel in their deliberations. I suggest similar assignments be made at each Regional Office.

Signature

CC - all SA's

1/6/94

Memorandum

To: Director, U.S. Fish and Wildlife Service
Washington, D.C. (D)

From: Regional Director, Region 1
Portland, Oregon (ALE)

Subject: Windpower Expansion Concerns **9b**

This memorandum is to keep your office informed and to express our growing concern over the killing of eagles and migratory birds associated with the expansion of the windpower turbine industry. While we support efforts to develop windpower as an alternative source of renewable energy, we believe it is important to address serious environmental issues which have been identified with wind turbines as currently designed. We simply would not like to see one problem resolved by creating a problem that could be as serious in nature.

Installation of producing wind turbines began in California in 1981. Bird mortalities associated with collisions with rotating turbine blades were first noted in 1984. Since that time, two studies of avian mortality associated with the wind energy projects have been completed. These studies and other sources have revealed a disturbingly high loss of federally protected birds. For example, the studies indicate that an average of 40 golden eagles are being killed each year at the Altamont Pass site alone. It has also been estimated that 6,800 passerine birds are killed annually at another site in southern California. Most, if not all, of the losses are in violation of the Migratory Bird Treaty Act, 16 U.S.C. 703-712 and the Bald and Golden Eagle Protection Act, 16 U.S.C. 668.

The Service notified all major windpower companies in writing of the conflict with Federal wildlife laws in 1987. Industry expansion has continued without a solution to the mortality.

In response to growing public concern and the lack of remedial action by the windpower companies, the Service's Division of Law Enforcement initiated a criminal investigation into avian mortalities at the Altamont Pass site in California. The results of the investigation have been referred to the U.S. Attorney, Northern District of California, for evaluation and disposition.

Officials in that office have tentatively recommended that the Department of the Interior assess civil penalties under authority of the Bald and Golden Eagle Protection Act prior to initiation of criminal prosecutions. We are awaiting a formal recommendation from the U.S. Attorney.

Expansion of the industry is currently being spearheaded by U.S. Windpower, a KENETECH Company, which is the world's leading manufacturer of wind turbines. U.S. Windpower is attempting to "mitigate" losses associated with industry expansion by fundin additional studies and donating money to various conservation organizations. Company representatives have recently indicated a possible solution to the "problem" will probably not be implemented for at least 8-10 years.

We are particularly concerned over recent proposals to expand into environmentally sensitive areas before a solution to the killing is developed. For example, there are current proposals to place approximately 440 turbines along the Columbia River in Washington and Oregon. The turbines are to be placed adjacent to the Columbia River Gorge Scenic Area at locations known to be frequented by golden eagles, bald eagles, and peregrine falcons. Peregrine falcons have, in fact, been reintroduced along the Columbia River Gorge within the past five years. Because this expansion is being proposed with full knowledge of the potential taking of migratory birds, eagles and endangered species, we intend to open criminal investigations and document all losses. Evidence of killing will be presented to the appropriate U.S. Attorney in Oregon or Washington for consideration of criminal prosecution. We also intend to submit evidence of eagle losses to the Regional Solicitor for civil penalty consideration.

We believe illegal losses must be addressed through the development of safe turbines and not through "mitigation" payments. We further believe these companies must be required to comply with Federal law. The applicable laws do not contain provisions which allow large corporations to simply "mitigate" noncompliance.

There is no question that wind turbines, as they are currently designed and operated, pose a significant threat to migratory bird populations. If expansion is allowed to move forward throughout the Nation without proper safeguards, the current situation can only get worse. We, therefore, believe and recommend that the Service take a strong stand concerning these losses and develop a written policy regarding our position.

ORIGINAL SIGNED BY
MARVIN L. PLENERT

DLMcMULLEN:bse

(1)

February 28, 1995

Letter CC from Bill Weiler

To: Jay Letto, President
Central Cascades Alliance

From: Bill Weiler BW

Subject: Kenetech Windpower, Inc.

Thank you for the opportunity to review the document. A number of concerns/predictions can be summarized:

1. This project is on a fast track -- much too fast. Nothing will stop it unless the Yakamas determine the site is a "traditional cultural property." Even then, it just might mean doing a 2 year archaeological survey. As you may know, the Yakama Tribal Council has not voted either way on the windpower project. 10

2. Speaking of surveys, the biggest biological argument against the project is that ONLY YEAR OF SURVEYS WAS DONE. THERE IS NO WAY YOU CAN MAKE PREDICTIONS OR MANAGEMENT DECISIONS BASED ON ONE MEASLY YEAR OF SURVEYS. For example, in Washington state, if you did a spotted owl nesting survey in 1993, due to it being a terrible year, one could easily predict dire consequences for the species. However, the 1994 nesting survey results showed a fairly normal year. Generally, researchers are looking for at least 3 - 5 years before TRENDS in a specie's population status can be ascertained. 11

3. The mitigation measures for wildlife are simply terrible, particularly for the western gray squirrel. More on this later. 12

4. My opinion is that through the windpower project, as proposed, BPA is violating one of its major responsibilities: "Restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects." (Page S-2). 13

5. One gets the distinct feeling that the document is simply an advertisement for the project rather than an objective biological and economic assessment. 14

6. Many places in the document boast that without the project, the site will continue to deteriorate because of grazing. Yet, unless I'm missing something, grazing will still be allowed to continue. They can't have it both ways -- either the grazing goes or perhaps the generators should! 15

Specific Comments: (Keyed to pages in the document)

Roads (Page 1-12) Will roads be gated (closed) to the public? We should demand this to reduce recreational and/or vehicular traffic impacts to wildlife. 16

Plant Surveys (Page 2-18) Who did them? What were their qualifications? Were they also just one-year inventories? 17

Riparian Sites (Page 2-13) "Constructed ponds and seeps are on the project site, but are outside of the areas that would be disturbed by construction." My concern: How far are these important areas from any turbines? 18

White oak (Page 2-23) The project will remove 22 acres of Oregon white oak. This is unacceptable. And there is no mitigation mentioned except the feeble: "We will try to stay away from oak woodlands.". At the very minimum, BPA should purchase additional oak woodland and donate it to Nature Conservancy, Cascade Alliance or other worthy group. At least 22 acres of oak woodland should be planted on the site. 19

Western gray squirrel Mitigation (Page 2-39). They based these solely on a phone call with Carl Dugger. Totally unacceptable. Please refer to my western gray squirrel comment pages to DNR that I gave you at the CCA meeting. We want 2 years of surveys before the first bulldozer shows up. Where are the nests if any in the project area? The project mentions staying a mighty 400 feet away from any nest site from May to September. Not good enough. W. grey squirrels nest from late December to September. We want at least 60% canopy in the stand around nest sites, not just 50%. 20

Other Priority Habits (PHS) (Page 2-40) Project proudly states there will be no development in talus, cliffs, rock outcrop areas? Our guidelines call for buffers. We should insist upon buffering these important/sensitive habitats. 21

Amphibians: Don't remember seeing anything on these species. 22

Foolish statement about gray squirrels (Page 2-41) "Project would reduce habitat for western gray squirrel to a relatively 23

(3)

minor extent." A without scientific basis worthless statement. Gray squirrels only have a 5 acre to 16 acre home range, and the project is eliminating 22 acres of oak woodlands, in addition to noise factor. 23

Long-billed Curlew: Second bad statement. (Page 2-45). Two curlew were seen on site. "Project site receives only occasional use." Whoa! This could be a nesting pair. This is another rare species. 24

Western bluebird: (Page ?) This species is nesting in the oaks on the project site. I think they counted 115 bluebirds. What happens after removing 22 acres? 25

Impact to raptors: (Page 2-53) "Construction could disrupt nesting raptors." And the turbines will inevitably kill some. Same page, "6 - 20 raptors could die." 26

Ridiculous peregrine falcon statement (Page 2-54) "If one of these peregrines were to strike a turbine, it wold be unlikely to affect the viability of the population of the Columbia Gorge Management Unit."... which only has 7 confirmed pairs. 27

Golden Eagle mortality: (Page 2-55) "Golden eagle mortality expected." 28

Unacceptable mitigation measures (Page 2-58): Needs to be expanded to include -- other raptor nests and no turbine activity within 1 mile of any raptor nest. Eliminate the turbine site within 1 mile of the area where the peregrines were observed. 29

Presence of spirits: 2-66 YIN "elders have stated that they believe spirits still reside in the Columbia Hills area." How about a "Protect the Spirits" campaign. 30

We may want to support the "restricted areas" alternative which protects two known archaeological sites. 31

One year study: Page 2-93 EIS admits that only a one year study has been conducted on wildlife inventory. HIT THEM HARD ON THIS. See paragraph I wrote above. 32

I skipped aesthetics and noise chapters.

Other: Somewhere in the final EIS, there should be a discussion of why the former windpower project failed, and what changes they've made to ensure a non-repeat situation. 33

The Enterprise
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MARCH 2, 1995 | VOL. 93, NO.9 | 1 SECTION, 18 PAGES | 50¢

Injured bald eagle is flying back to the wild

By JESSE BURKHARDT
The Enterprise

MARYHILL — It took a month of doctoring and rehabilitation, but an adult bald eagle spread his magnificent wings and flew back to the wild last Thursday morning.

"He was so happy to get thrown up in the air and not have a rope attached to him," said Bob Sallinger, assistant director of the Portland Audubon Wildlife Care Center.

Sallinger explained that part of the eagle's rehabilitation work involved attaching a line to him and then releasing him into the air. This helped the bird gain strength by allowing him to fly naturally.

"We would fly him like a kite," Sallinger said. "Release him, and then run like hell beneath him, trailing onto the line."

The male eagle, estimated to be between five and seven years old, weighed almost 11 pounds. He was discovered near Goldendale in late January, suffering from injuries caused by a gunshot wound.

According to Sallinger, the big bird's femur had been shattered by the bullet. The bone had healed itself, but the eagle was unable to fly because an air sac had been punctured by bullet fragments.

The bird received medical treatment from Dr. Marli Lintner, a veterinarian at the Avian Medical Center in Lake Oswego, Ore.

During his stay with the Wildlife Care Center, approximately 50 volunteers looked after the eagle. A special cage had to be built to accommodate the energetic bird.

"In all, caring for the eagle required about 150 hours of work, all by the volunteer staff," said Sallinger.

Sallinger added that the eagle, although probably traumatized by his ordeal, appears to be strong and has a good chance of surviving in the wild. "They have a fairly large territory out here," Sallinger said. "There are a lot of animals to hunt."

Sallinger said there are approximately 770 breeding pairs of bald eagles in Washington and Oregon combined.

David Anderson, a wildlife biologist for the Washington Department of Fish & Wildlife who is stationed in Trout Lake, expressed uneasiness about the fact the bird was found near the proposed site of a large wind power facility in the Columbia Hills. He fears a negative impact on raptor species if the turbines are built there.

"It brings home the concerns about the wind power project," Anderson said. "The towers could affect wildlife resources in that area, and that's a preliminary concern we have."

Two groups involved in the energy project — Kenetech and Conservation & Renewable Energy System — plan to place a combined 436 wind turbines on 13,605 acres of land southeast of Goldendale. The facilities would generate approximately 140 megawatts of electrical power that would be sold to the Bonneville Power Administration.

Although bald eagles — a national symbol — were recently taken off the Endangered Species list, they are still considered threatened.. They are protected by the Eagle Protection Act and the Migratory Bird Protection Act as well as the Endangered Species Act. Deliberately harming them is a felony.

Anyone with information about the shooting of this bird, or any other eagle, should contact the Washington Department of Fish & Wildlife at (360) 696-6211, or the U.S. Fish & Wildlife Service, (509) 538-2755.

EAGLE ENERGY — Katie Serres of the Portland Audubon Society holds an adult bald eagle before releasing it from the grounds of the Maryhill Museum last Thursday. Upon release, the bird circled twice, then flew to the north. *Photos by Jesse Burkhardt*

Response to March 30, 1995 Letter from the Columbia Gorge Audubon Society to Bill Weiler

(Including the Following Attachments: Letters (November 29, 1993 and February 6, 1994) From the WDFW (Formerly Washington Department of Game); Internal U.S. Fish and Wildlife Service Memos (January 6, 1994 and April 28, 1994); Memo (February 28, 1995) to Jay Letto From Bill Weiler; and March 2, 1995 Enterprise Article)

Note: Although this letter was not addressed as a comment letter to the lead agencies, it was copied to the lead agencies and is being treated as a comment letter on the draft EIS.

1. Comments noted. See General Response No. 11 regarding important bird areas and responses to the April 17, 1995 WDFW letter.

2. The lead agencies and their consultants are not aware of statements being made by others, but this comment is noted. Also see the WDFW April 17, 1995 comment letter. Klickitat County has yet to determine whether to approve the permit application.

3. Comments noted.

4. Comments noted. See General Response Nos. 2, 10, and 11.

5. This information was collected and presented in Sections 2.3.3, 2.4.3, and 2.5.3 of the draft EIS.

6. Comments noted. Also see General Response No. 11.

7. This letter was also attached to the March 20, 1995 letter from the Columbia Gorge Audubon Society to Jan Bayea, National Audubon Society and is responded to in response nos. 14-19 to that letter.

8. This letter was also attached to the March 20, 1995 letter from the Columbia Gorge Audubon Society to Jan Bayea, National Audubon Society and is responded to in response nos. 20-23 to that letter.

9a/b. In part in response to the letter dated January 6, 1994 from Marvin Plenert, Region 1 Director of the U.S. Fish and Wildlife Service (indicated as comment 9B), the Director of the U.S. Fish and Wildlife Service issued the April 28, 1994 memorandum (indicated as comment 9A). The April 28, 1994 memorandum summarizes the Service's policies regarding windpower development. The U.S. Fish and Wildlife Service is currently reviewing the proposed Project under consultation provisions of Section 7 of the Endangered Species Act.

10. See General Response No. 1.

11. See General Response No. 10.

12. Comment noted.

13. See General Response No. 3.

14. Comment noted. The purpose of the EIS is to identify significant adverse impacts as well as measures to avoid, reduce, or mitigate impacts. The draft EIS also identifies significant unavoidable adverse impacts for the following elements of the environment: plants, wildlife (non-avian), birds, cultural resources, and aesthetics. The draft EIS is not intended to be an overall economic assessment of the proposed Project although expected socioeconomic impacts are summarized.

15. The discussions of No Action under each element of the environment have been modified, as appropriate, to clarify that grazing and agricultural uses and associated environmental degradation would occur under No Action and under the Proposed Action (see Part 3 of this document.) Decisions regarding agricultural and grazing use are not within the scope of the Proposed Action and will remain at the discretion of private property owners.

16. As discussed in Section 1.4.5.2 of the draft EIS, providing locked gates on access roads into the Project site is part of the mitigation proposed by the Applicant.

17. Plant surveys were conducted by Cheryl Ingersoll, Ph.D. in Botany (1991, Oregon State University) with a major in plant ecology and a minor in plant systematics. Dr. Ingersoll is a instructor and research associate of plant ecology at Oregon State University who specializes in rare plant population studies, vegetation analysis, and ecological restoration. She has 10 years of field experience in the Pacific Northwest, with grassland, forest, alpine, and high desert floras. Plant inventories were conducted over the spring through summer flowering and fruiting seasons for target plant species.

18. The closest area would be approximately 200 feet from the closest turbine string.

19. Comment noted. The lead agencies have identified a Preferred Alternative, described in Part 2 of this document, that includes a routing survey for the Project powerline, to be conducted in consultation with WDFW, designed to avoid oak and other Priority Habitats where reasonably feasible. The Preferred Alternative also calls for on-site or off-site enhancement/preservation of oak habitat.

20. See General Response No. 8 and response to comment no. 21p in the April 17, 1995 WDFW letter.

21. See General Response No. 8.

22. The draft EIS discusses amphibian use in the vicinity of the Project site and impacts to those species in Section 2.4.3.2, fifth and sixth paragraphs; in Table 2.4.1; in Section 2.4.3.3, first paragraph; in Table 2.4.2; and in Section 2.4.4.2 - Special Status Species, third paragraph.

23. The potential 21-acre loss of potential western gray squirrel habitat (oak and oak/pine) is minor in relation to the 1,080 acres of potential habitat present on the Project site. See also response to comment no. 19, above and response to comment no. 21p in the WDFW letter.

24. See response to comment no. 16 of William Weiler's letter.

25. See response to comment no. 17 of William Weiler's letter.

26. Comment noted. Raptor mortality is discussed as a Project impact in the paragraph following the one referred to in this comment on page 2-53 of the draft EIS.

27. See response to April 17, 1995 WDFW comment no. 11, Central Cascade Alliance comment no. 14, and the associated change in the wording in the draft EIS (Part 3 of this document). As part of consultation under Section 7 of the Endangered Species Act, the USFWS is determining whether the Project would jeopardize the continued existence of the peregrine falcon in the Columbia River Gorge.

28. Comment noted. The draft EIS does identify the potential for golden eagle mortality resulting from operation of the proposed Project.

29. See response to comment no. 20 of William Weiler's letter.

30. Comment noted. See General Response No. 5.

31. Comment noted.

32. See General Response No. 10.

33. The project referred to is not related to the Proposed Action.

Rec'd 4/17/95
KAF

COLUMBIA GORGE AUDUBON SOCIETY

TO: Kathy Fisher, ECN3
BPA, 905 NE 11th Avenue
Portland, OR 97232

FROM: Columbia Gorge Audubon Society

RE: Comments on the DEIS for Washington Wind Plant #1
and The Columbia Windfarm #1

The DEISs are misleading and inadequate.

--The regional avian significance of the site can only be determined by regional comparative analysis. This was not done. 1

--Avian studies were too limited (one year) to determine site's avian significance. This lack of population data and population model development, makes it impossible to determine the long-term viability of some species. Much of the winter observation period was obscured by fog. 2

--49 days is an inadequate time period to determine the site's avian migratory significance. Again, a regional comparative analysis is necessary. 3

--Grazing will not be prohibited. Cumulative environmental effects of both grazing and the wind power proposals were not considered. 4

--No cumulative impact assessments on visuals, wildlife, and cultural values on this and the other nearby wind power proposals: Zond and New World Power (and others unknown at this time). 5

--The Department of Energy must do a programmatic impact statement--one that would assess the cumulative impacts in the Washington/Oregon/California area of DOE actions in support of wind power. 6

--A small mammal study is necessary to adequately determine the raptor use patterns of this site. ODFW required this of the Zond proposal. 7

Comments--Page 2

--Inadequate assessment of visual impacts. It is misleading and inadequate to say that some will find it objectional, others will not. Studies show a good majority find turbines unsightly. The DEISs did not take into consideration the large number of viewers who would view this project resulting from the crossroads of three major transportation routes: east/west I-80, east/west State Route 14, north/south Route 97. 8

--These projects will be built knowing that birds protected by federal and state laws will be destroyed. This is not "incidental takings." 9

--Other viable site alternatives were not considered. 10

--The DEISs state a total of 241 acres of habitat will be lost. Actually this value will be significantly higher, due to secondary losses from turbine noise emission and strategies that will be employed to discourage use of large areas by raptors. 11

--No environmental impact assessment of contamination from greases, oils, etc., required by turbines and maintenance equipment. 12

--Plant inventories were not done on areas not predicted to be disturbed. This limits knowledge of occurrence and, thus, cumulative impacts on the site's plant communities. 13

--April-June plant inventory period was inadequate. Many species are prominent only before or after this time period. Also, inventories were done at the end of a seven-ten year drought, again, prominence was a problem. 14

--Every turbine string runs through either a high-quality plant community and/or a Washington State Priority Habitat. The cumulative effects of this were not considered. 15

--Soil disruption will lead to an invasion of weeds. This, combined with the necessary control by herbicides, was not considered. 16

--The occurrence of oak and oak/pine woodland on this site, represents the eastern most extension of this habitat type. The leading extension of this habitat type is genetically important for occurring flora and fauna. The significance of this and resulting impacts were not considered. 17

Comments--Page 3

--Assessment of impacts on the state threatened western gray squirrel were inadequate. The site's occurring population is a unique, genetically isolated population and will figure importantly in any recovery plan. Cumulative impacts of additional human intrusion, sound frequencies, etc., on this species, were not considered. 18

--References sited for possible occurrence of small mammals were for coast species and not eastern Cascade species. 19

--Collective visual, cultural, and biological uniqueness of the site (Columbia Hills) relative to other areas, was not considered. 20

--BPA funded the Regional Renewable Energy Project (final report released in the Fall of 1993). Siting criteria developed for this project would preclude the development of windfarms on this site. 21

--The Rattlesnake Hills Site was rejected because it conflicted with federal policy. This site conflicts with BPA's policy of "Restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects." These proposals will also violate federal law by killing protected birds. 22

--The DEISs presuppose, due to lack of data, that the site is not a major bird flyway. This is an admission that a lack of data exists to adequately determine the site's flyway significance. This area is part of the Pacific Flyway. 23

--BPA justifies this project on the assumption that, if not developed, fossil fuel-fired plants will be necessary instead. There is no information that suggests this is true. Furthermore, the inherent argument here is that conventional generating facilities have larger total adverse environmental effects. The DEISs offer no evidence for this argument. 24

Response to April 17, 1995 Letter From the Columbia Gorge Audubon Society

1. See General Response No. 2.

2. See General Response No. 10.

3. The statement regarding the adequacy of the time period is noted. The migration periods studied were the standard used to examine hawk migrations (see General Response No. 10). The dates were developed in cooperation with WDFW and the USFWS (see response to WDFW comment no. 4) and included the peak time periods when raptors are known to migrate.

4. The discussions of No Action under each element of the environment have been modified, as appropriate, to clarify that grazing and agricultural uses and associated environmental degradation would occur under No Action and under the Proposed Action and alternatives (see Part 3 of this document).

5. Section 3 of the draft EIS discusses the cumulative effects of the Washington Windplant #1 (proposed by KENETECH) and the Columbia Windfarm #1 (proposed by CARES) on aesthetics, wildlife, and cultural resources. See General Response No. 2 regarding the lead agencies' decision to not evaluate cumulative impacts of other projects.

6. See General Response No. 2.

7. A small mammal study was determined to be ineffective in assisting decisions regarding development of the site because: (1) direct observations of avian use patterns provide more direct and reliable information than indirect methods such as prey base studies and (2) mammal populations do not necessarily correlate to raptor hunting behavior and habitat associations. Raptor hunting behavior, as with most predatory behavior, is as closely tied to prey vulnerability as it is to prey abundance. For example, prey abundance is typically quite low on tilled cropland, but many raptors tend to hunt in these areas because the prey is relatively easy to see and catch (i.e., is more available; see Bechard, M. 1982. Effect of vegetative cover on foraging site selection by Swainson's hawk. Condor 84:153-159). Because of this complication, and because of the lack of definable criteria to determine "important" prey habitats, it was determined during design of the avian studies that prey studies, as opposed to habitat studies, would provide little assistance in making decisions regarding the site.

8. The draft EIS's conclusion that some would find windpower developments visually objectionable while others would not was based on a review of the literature on windpower project aesthetics and public perception. Section 2.7.4.1 describes what travellers along major highways would see.

9. Please see General Response No. 9.

10. As discussed in Section 1.6 of the draft EIS, the Applicant considered an alternative site at Rattlesnake Mountain. Following initial studies and consultation, the Applicant concluded the Rattlesnake Mountain Project would be incompatible with federal land management policies for the area. The lead agencies concluded that the Rattlesnake Mountain site was not available to the Applicant. SEPA rules also exempt private project EIS's from the need to assess alternative sites.

11. The action being considered does not include strategies to displace raptors from the site. Section 2.5.4 of the draft EIS identifies noise and human activity as additional impacts.

12. Section 2.2.4.1 of the draft EIS (last paragraph) addresses this impact. Mitigation measures listed in Section 2.2.4.2 of the draft EIS are intended to mitigate the risk of contamination. These mitigation measures are also included in the Preferred Alternative.

13. Although detailed transect surveys of areas not to be disturbed were not considered, botanical studies included initial walkovers of the entire Project site to confirm habitat/ plant community mapping. The draft EIS concludes that cumulative impacts from development of the proposed Project and from development of the proposed CARES' Columbia Windfarm #1 would occur and would include additional loss and fragmentation of shrub-steppe and oak habitat.

14. During the initial site visit in April 1994, some annual species were in flower and beginning to fruit. There was no evidence of plants that were too far advanced phenologically to identify. By June 1994, growth and flowering had ceased except for a few perennials that had already been identified. Many species were already dormant, so any target species, if present, would have already started to flower and would have been identifiable. Note that surveyed corridors were in seasonsably dry areas, i.e., no areas of standing water or high water table to support a longer growing season.

    During low rainfall years, perennial species generally emerge above ground, but they may not flower. Some perennials did not flower in 1994, but we were able to identify them or eliminate them as target species based on vegetative characteristics. Prolonged drought may have a pronounced effect on emergence of annual species. Many annuals survive drought by persisting as dormant seeds in the soil. Although it is possible that some of the target annuals potentially occurring in the Project area failed to emerge in 1994, a number of annuals did emerge and flower that year, indicating that environmental conditions were not generally limiting for annuals in that year.

15. See response to comment no. 13. The draft EIS in Section 2.3.4.1 evaluates cumulative Project impacts on various habitat complexes on the Project site.

16. The draft EIS discusses the tendency for soil disruption and habitat fragmentation to lead to a greater potential for invasive weeds (see Section 2.3.4.1, pages 2-23 and 2-24 and Section 3.3.3, page 3-7). Parts 2 and 3 of this document incorporate a requirement that the Applicant address weed control measures proposed by the Klickitat County weed coordinator.

17. Impacts to oak woodlands were identified in Section 2.3.4 of the draft EIS. Oak woodlands were a significant factor considered during the lead agencies' development of alternatives. The Alternative Overhead Powerline Alignment, which involves a shifting of the route to reduce potential impacts on Oregon White Oak and other Priority Habitats. The Preferred Alternative, described in Part 2 of this document, includes measures to reduce impacts to oak habitat relative to the Proposed Action and also includes on-site or off-site enhancement/preservation to replace lost for oak habitat.

18. As identified in Section 2.4.4.1 of the draft EIS, the Proposed Action would impact western gray squirrel habitat. Approximately 21 acres of oak, oak/pine, and scattered oak and oak-pine would be impacted. The mitigation measures for gray squirrel presented in Section 2.4.4.2 of the draft EIS as modified by Part 3 of this document were defined based upon discussions with WDFW. The cumulative impacts (including increased human activity) to wildlife resources (including the western gray squirrel) were defined in Section 3.3.4 of the draft EIS.

19. The primary reference used was Ingles (1965), which addresses all mammals of the Pacific States, not just coastal species. It is a standard and accepted reference.

20. Section 1.6 of the draft EIS describes the Rattlesnake Mountain site. See also General Response No. 2 and response to comment no. 10.

21. The program referred to was conducted by the Northwest Power Planning Council with BPA funding. Any siting guidelines included were developed by public interest groups and are not BPA policy.

22. See General Response Nos. 3 and 9.

23. See General Responses Nos. 10 and 11.

24. See General Response No. 4. Also refer to the BPA Resource Program EIS that is incorporated by reference.

Need Applicants Life

April 10, 1995

Kathy Fisher
ECN3, Bonneville Power Administration
905 NE 11th Avenue,
Portland, Or. 97232

Comments of the EIS on the Kennetech and Cares Proposal

Dear Kathy Fisher

This letter will convey my continuing concerns regarding the proposed Wind Farms on the Columbia Hills. I will restrict my comments to the area from Highway 97, east to the Oak Flat Road. That is the area that I am completely familiar with, and it is the area in which I live and will have my livability impacted. First and foremost, this communication is notice to the BPA and the two companies that if my home and livability is affected by pursuing the Wind Farms project, I WILL use the legal process for redress.

Concerns

#1 Noise

The cumulative effect of 481 wind mills will have a impact at my residence. (receiver site #7) I don't think the people at the two wind companies give a damn about what the noise levels will be. They can postulate and dazzle with all the projections and assumptions they want, but the bottom line is that they do not know. Noise will be determined by air density, wind direction, and what is making the noise. There are studies, that have documented the detrimental effect of steady droning noise to human health. 1

#2 Interference with Public and Private Radio, Microwave, and Television Transmission.

The studies all say that the Microwave and other transmissions would be weakened and distorted if the wind towers are in the path of the transmissions. Yet neither wind company gives a solution the problem. Law Enforcement, Fire, Television, and Radio are broadcast on a 360 degree radius. Most are located on Juniper Point. That is exactly where the 91 Cares Wind turbines are proposed to be installed. THEY WILL EFFECT THE TRANSMISSIONS. If you need an example, drive under a power line with your local radio station on. 2

#3 Aesthetics

The Columbia Hills have formed the southern vista of Klickitat County for eons. Added to the Simcoe Mountains to the north, the views and livability of the county are its primary asset. Now comes two companies, operating on federal grants to develop alternative energy sources, which by the way stands to make them a great deal

of money, wants to change that for good. There is no driving force other than money, to build these wind turbines. In the scheme of power generation, these wind turbines are minuscule. I have seen California with its wind turbines. It looks terrible, this county will look terrible. The depicted photos of the site areas with the turbines are laughable, the predominant sight will be just like California, Rows of wind turbines will be the only view. 3

#4 Avian

This is the most serious issue on a regional and national scale. First, I want to point out, what I consider is a FLAWED Avian study. I had an opportunity during the study period to check and observe the people doing the Avian study. These people were contacted and observed parked along Hoctor Rd. and SR #14 looking at birds through field glasses. The observations were sporadic. WHAT IS IMPORTANT, IS THAT NOT ONCE DID I EVER SEE OR OBSERVE A MONITOR ON THE RIDGE. I spend a lot of time on the ridge between SR97 and Oak Flat Road. Not once was a monitor seen. In the study, a monitor admits that he missed a Bluebird migration in March. Not only did he miss the Bluebird migration flights but also missed the fall migration of Cedar Waxwings that stop for short periods. 4

I take serious issue with the statement that only two sights of Peregrine Falcons were observed. I can understand why. The monitors were rarely on the ridge. I have had many sightings of Peregrines on the ridge, along with both types of eagles, and many other types of birds. I resent the comments that the nesting pair of Peregrines are 12 miles to the east and pose only a minor problem. The nesting pair or their progeny have been in Rock Creek for twenty years. Supposing that they are successful in raising young, where do you think those young peregrines have a twenty five percent chance of going? 5

The point I'm trying to make is that a Avian study has to be in the proposed site, not sitting in a car with binoculars looking at a ridge line two to three miles away. The Juniper Point area is a important rest stop for migrating birds. The study failed to identify the Cedar Waxwings fall migration. As an example, on March 6, 1995, I walked the ridge between Fenton Lane and Miller Road. I saw the spring Bluebird migration. I saw hundreds, along with like amount of robins and varied thrush. I observed a Peregrine Falcon due south of the Bigby Road on the ridgeline, several Red tailed hawks, Turkey Vultures, and two Bald Eagles, and several Swainsons hawks, and many other type birds in that 4 - 5 hour walk. Each season has its different presence of species. It is my opinion that the projected mortality on birds will be much greater in the Juniper Point area than the wind companies are projecting. I read a comment in this EIS that the loss of a Peregrine Falcon to a wind turbine would be acceptable. Acceptable to who? 6

In conclusion, I would urge the policy makers not to rush to

judgement in this matter. There is not a dire need to implement these wind farms. The major motivation is money for the companies and a select few of land owners. I suggest that a comprehensive Avian study be conducted, documenting the observation sites and time and dates involved. Extensive testing must be conducted on electronic communications interference. Indications by the two companies that the cumulative effect of noise may exceed the allowable limits is passed off with no solution. Finally, you must weigh the benefits for the county against the negatives. There is very little benefit to the County as a whole. 7

James C. Gleason

Sheriff, WSP. Retired
409 Hoctor Road
Goldendale, Wa. 98620

Response to April 10, 1995 Letter From James C. Gleason

1. Project-related noise levels generated by the proposed Washington Windplant #1 were estimated assuming a "worst-case" scenario as defined in Section 2.9.4.1 of the draft EIS. Noise levels were estimated using an industry-standard noise model (NOISECALC) and methodology. (Refer to the response for Terry Walker comment no. 6 for a detailed description of the methodology.) Noise levels at Receptor 7 (along Hoctor Road southwest of the Miller Road intersection) were estimated to be approximately 38 dBA. It is unlikely that noise from the windpower facility would be audible at this location because estimated noise levels would not exceed background noise levels.

   In response to concerns regarding low-frequency noise, the aerodynamic noise from wind turbines can include low-frequency impulse noise produced by the interaction of the rotor blades with small scale air turbulence patterns. Low-frequency noise is most commonly associated with wind turbines substantially larger than those proposed for this Project and with wind turbines in a downwind configuration (air passes around the tower before encountering the turbine blades). Turbulence created by the tower structure results in a low-frequency impulse noise in addition to the general aerodynamic noise from the rotors. This impulse noise often involves sound frequencies below the normal audible range. These frequencies are experienced more as a vibrational impulse that is felt rather than heard as a steady droning noise (Jones & Stokes Associates 1985). Studies have shown that low-frequency noise can have adverse health effects. However, low-frequency noise is typically not an issue with the types of wind turbines proposed for this Project. The proposed wind turbine design and proposed upwind configuration would minimize low-frequency impulse noise from the rotors. Section 2.9.4.2 includes mitigation to address the potential for noise standards to be exceeded.

2. See Section 2.12.3.2 of the draft EIS, as modified by Part 3 of this document, for mitigation measures to avoid impacts to communication signals. See also responses to the comment letter from Cellular One. Avoidance of impacts will require careful siting of individual turbines during final design.

3. Comments noted.

4. See General Response No. 10. The field biologists observed by this commentor likely were making fixed point and incidental observations because some survey stations were established along Hoctor Road (see Section 3.4.2 of the Avian Technical Report). The Avian Study Plan used well-established and accepted methods (see response to WDFW comment no. 5). Surveys were conducted systematically. (See Figure 3-3 in the Avian Technical Report for the grid of fixed stations used to survey the area, including sampling of the ridge.)

   Western bluebirds were recorded during field surveys and the potential impacts were identified (Section 4.3.1 [page 4-37] and Section 5.3.2 [page 5-19]) of the Avian Technical Report). Although cedar waxwings were not observed during the surveys, they are one of the passerine bird species that occur in seasonally variable numbers in eastern Washington (Wahl and Paulson 1977; Ennor 1991). Potential impacts to passerine birds are described in Section 2.5.4.1 of the draft EIS.

5. See the response to comment no. 4 above regarding ridge observations. As described in Section 2.5.4 in the draft EIS, the Rock Creek pair of peregrine falcons would be at some risk of collision with wind turbines if the Project is developed, in particular by developing in the eastern portion of the Project site. As part of consultation under Section 7 of the Endangered Species Act, the USFWS is determining whether the Project would jeopardize the continued existence of the peregrine falcon in the Columbia River Gorge.

6. See the response to your comment no. 4. Section 2.5.3 of the draft EIS and Section 4 of the Avian Technical Report describe sightings of various species by season. The commentor's observation of bird species on the Project site is consistent with the observations made by the field biologists during the survey. (Also see response to comment no. 14 from Central Cascade Alliance.)

7. Comments noted. See also General Response Nos. 1 and 4.

930 Sunnyside Blvd.
Everett, WA 98205
April 15, 1995

Mr. Curt Dreyer, Klickitat County Planning Department
228 West Main
Goldendale, WA 98620

Dear Mr. Dreyer:

This is a leter of conditional support for the CARES and Kenetech windfarm proposals.

I am a former Boeing engineer and farmer, and a member of the Snohomish PUD Citizens Advisory Committee on power sources, keenly interested in finding alternatives to the profileration of natural gas-fired power plants. Although solar and geothermal technologies are rapidly evolving, neither compares in cost with present and still developing windmills.

I attended the draft EIS hearing, and believe that the projects will have impacts, some of which must be mitigated as much as possible. Steps should be taken to mitigate avian impacts upon raptors. Road construction and other impacts upon soils and plants should be minimized, and attention paid to prevent spread of noxious weeds. Noise will not be a problem, with the possible exception of limited local areas. I heard no comments on esthetics of the windfarms or possible interference with microwave transmissions. Having driven past and flown over the large windfarms in the Tehachapi and Palm Springs areas, I believe that there will be few significant problems of any nature. 1

The windfarm projects should therefore be approved, subject to the following conditions:

1. Avian impacts should be minimized, taking advantage of the extensive research already under way by Kenetech and others, including the work at the University of Pittsburgh referred to by one of the speakers at the hearing on an ultrasound or RF curtain to prevent bird intrusion, and the use of self-supporting (non-guyed) towers. Construction should be phased so as to install the windmills approaching the oak and white pine treelines last. Bird flight habits should be monitored during project construction. Kenetech has found the avian problem to be highly site-specific, with a no-kill experience at a site in Minnesota. 2a 2b 2c 2d

2. Construction roads should be planned so far as possible to coincide with the eventual service roads needed, to avoid sensitive areas and to minimize wind erosion and transport of noxious weed seeds. Upon completion of the projects, the maintenance roads should be closed to the public, although at least one public viewing lookout and interpretative center should be provided. 3a 3b

3. As installation of the turbines approaches treelines, impact upon deer, squirrels and other wildlife should be monitored. In an extreme (and unexpected) situation, it might be that windmills should not be sited as close to the treelines as presently shown in the plans. 4

4. Noise of operating windmills shoul be monitored in at least three or four of the stations shown in the CARES Draft EIS, both to establish any requirement for acoustic treatment of the towers and nacelles of windmills nearest present or possible future residences, and for use in planning future windfarms. 5

5. The projects should not be scaled back. As they are planned, they are hardly more than demonstration projects. In the case of the Snohomish PUD, the 1/3 participation in the Kenetech project now being considered amounts to only about 1 1/2 per cent of our average load demand.

The projects should be permitted. No better alternative has been proposed.

Joe Heineck

Joe Heineck

Responses to April 15, 1995 Letter from Joe Heineck

1. Comments noted. Mitigation measures to address avian impacts, road construction impacts, and noxious weeds and identified in the draft EIS and in the Preferred Alternative described in Part 2 of the document.

2a. See the response to WDFW comment no. 15. Some approaches, such as the use of ultrasound to prevent bird intrusion, have not yet been sufficiently tested for widespread application.

2b. As described in Section 1.4 of the draft EIS, turbine towers would not include guy wires, thereby eliminating the potential for collision with those wires.

2c. Comment noted. Phased (Sub Area Development) alternatives are considered in the draft EIS. The Preferred Alternative described in Section 2 of this document incorporates phasing and would restrict development on the eastern portion of the site pending an additional season of winter bald eagle monitoring.

2d. Establishing specific monitoring requirements is part of the Section 7 consultation process with the USFWS and the permitting process with Klickitat County. Monitoring was identified as a potential mitigation strategy on page 2-58 of the draft EIS and is included in the Preferred Alternative described in Part 2 of this document.

3a. The draft EIS identifies mitigation that would include routing roads to avoid habitats sensitive to invasion by noxious weeds to the maximum extent possible.

3b. The draft EIS identifies "installing signs to direct users to existing public areas where the development could be viewed" as a mitigation measure.

4. Monitoring of non-avian wildlife is not identified as a mitigation measure because impacts are not expected to be significant. Oak woodlands, the primary habitat of western gray squirrels, would be substantially avoided by the Project. The Preferred Alternative, described in Part 2 of this document, also includes on-site and off-site enhancement/ preservation to mitigate loss of habitat value for oak woodland. See also response to comment 21p in the April 17, 1995 WDFW letter.

5. The comment regarding monitoring noise emissions from three or four stations is noted. The draft EIS addressed impacts from construction and operation of the Proposed Project. Comments referring to the CARES draft EIS are not applicable to the Proposed Action considered in this EIS.

KENETECH WINDPOWER

KENETECH WINDPOWER, INC.
500 Sansome Street
San Francisco, CA 94111
TEL: 415-398-3825
FAX: 415-984-8102

April 17, 1995

Mr. Curt Dreyer
Director
Klickitat County Planning Department
228 West Main Street, Room 150
Goldendale, WA 98620

Re: Washington Windplant No. 1
DEIS Comments

Dear Mr. Dreyer:

Enclosed are the comments of KENETECH Windpower, Inc. regarding the draft EIS for the above project in the Columbia Hills area of Klickitat County. Thank you for the opportunity to comment on this project.

Sincerely,

Steven P. Steinhour
Director, Lands and Permits

Enclosure

BROBECK
PHLEGER &
HARRISON
ATTORNEYS AT LAW

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SPEAR STREET TOWER
ONE MARKET
SAN FRANCISCO
CALIFORNIA 94105

April 13, 1995

VIA MESSENGER

Mr. Steve Steinhour
Director of Lands and Permits
KENETECH Windpower, Inc.
500 Sansome Street
San Francisco, Ca 94111

Re: Joint NEPA/SEPA DEIS for Washington Windplant #1

Dear Steve:

Pursuant to your request, the following is a summary of our general comments on the Joint NEPA/SEPA Draft Environmental Impact Statement for Washington Windplant #1 (the "DEIS"), as well as page references to the pages in the DEIS which correspond to the numbered issues below. Also enclosed is a copy of the DEIS, marked to show our specific comments. Please note that the comment, "See Issue [#]", which appears throughout the marked DEIS, refers to the numbered issues below. In addition, please note that we have reviewed the DEIS for compliance with NEPA, but not for compliance with Washington's SEPA.

1. Traditional Cultural Properties ("TCPs"): Will the consultation with the Yakama Indian Nation regarding TCPs be completed in time for inclusion of the information in the FEIS? What will be done if TCPs are discovered? 1

Pgs. S-10; 2-69

2. Turbine Modification: The DEIS suggests the relocation or modification of turbines as a potential mitigation if studies reveal disproportionately high levels of avian mortality. 2

Pgs. S-15; 1-18; 2-58; 2-59

We would recommend adding the following language to the DEIS to clarify this measure:

Modifications to turbine/tower design features would be made based on monitoring data from the first phases of development. Modification of prior phases would not include replacement of capital items (e.g., rotors, towers, nacelles) but would be limited to relocation within the Project site of turbines associated with disproportionately high levels of avian mortality, painting turbine rotors, or other measures not requiring capital expenditure.

Due to the complexity of the collision issue, a determination to modify turbines based on "disproportionate mortality" would be based on consideration of all of the factors discussed below rather than on any single quantitative formula. As part of the monitoring program, a team of biologists would submit sufficient information on these factors to allow BPA to have the data to make any necessary modification decisions.

a. Number of Annual Mortalities Per Turbine. Large comparative differences in the number of mortalities per turbine might indicate the need for modifications. In the absence of such large differences, however, this factor probably cannot be considered alone due to the limited statistical basis upon which to estimate the number of avian mortalities at each turbine. 3

b. Disproportionate Representation of a Particular Species. A large number of mortalities of a particular species must also be factored into the modification decision due to enhanced concern for potential effects on that species population and further support for theories that something in that species' behavior, foraging strategy or flight mechanics makes collision avoidance with that particular turbine configuration problematic. 4

3. Aesthetics: This section should include the same types of modeling caveats as are included in the noise section (e.g., all turbines may not be 120'; it is unclear how many turbines will be placed in each string, etc.) (see page 2-101 for noise caveats). 5

Pg. 2-73

4. Format: The DEIS does not appear to comply with the following technical requirements of the CEQ regulations: 6

a. The cover memo should contain a list of responsible/cooperating agencies and a one-paragraph

abstract of the EIS. 40 C.F.R. §1502.11(a), (e). Cover Memo, pg. i.

b. The alternatives section should identify the BPA's preferred alternative, if one exists. 40 C.F.R §1502.14(e). 6

c. The list of preparers should include the preparers' qualifications (expertise, experience, professional disciplines). 40 C.F.R. §1502.17. Fact Sheet, pg. ii.

d. The DEIS should include an index. 40 C.F.R. §1502.10(j).

We suggest that you consult with BPA to determine whether BPA believes that these minor format issues should be remedies, and if so how.

Please do not hesitate to contact either Sue or me if you have any questions with regard to this matter.

Very truly yours,

Margo N. Rabinovitz

Enclosure
cc: Susan R. Diamond, Esq.

BPHSF6\MR1\0186670.WP

WINTHROP, STIMSON, PUTNAM & ROBERTS

March 31, 1995

MEMORANDUM

TO: STEVE STEINHOUR

FROM: DONALD CARR

Here are suggested edits for the Washington DEIS.

1. Rider 1-19 — In addition, these CO_2 and NO_x air emissions associated with gas-fired facilities may have adverse effects on wildlife and forest resources which should be considered in the comparison. **7**

2. Rider 1-22 — In fact, pollutant loadings from such fossil fuel capacity could have adverse effects on avian habitat potentially as great or greater than bird losses attributable to windplant collisions. **8**

3. Rider 2-40 — The project-related [i]mpacts to non-avian wildlife involved in . . ..

In addition, the overall environmental consequences and habitat value diminution caused by air, water and hazardous waste releases associated with any other energy form or generating facility would likely be greater than the project impacts. **9**

4. Rider 2-44 — These laws contain prohibitions on taking individuals of protected species which were primarily designed to penalize active, intentional conduct such as unpermitted hunting or commercial use. There have been conflicting court decisions about whether and in what circumstances these prohibitions apply to unintentional conduct such as the construction or maintenance of facilities with which birds or other protected species might collide or otherwise be harmed. USFWS issued an April 28, 1994 memorandum which focuses the inquiry in these circumstances on the windpower developer's efforts to reduce ths impacts on wildlife and to develop safer **10**

windpower technology, rather than viewing individual collisions as violations of the law. USFWS has not yet determined whether particular avian mortality permits will be required for windplant installation, insofar as it will not consider takings violations to occur where the operator is exercising such appropriate care. 10

Whether or not a permit for limited taking of protected species is issued, the USFWS may direct that the windplant be constructed and operated to meet certain stipulations to reduce impacts to birds and other wildlife. Stipulations could include, but are not limited to, using state-of-the-art technology known to minimize wildlife impacts [e.g., using results of research conducted by Kenetech's avian task force], locating facilities away from known avian concentration areas, and scheduling Windplant operations to avoid disturbing avian wildlife during defined critical periods.

This EIS evaluates the full range of estimated avian mortalities and impacts (and those relating to other protected wildlife species) which might be covered by such permits or stipulations, if any.

5. Rider 2-55

Western bluebirds were observed to migrate through the site and also breed on and near the site, and thus it is possible that collision-related mortality and localized population impacts could occur. 11

The Resource Program EIS evaluated overall system alternatives, each emphasizing a different mix of resources. For all system alternatives, conservation is the highest priority resource; however, even with conservation the BPA Resource Program estimates that additional generating resources will be needed in the Pacific Northwest. Renewable resources, including wind power, are given the next highest priority in the Resource Program. In all but two of the system alternatives, gas-fired cogeneration and combustion turbine resources are to be developed as the third highest priority resources following development of renewable resources such as wind power. Thus, combustion turbines are identified as the most likely replacement for renewable energy projects, if those projects are not implemented. Figure 1.10 illustrates BPA's assessment of the relative environmental impacts typically associated with resources considered by BPA.

On a per-MW basis, gas-fired combustion turbines produce more carbon monoxide than all of the other resource alternatives evaluated in the Resource Program EIS, including other thermal resources. Both cogeneration and combustion turbines produce a relatively large amount of carbon dioxide (CO_2), a gas which has been linked to the greenhouse effect and global warming. Combustion turbines and, to a lesser extent, cogeneration also produce oxides of nitrogen (NO_x). In contrast, air quality impacts associated with wind power development are limited to short-term increases in fugitive dust during construction. * Rider 1-19

Cogeneration facilities are developed in conjunction with existing heat-producing industrial operations; combustion turbines occupy a relatively small amount of land on a per MW basis. Therefore, the Resource Program EIS concludes that land use impacts from cogeneration and combustion turbines are much less than the land use impacts from wind power projects, which typically require large tracts of land and can create visual impacts. (The analysis does not, however, take into account the land use impacts associated with development of natural gas fields or pipelines. In addition, combustion turbines would require water for cooling.)

1.6 Alternatives Considered but Eliminated from Detailed Study

This section briefly describes an alternative site that the lead agencies evaluated and eliminated from detailed study and is, therefore, not evaluated in Part 2 of this EIS. The Rattlesnake Mountain Site was previously considered by the Applicant, but the Applicant abandoned the site from consideration based on its initial assessment of possible environmental impacts and on a letter from the Department of Energy (June 25, 1993), indicating that the Record of Decision for wind power development on the site would most likely be unfavorable. Based on an evaluation of this information, Klickitat County and BPA concurred with the Applicant that the Rattlesnake Mountain site would not be a feasible alternative for the Applicant. The following summary information on the Rattlesnake Mountain Site is included for comparison purposes.

In 1991, KENETECH Windpower, Inc. proposed to site a wind energy plant along the ridgeline of the Rattlesnake Hills, located on the Hanford Nuclear Reservation in south central Washington. A portion of the windplant site was located within the southernmost edge of the 168,000-hectare (650-square-mile) National Environmental Research Park at Hanford (the Research Park), established by Congress in 1977. Within the southernmost edge of the Park is the 31,000-hectare (120-square-mile) Arid Lands Ecology Reserve (Reserve). Since 1967, it has

wind, a renewable resource, for power generation and would not result in the irreversible or irretrievable commitment of resources since areas of the site occupied by Project features could be returned to agricultural use following decommissioning of the Project.

Deferring approval would provide time for additional studies of avian use, but could result in cancellation of the Project due to the Applicant's contractual obligations to deliver power. This would eliminate an opportunity to demonstrate a commercial-scale windpower project in Washington and could ultimately lead to development of additional fossil fuel generating resources as discussed in Section 1.4 (No Action) with comparatively greater environmental impacts on a per-MW basis. In addition, cancellation of the Project would eliminate a source of income to the agricultural property owners with whom the Applicant has entered into easement agreements. Given the relatively low level of expected impacts that would result from construction and operation of the Project with the mitigation measures identified in Section 1.4.5 and Part 2 of this EIS, the benefits of approval at this time may outweigh the benefits of additional studies.

Ridw 1-22

2.4.6 Restricted Areas Alternative

Environmental review for the proposed Project revealed no areas that should be restricted from development based on impacts to wildlife. However, impacts to western gray squirrels would be reduced by avoiding development in oak habitat to the maximum extent possible.

2.4.7 Subarea Development Alternative

2.4.7.1 Environmental Impacts

This alternative would restrict Phase 1 project development to either the western area (Option 1) or east-central area (Option 2) of the site as shown on Figure 1.8. Table 2.3.8 shows the habitat types that would be disturbed during construction of each of these options. Both options would reduce Phase 1 impacts to Oregon white oak habitat, relative to the Proposed Action. Option 1 would result in Phase 1 loss of 2 hectares (5 acres) of this habitat type; Option 2 would result in loss of 8 hectares (19 acres). Oregon white oak provides habitat for the western gray squirrel. Option 2 would avoid disturbance to the large western habitat complex described in Section 2.3.3. Option 1 would avoid disturbance of juniper habitat, which supports the juniper hairstreak. Both options would avoid development in cliffs, talus, or rock outcrops—areas that provide habitat for bats, including federal candidate species and reptiles.

Both options would limit Project construction activities to a specific area of the site. This would reduce impacts to wildlife with larger home ranges by allowing them access to areas that would be relatively undisturbed by human activity.

2.4.7.2 Mitigation

Mitigation would generally be the same as listed for the Proposed Action in Section 2.4.4.2.

2.4.8 No Action

Rider 2-40

Impacts to non-avian wildlife caused by Project construction and operation would be avoided if the agencies do not issue the required permits and approvals. However, ongoing agricultural and grazing activities would continue. Agricultural use could include future clearing of Oregon white oak, which provides habitat for the western gray squirrel, and juniper savannah, which provides habitat for the juniper hairstreak.

2.4.9 Significant Unavoidable Adverse Impacts

No non-avian federally threatened or endangered species would be affected by the Project or alternatives. Primary habitat (rock and talus areas) for the northern sagebrush lizard (federal candidate) is not expected to be affected by the Project. Primary roosting habitats (rock and cliff areas) for the fringed myotis and small-footed myotis (federal candidates) would generally not be affected, although the Project would create the potential for bat collisions with wind turbines. The amount of Priority Habitat that would be removed is minor in relation to that available on

- **Ridge face.** This unit includes the steep, south-facing slopes and cliffs of the ridge situated on the southern edge of the study area. The study unit, which parallels State Route 14 (SR-14), begins approximately 1 kilometer (0.6 mile) west of Juniper Point and continues about 13 kilometers (8 miles) east.

2.5.2 Regulations, Standards, and Guidelines

Klickitat County's Comprehensive Plan has established an overall goal of identifying and preserving wildlife.

As with the animal species discussed in Section 2.4, avian species can be listed as threatened or endangered at the federal level and as threatened, endangered, or otherwise sensitive at the state level. These federal and state classifications are summarized in Table 2.3.1. At the federal level, species listed as threatened or endangered are protected under the authority of the Endangered Species Act. Section 7 of the Endangered Species Act requires federal agencies to consult with the USFWS on actions leading to activities that may affect listed threatened or endangered species. Other federal laws include the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

* * Ridw 2-44

In Washington, state management classifications include "sensitive" and "monitor" in addition to threatened and endangered. State-listed threatened or endangered species are not specifically protected by state statute or regulation, but are listed to assist with agency management efforts and decision making. Species may be listed at the state level because of rarity, vulnerability to disturbance, or other factors. Communal bald eagle roosts and nest sites are protected under WAC 232-12-292, the Washington State Bald Eagle Protection Rules.

2.5.3 Affected Environment

2.5.3.1 Special-Status Species

General

Consultation with resource agencies, literature review, and review of habitats in the Project vicinity identified 22 special-status bird species that could potentially be present on or near the Project site. Table 2.5.1 lists the federal and state status of these species, as well as their habitat associations. One species—the peregrine falcon—is federally listed as endangered. The bald eagle is federally listed as threatened. Six other species (black tern, burrowing owl, western sage grouse, northern goshawk, long-billed curlew, and ferruginous hawk) are candidates for listing under the Endangered Species Act. Peregrine falcon and bald eagle are also listed as state-endangered and threatened, respectively. Sandhill crane is a state-listed endangered species, but is not federally listed.

Of the 22 special-status species that could potentially use or fly over the Project site, seven (western sage grouse, gray flycatcher, burrowing owl, grasshopper sparrow, bank swallow, black tern, and sage sparrow) were not observed in the study area nor were they listed as present by the WDFW Priority Habitats and Species data base. While these species may be

Other Special-status Species

Special-status species that would be most vulnerable to collisions with turbines due to the risk factors described in Table 2.5.4, include golden eagle, Swainson's hawk, and western bluebird. Although golden eagle most frequently use areas of the Project site that would not be developed with wind turbines, the foraging behavior of golden eagles makes them relatively susceptible to collisions with wind turbines. Golden eagle mortality at the Applicant's windplant in Altamont Pass in California was the third-highest of all species (Biosystems Analysis, 1992). Because golden eagles breed at low densities and only one active nest has been verified in the primary study area (two in the extended study area), any mortality that did occur could affect the local breeding population. In 1990, golden eagle populations in Washington were estimated at 80 breeding pairs (Rodrick and Milner, 1991).

Because of its foraging habitat preferences and foraging flight behavior, Swainson's hawk would be vulnerable to collisions with turbines. Eighteen individuals were observed on site. Two hundred and twenty-eight Swainson's hawk territories have been documented in Washington.

~~Western bluebirds were observed to migrate through the site and also breed on and near the site, and the Project could cause mortality and localized population impacts.~~ However, as a passerine, western bluebirds are less likely to be vulnerable to collisions than are raptors (Biosystems Analysis, 1992). Site observations were not at a level that would suggest that a significant portion of the County population moves through the Project site during migration. In addition, it would be highly unusual for these birds to follow such a defined migration route. Western bluebirds are believed to move through the County in a relatively broad front, which includes the Project site. Bluebirds have been observed in other locations in Klickitat County such as Lyle, 35 km (21 miles) west of the Project site (Wahl and Paulson, 1991).

Rider 2-55

Responses to April 17, 1995 Letter from KENETECH Windpower

1. See General Response No. 5.

2. Comment noted.

3. Because of the small level of mortality per turbine, as has been found at other sites (as described in Section 5.2 of the Avian Technical Report), several years of data may be required to obtain statistically significant differences in mortality.

4. The species affected would likely be a consideration of any monitoring plan. Emphasis on monitoring would likely be on those species having a disproportionately higher mortality or on those with special protection under the Endangered Species Act.

5. Comment noted. Part 3 of this document modifies the text of Section 2.7.4.1 of the draft EIS to address these comments.

6. The cover memo has been modified to address this comment. This document identifies a Preferred Alternative in Part 2. A list of preparers and qualifications is included in the Appendix of this document. A detailed Table of Contents was included in the draft EIS and also serves as an index.

7. Part 3 of this document modifies the text of Section 1.5.4 of the draft EIS to acknowledge this issue. See also General Response No. 4.

8. Comment noted. Although pollutant loadings from fossil fuel plants are known to have adverse effects on forest resources and other habitats, there is insufficient information available to conclude that avian losses on a per-MW basis from fossil fuel plants would be "as great or greater than" avian losses attributable to windplant collisions.

9. A comparison of the Proposed Action with other electrical generating alternatives is included in Section 1.5.4 of the draft EIS and in BPA's Resource Program EIS, which is incorporated by reference.

10. Comment noted. The EIS has been corrected as indicated in Part 3 of this document. See also General Response No. 9.

11. Comment noted.

April 14 1995

Dear Klickitat County Commissioners,

We would like to voice our support of the Columbia Hills Windplant that has been proposed by Kenetech Windpower. We believe that encouraging alternative sources of energy should be a top priority for public officials everywhere, and that compared to coal-fired, nuclear-powered or hydro-based projects, windpower is likely to have the least negative impacts to the environment. 1

There are some concerns, however, as to avian deaths and impacts to native plant societies. Having been involved with the advisory group that Kenetech formed from community members, we believe that the company is willing to take the necessary steps to mitigate these problems. As one of the lead agencies, the Commissioners of this county need to make sure that all possible steps are taken, to insure that the developers of this project comply with the necessary laws for protecting the natural resources of the area. This does not mean, however, that all new projects must be automatically rejected as some people would like to believe. We would encourage you to look carefully at the alternatives discussed in the mitigation recommendations of the DEIS for Washington Windplant #1, and with the assistance of wildlife biologists, approve the permits needed, with conditions requiring continued monitoring of the area's wildlife. 2

Sincerely,

Larry Miles

Larry Miles

Modene Miles

Modene Miles

P.O. Box 907
Lyle, WA 98635

Response to April 14, 1995 Letter from Larry and Modene Miles

1. Comments noted. The Bonneville Power Administration has already addressed some of the comparative environmental impacts associated with these sources of energy in the environmental impact statement for its 1992 Resource Program (USDOE-BPA, February 1993), which is incorporated by reference.

2. Klickitat County is the SEPA lead and Conditional Use Permitting agency. As part of this permit review and approval process, each of the alternatives will be evaluated based upon information and the evaluation provided in the EIS. After reviewing the evaluation, reviewing the Planning staff report, and conducting a public hearing, the Klickitat County Board of Adjustment will make a decision about whether to issue the Conditional Use Permit and, if so, the conditions that will be attached to the permit for monitoring and mitigation.

Rec'd 4/17/95 KPF

National Audubon Society

Western Regional Office
555 AUDUBON PLACE, SACRAMENTO, CA 95825 (916) 481-5332

Delivered by Fax to: 503-230-5699

April 17, 1995

Bonneville Power Administration
905 NE 11th Avenue
Portland, OR 97232
Attention: Kathy Fisher

Dear Ms. Fisher:

RE: Comments of the National Audubon Society, on the proposed Washington Windplant #1 in the Columbia Hills, Klickatat County, WA.

The National Audubon Society opposes the development of the proposed Washington Windplant #1 in the Columbia Hills.

Because of well-documented impacts of wind development on native bird populations, especially birds of prey, in many locations in the United States, the National Audubon Society supports a moratorium in the development of wind plants in *important bird areas*, until design improvements can be made to significantly lessen bird mortality. 1

National Audubon relies on the analysis of our local chapters, input from knowledgeable wildlife agency biologists and our own professional judgment to help guide us in determining whether or not a particular site qualifies as an *important bird area*.

Local Audubon chapters including the Columbia Gorge Audubon Society and the Portland Audubon Society have presented us with sufficient information for us to agree with them that the site for Washington Windplant #1 qualifies as an *important bird area*. Therefore, we believe that wind development at this site is premature given current design limitations and the marginal effectiveness of the proposed mitigation measures.

We understand that the proposed site possesses many habitat values for birds including a communal bald eagle roosting site, a golden eagle nest site, two golden eagle territorial ranges, a peregrine falcon territory, a prairie falcon nest site, and habitat for the long-billed curlew and the western bluebird. 2

National Audubon staff scientists have reviewed the avian studies associated with the environmental review. We have concluded these studies do not adequately address the long term impacts of wind power development on key bird populations. If this site is acceptable to permitting agencies, then so will many, many more be acceptable. That means the current projects will be contributing to a much greater industrial development than discussed in the EIS. There is an urgent need for a cumulative impact assessment that goes beyond the proposed project. 3

National Audubon recommends that the United States Department of Energy (DOE) do a "programmatic" impact statement – one that would assess the cumulative impacts in the Washington, Oregon, and California area of DOE actions in support of wind power. Such a study should assess the long-term impacts of the many of thousands of wind turbines that might one day exist in the region because of government support. 4

Thank you for the opportunity to comment on this project.

Sincerely,

DANIEL TAYLOR
Western Regional Representative

cc Jan Beyea, NAS
Jim Pissot, NAS
Portland AS
Columbia Gorge AS

TOTAL P.02

NATIONAL AUDUBON SOCIETY

700 Broadway
New York NY 10003-9562
April 15, 1995

Jill Barker
POB 572
Mosier OR
97040

COPY

Dear Jill,

Thanks for the material you sent me about the problem of wind turbine generators which kill birds. I understand your concerns; I have been involved with this issue for at least two years as the same problems exist here in the San Francisco Bay area. The regional Audubon Council adopted a strong resolution, sent to Kenetech and to the California State agency which regulates their operations. It said that the Bay Area Audubon Chapters were opposed to any further development of wind turbines in this region until the problem of bird killing was solved. I had hoped you would get the Oregon Council to adopt a similar resolution. Such group activity is usually much more effective than if any one chapter or its members alone attack the situation.

To my knowledge, no further turbines have been built in this area, nor have applications appeared.

I have been in contact with Jan Beyea during this period. He and others have been engaged with workers at Kenetech to develop a real study of methods that could decrease the bird killing by these machines. I do not think they have resolved the issue, but understand that several studies are underway, nontheless.

It is not clear to me that a cage of some sort couldn't be built around the whirling propellor that would deflect a significant portion of birds that might collide with them. That is, after all 19th century technology that has worked well for the last hundred years. 5

I am sorry I do not have any more specific answers, but that is the best I can do at present.

Sincerely,

GE.

George Ellman, Regional Board Member
13285 Arnold Drive
Glen Ellen CA
95442

c Western Regional Office, NAS
Kathy Fisher, ECN3
Curt Kreyer, Klickitat County
Jan Beyea, NAS
A. Feinstein
nas\barker

Responses to April 17, 1995 Comment Letter from the National Audubon Society

1. The Nation Audubon Society's opposition to the Project is noted. See General Response No. 11, which addresses concerns regarding the Columbia Hills as an important bird area.

2. These species are identified and addressed in Section 2.5.3 of the draft EIS.

3. See General Response Nos. 2 and 10.

4. See General Response No. 2.

5. Comment noted.

NORTHWEST ENVIRONMENTAL ADVOCATES

Columbia-Willamette
RiverWatch
133 S.W. 2nd Ave. #302
Portland, OR 97204

April 17, 1995

Curt Dreyer
Klickitat County Planning Department
228 West Main St., Room 150
Goldendale, WA 98620

Kathy Fisher
Bonneville Power Administration
PO BOX 12999
Portland, OR 97212

Dear Mr. Dreyer & Ms. Fisher:

Following are the comments of Northwest Environmental Advocates on Draft Environmental Impact Statement (EIS) for the Coulmbia Wind Farm #1 (Project) issued by Bonneville Power Administration (BPA) and Klickitat County, Washington. Overall NWEA is supportive of the project and believes that the comments below will improve it's environmental performance.

The EIS should:

1. compare the environmental impacts of other energy producing alternatives such as natural gas combustion turbine. The assessment should contain comparisons of air pollution impacts including CO2 effects and water quality and quantity impacts, especially as they effect fish; 1

2. account for differences in this project with other wind projects when estimating cumulative raptor mortality. For instance, the use of tubular tower design and differing turbine and rotor design. We believe that when credit is taken for these differences the estimated impact should be far below the "1.7 to 5.8 birds per 100 turbines;" 2

3. develop or choose the preferred alternative that minimizes the impact on white oak and associated habitat; 3

4. better identify western grey squirrel habitat in the project area and if necessary outline was to minimize those impacts; 4

5. develop a long term monitoring program for raptor and other bird impacts and identify possible mitigation programs; and 5

302 Haseltine Bldg., 133 S.W. 2nd Ave., Portland, OR 97204-3526 (503) 295-0490 FAX 295-6634

6. develop strategies to discourage unnecessary vehicular use of the project area. 6

In determining cumulative impacts through this EIS, focusing solely on the KINETECH and CARES projects is the proper scope. When future projects are proposed the time may be ripe for much large focus on the cumulative impacts of wind power in Columbia River Gorge. 7

Thank you for the opportunity to comment on this project and we look forward to reviewing the Final EIS.

Sincerely,

Eugene Rosolie
Green Power Project, Director

NORTHWEST ENVIRONMENTAL ADVOCATES

Columbia/Willamette
RiverWatch
133 S.W. 2nd Ave. #302
Portland, OR 97204

April 19, 1995

Curt Dreyer
Klickitat County Planning Department
228 West Main St., Room 150
Goldendale, WA 98620

Kathy Fisher
Bonneville Power Administration
PO BOX 12999
Portland, OR 97212

Dear Ms. Fisher & Mr. Dreyer:

Our comments faxed on April 17th incorrectly referenced the Draft Environmental Impact Statement (EIS) for the Coulmbia Wind Farm #1 (Project). The proper reference is Washington Windplant NO. 1 Project Draft NEPA/SEPA Environmental Impact Statement.

Sincerely,

Eugene Rosolie

Eugene Rosolie

Post-it® Fax Note 7671	Date	# of pages ▶ 1
To Curt Dreyer	From E. Rosolie	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

302 Haseltine Bldg., 133 S.W. 2nd Ave., Portland, OR 97204-3526 (503) 295-0490 FAX 295-6634

Responses to April 17, 1995 Comment Letter from Northwest Environmental Advocates

1. See General Response No. 4.

2. These Project features are part of the design as discussed in Section 1.4 of the draft EIS and the design factors are expected to reduce mortality at the site. However, the site factors (vegetation and topography) and avian behavioral factors (flight patterns and habitat use) introduce additional variables that must also be considered when estimating impacts. Because the relationship of these variables to avian mortality are not fully known, the analysis used worst-case assumptions and did not reduce predicted mortality based on design factors alone.

3. Comments noted. Alternatives that minimize the loss of oak habitat are included as part of the environmental analysis under the Alternative Overhead Powerline Route described in Section 1.5.1 of the draft EIS. In addition, measures to reduce loss of oak habitat and mitigate losses are included in the Preferred Alternative (see Part 2 of this document).

4. As discussed in Section 2.4.4.1 of the draft EIS, all oak and oak/pine woodlands are assumed to be occupied by western gray squirrel. Measures to mitigate potential impacts to western gray squirrel are identified in Section 2.4.4.2 (page 2-39) of the draft EIS as modified by Part 3 of this document and are included in the Preferred Alternative described in Part 2 of this document.

5. Support for a monitoring program is noted. Monitoring was identified as a potential mitigation measure in Section 2.5.4.2 (page 2-58) of the draft EIS and is included in the Preferred Alternative described in Part 2 of this document.

6. The preparation of a site access plan is identified as a potential mitigation measure in Section 2.3.4.2 (page 2-27) of the draft EIS. Locked gates are part of Applicant's proposal. However, the Applicant only has easements to the Project site and does not have authority to regulate access provided by the landowners.

7. Comment noted. See General Response No. 2.

Received 3/6/95
lift

PANACEA, *Incorporated*

28 February, 1995

Kathy Fisher
ECN3, Bonneville Power Administration
905 NE 11th Avenue
Portland, OR 97232

Dear Kathy:

I have received, and preliminarily reviewed, the Draft EIS for Washington Windplant #1. First, let me say I found the document generally quite good. The approach was comprehensive, and each aspect was given thorough, uniform coverage. I think the people at R.W Beck did a better than usual job.

I do, however, have a few criticisms - most of them "quibbles:"

- On page 2-10, the direction of the drainages relative to Bigby Road are reversed - the west drainage is to Swale Creek, while Rock Creek lies to the east. **1**
- On page 2-28, any effective steps to exclude livestock from reseeded native grasslands may well be more disruptive than general construction. Fairly heavy fences would be required to exclude cattle, while fairly high ones would be required to exclude deer. If landholders were to be compensated for not running livestock for two or three years, the costs would be very large. **2**
- On page 2-88, the statement is made that manufacturing employment has fallen by about 8% since 1980. I seriously doubt the accuracy of these numbers; but, assuming they are true in the absolute, they ignore the history of the past 14 years. In 1980, the (then) Martin Marietta Aluminum plant employed over 800 people (@ union wages). Since that time, employment at that facility rose to approximately 1200, then fell to about 600. Concurrently, the Boise Cascade lumber mill at Goldendale and the Champion mill in Klickitat have closed. On the plus side of the ledger, the Roosevelt Regional Landfill has provided about 100 new (albeit very remote) jobs. I can think of no other significant developments. **3**
- Some table providing an estimate of the number of turbines in each string should have been provided. The view simulations indicate someone used some sort of guide, but the information is never presented. **4**

As a general comment, the EIS puts too much of a "microscope" to the specifics, and fails to address the broader environmental issues:

- As a case in point, the western gray squirrel may be "state-threatened," but it is common in Klickitat County to the point of being a nuisance. "Gray diggers" are probably the single most common (live) targets for boys with .22 rifles. The squirrel, some of whose nesting sites may well be disturbed by construction and the fragmentation of scrub oak thickets, will be the beneficiary of disturbances to the **5**

840 Maple Drive, Goldendale, WA 98620
(509) 773-4622 (phone/FAX)

coyote, and red-tailed hawk populations. (I am assuming that rattlesnakes and the other raptors mentioned actually have a minimal impact on squirrel populations). At any rate, I am confident that - after ten years or so - predator/prey ratios will return to 1:19 as seems to be universal throughout nature.

- Red-tailed hawks are the most at risk from turbine collisions, both because of their numbers and because of their flight behavior. The report correctly states these are the most common raptors in the project area. It might be fairer to point out that these are the most common raptors in the whole United States. Though they will undoubtedly account for most of the fatalities, they are by no means endangered. 6
- Though I have not personally observed it, I believe the local peregrines primarily prey upon the pigeons that are common to the Burlington Northern Railroad tracks which parallel SR 14. Flocks of pigeons are common to the area below the site, feeding on "volunteer" wheat growing from grain lost from railcars and farm trucks. 7

I found the "Visual Impact" section of the EIS to be the most interesting. I have suggested to the County Planning Department (to Francine Havercroft, when she was still there) that some mitigation of visual impacts be offered by providing an "Interpretive Center" (in the form of an observation point and wind energy museum) on the southernmost of the two Lorena Buttes. This suggestion, of course, is fraught with difficulties in terms of obtaining land, building road access, etc. The photograph from the Stonehenge War Memorial, however, clearly shows it would be an excellent site for such a center. Until I saw these photographs, I had never realized how much of the project "cascaded" down the hills to the south. The near constant stream of visitors to the MOD-2 turbines (when they were still present), demonstrated the public interest that exists in turbines; and a viewpoint at Stonehenge would be popular, instructive, and "doable." 8

In summary, I think the study was good, and the environmental impact of the proposed project is acceptable. I favor development of renewable energy sources, generally, and think that Kenetech should be allowed to "get on with it." I only hope the BPA/CARES project does as well. 9

Finally, I wonder if it would be possible to make this report (and its appendices?) available on PC compatible diskette? For those of us with word-processing capabilities, diskettes provide quick search and cross-referencing capabilities. Reproduction and mailing costs would be much reduced. In the past, I have obtained diskettes from Beck for the County Solid Waste Management Plan and the Moderate Risk Waste Management Plan. I know their word-processing system is capable of providing "WordPerfect" format files, which would be totally acceptable to me.

Warmest Regards,

Tom Moughon

840 Maple Drive, Goldendale, WA 98620
(509) 773-4622 (phone/FAX)

Responses to February 29, 1995 Letter from Panacea, Incorporated

1. Part 3 of this document corrects this error.

2. Comments noted; however, without livestock exclusion efforts to reseed and re-establish plant communities might not be successful, leading to increased spread of noxious weeds on the site. This situation would, in the long term, degrade the value of Project lands for grazing and agriculture. Therefore, the draft EIS includes mitigation that would involve livestock exclusion from disturbed areas until vegetation is successfully re-established.

3. Comments noted.

4. Part 3 of this documents adds this information to Table 2.3.5 of the EIS.

5. The commentor may be confusing the western gray squirrel with a similar-looking species, the Columbian ground squirrel. The ground squirrel is very common and visible in the area. Western gray squirrels are rarely seen because they tend to remain near woodlands.

6. The observation regarding the distribution and abundance of the red-tailed hawk is noted.

7. Peregrine falcons are most likely to forage near the Columbia River, but they are known to travel widely while foraging, including to areas well away from the river. Because of this, and because peregrine falcons were observed near areas proposed for turbine development, the possibility of mortality cannot be dismissed, although this EIS concludes the probability would be low.

8. Comment noted. The draft EIS and the Preferred Alternative identified in Part 2 of this document discuss this issue. Mitigation analyzed in the Preferred Alternative, if adopted as conditions to the Conditional Use Permit, would require the Applicant to provide signage to public areas, such as Stonehenge, from where the wind development could be viewed.

9. Comment noted.

PORTEOUS MINES

Stuart E. Porteous, Pres.
P.O. Box 31916
Seattle, Washington 98103

K. Fisher - ECN
Response Due: Marg Nelson-ST
cc: A-2, MG, Cindy Custer-CK

Specializing in Rare Northwest Gemstones
206 / 547-3958

3.22.95

RECEIVED BY BPA ADMINISTRATOR'S OFC-LOG #: 95-0417
RECEIPT DATE: 3-31-95
DUE DATE: 4-21-95

Randy Hardy
Bonneville Power Administration
Portland, OR

Dear Mr. Hardy -

I urge you to pursue the development of the Columbia Hills Wind Project. I am of the belief that the efficiency of wind power has increased substantially to the point where the combination of environmental 'pros' and possible economic 'cons' more than offset the continued reliance on fossil fuels. And perhaps the project will not eventuate in ~~fewer~~ hydroelectric facilities. But to meet future demand we need to look for reasonably cost effective, enviro-friendly substitutes before we pass on the fossil fuel fix that is just cheap enough (now) not to kick. You have the opportunity to do something valuable for coming generations. Please be a future-looking steward. 1

I would appreciate any information that would help me better understand the arguments being made regarding this project. Thank you.

Stuart E. Porteous

Response to Comment Letter Dated March 22, 1995 from Porteous Mines

1. Comments regarding the Project are noted.

TO: Kathy Fisher, ECN3
Bonneville Power Administration
905 NE 11th Avenue
Portland, OR 97232

FROM: Lynn Herring, Conservation Committee
Portland Audubon Society
5151 NW Cornell Road
Portland, OR 97210

SUBJECT: Proposed Windpower Facility Sitings in the Columbia Gorge and specifically the proposed Washington Windplant #1 in the Columbia Hills, Klickatat County, Washington

DATE: April 17, 1995

I am writing on behalf of the Portland Audubon Society, Conservation Committee, to express our overall concerns about proposed windpower facility sitings in the Columbia River Gorge and related impacts upon wildlife. The Gorge is an important migratory corridor for avian fauna and home to many unique wildlife and plant species. The Gorge is most definitely an important bird area. 1

While we wish to address the currently proposed Kenetech/CAPES wind farm site along the Columbia Hills southeast of Goldendale, we call for a full, cumulative effects analysis to address all proposed wind farms in the Gorge. 2

After all, the cumulative impacts of Washington Windplant #1 and over 400 wind turbines on nearly 14,000 acres in just the Kenetech/CAPES project is only part of a larger scenario for proposed wind power development in the Gorge.

The wind power industry has not yet proven that its turbines do not destroy significant numbers of birds and/or their habitats. Since the Columbia Gorge is an important bird area, we must oppose all wind farms in the area, until the industry designs turbines that do not kill birds or take their habitat. 3

Accordingly, we oppose the proposed Washington Windplant #1, in the Columbia Hills, Klickitat County, Washington. The site features a bald eagle communal roost site, a golden eagle nest site, two golden eagle territorial ranges, a peregrine falcon territorial range, a prairie falcon nest site and habitat for some 18 raptor species. 4

Compliance with Federal Laws:

Wind farms should not be permitted to violate Federal laws, including the Endangered Species Act, Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act by killing Federally protected birds, such as eagles and peregrine falcons. 5

While the industry has not yet proven that its turbines do not destroy significant numbers of birds and/or their habitats, technically the killing of even one protected creature should not be permitted by a wind power corporation when an individual found guilty of killing a Federally or state listed species can most certainly be fined and/or otherwise prosecuted.

Need for siting criteria and data standards:

We would like to reiterate the position taken by the Oregon Audubon chapters in November 1994: "The Oregon Audubon Council recognizes that windpower, a potentially desirable source of renewable energy, can have detrimental effects on wildlife. We support development of siting criteria and data standards to ensure protection of ecological values prior to development of windpower facilities." 6

It is imperative to fully assess both resident and migratory avian population patterns over the course of several years rather than relying on a one-year study, which may not reflect variable bird use. 7

In closing, we call your attention to the concerns expressed by the National Audubon Society in opposition to this project. The National Audubon Society supports a moratorium in the development of wind plants in important bird areas until design improvements can be made to significantly lessen bird mortality.

Thank you for the opportunity to comment on this most important issue.

Response to Comment Letter Dated April 17, 1995 from the Portland Audubon Society

1. See General Response No. 11.

2. See General Response No. 2.

3. See General Response No. 11. Avian mortality is an expected consequence of the Proposed Action and alternatives, as described in Section 2.5.4 of the draft EIS. Mitigation measures have been identified to minimize impacts to avian and wildlife resources.

4. The Portland Audubon Society's opposition to the Project is noted. The species and features identified in your comment were identified during field studies and described in Section 2.5.3 of the draft EIS.

5. See General Response No. 9.

6. Comments noted. See General Response Nos. 2 and 4.

7. See General Response No. 10.

April 15, 1995

Attn: Curt Dreyer

Re: EIS Draft for Kenetech & CARES Projects

I would like to make the following statements and comments regarding the above projects after what seems a short time for responding.

1. Statements regarding limited loads during times of County road restrictions, I think further study would indicate most empty trucks are overloaded on the front axle according to weights permitted. I also believe an assessment of the County road before and after by the County and the Proponets is absolutely necessary. Associated costs for the assessments and road repairs, if required, would be reimbursed by the proponets. This would alleviate the problems that ~~seemed~~ occured with M100-2, refusal by DOE/BPA Contractors to acknowledge road restrictions and reluctance by DOE/BPA to accept responsibility for damages. The Proponets need to commit to no operation of overweight vehicles during road restrictions. 1 2 3

2. With the exception of minor mention of the Walker property there is no mention of the existing 42± lot subdivision located within Sections 11, 12, 13 of T.3N., R. 16 E.W.M. which I believe involves several owners and is in close proximity of turbine strings. 4

3. I was quite disappointed after making written concerns during the scoping process, there was very minimal mention of the impact by increased tourist type traffic. As previously written, we witnessed very substantial increases in traffic during and <u>after</u> M100-2 construction due to extensive promotion by DOE/BPA, local P.U.D. and others. The existing road is narrow, quiet, rural in nature with minimal traffic, we also have quite a lot of farm equipment movement, moving of cattle 5

and a designated bicycle route. As suggested before, I now urge the Proponets to establish a tourist observation/ interpretative facility in the Maryhill area and promote the facility as the site for observation. Klickit County does need the tourist industry. The traffic can best be handled off the State Hwys. and the Maryhill area is logical with other tourist attractions in the area.

Thank you

Ray Thayer
391 Hector Road
Goldendale, WA. 98620

Response to Comment Letter Dated April 15, 1995 from Ray Thayer

1. Comment noted.

2. The draft EIS in Section 2.11.4.2 includes a mitigation measure that, if adopted as a condition of approval, would require the Applicant to support a County survey of roadway conditions before and after construction and to pay costs associated with Project damage to Hoctor Road. This mitigation measure is also included as part of the Preferred Alternative described in Part 2 of this document.

3. Comment noted. Part 2 of this document includes such a restriction as part of the Preferred Alternative.

4. Figure 2.8.1 indicates the location of these properties which were platted prior to the "Extensive Agriculture" zoning designation. The Walker property (noise receptor no.16) represents the "worst case" situation with regard to noise impacts in this previously platted area because it is located closest to the proposed turbines.

5. The draft EIS addresses the potential for increased tourist traffic in Sections 2.7.4.1 (p. 2-81). Mitigation, in the form of providing signs to direct sightseers to public areas where the Project could be viewed, is described in Section 2.7.4.2. It should be noted that, unlike the MOD2 turbines, the turbines for this Project would be visible from a number of public viewing areas along the Columbia River (i.e., the Stonehenge/Maryhill area). In contrast the MOD2 turbines could only be viewed by driving along Hoctor Road.

Rec'd 4/10/95
LET

Ronald R. Wiggins
P.O. Box 493
Big Timber, MT. 59011

April 8, 1995

Kathy Fisher
ECN3 Bonneville Power Administration
905 N.E. 11th Avenue
Portland, OR. 97232

reference: Draft Environmental Impact Statement FEB 95
Washington Windplant #1
proposed by: Kenetech Windpower Inc.

Dear Ms. Fisher,

The draft EIS does not correctly address several issues and completely leaves out other issues.

First the issue of noise impacts; The DEIS mainly addresses noise in the A-weighted scale (dBA scale), when actually low-frequency noise from wind turbines is the worst. See exhibits #1,3,4,5,6,8,9,10,&17. Your conclusion of sec. 2.9.9 on pg2-105 is wrong, and the cumulative impacts of 3.3.9 on pg3-14&3-15 does not cover low frequency and infra-noise. See also exhibit #18. 1

Secondly, the issues of aesthetics are grossly underestimated. The still life black and white photos with wind turbines cannot approach the reality of spinning turbines in real life. The sec.2.7.9 on pg 2-83 is completely inaccurate by omission. The "some" people who would likely view the changes as adverse are about 99%, whereas the "others" who would view the changes as favorable are about 1%; also not just "residents", but millions of visitors traveling along I-84. See exhibits #1,2,3,6,7,8,9,10,17,&18 to see how people view existing wind turbine projects. 2

Thirdly , the Avian impact is greatly underestimated, just as it was not even considered at Altamont Pass before it was undertaken. See exhibits #1,3,7,8,9,11,12,13 & 20. 3

Fourthly, an issue that is not even mentioned in the DEIS is the danger of fires started by wind turbines. See exhibits #14,15,&16. Sec. 2.8.9 on pg 2-95 is wrong. 4

Lastly the impact of declining property values as a result of wind turbines is not addressed. See what has happened in Calif., Great Britian, and Denmark. Exhibits #6,8,17&18. 5

Very Sincerely

Ronald R. Wiggins

COUNTRY GUARDIAN Newsletter

May, 1994

A Reminder

Country Guardian's First AGM

Please help to make this, our first national gathering, a huge success **by being there!**

Forte Post House, Alveston, near Bristol

Saturday May 14 1994 at 2 pm

COUNTRY GUARDIAN

A Society opposed to the desecration of our countryside by wind farms

Chairman: Joseph Lythgoe

Swinhoe House, Culcheth
Warrington WA3 4NH
Telephone: 0925 764106
Fax: 0925764439

Editor: John Dodds
Telephone: 091 285 7713

Clean Crazy!

The Committee Report (right), published in 'City and County', the journal of the Northumberland and Newcastle Society, shows clearly how misguided is public opinion about the so-called 'clean energy' of wind power generated electricity.

Country Guardian provided all the help and statistics the Committee could possibly need, and some of the drawbacks of the proposed wind farm have been acknowledged, yet the myth that it would reduce pollution prevailed. **Clearly we must try harder to get our message through.**

Kielder's designed rating is 80 megawatts, its 'Declared Net Capacity' is 34 megawatts. If and when it is constructed it should generate somewhere around 200 gigawatt-hours per year if its operating efficiency is on a par with existing wind farms. This is a 0·00074th part of UK's electricity requirement, not enough to cause more than a flutter on the National Grid and will certainly not result in any pollution-emitting fossil fuel station being shut down.

Noise and visual degradation are important objections to wind farms to people who live near or are familiar with proposed sites, but they don't seem to cut much ice with people who will not have to suffer these enormities. The well publicized economic and financial follies of wind energy fall on ears deafened by too many similar absurdities. Even the 'green' argument that turbines will kill birds and other animals raises no more than a gentle 'tut-tut'. It appears that only emotive terms like 'global warming', the 'greenhouse effect' and 'acid rain' can motivate the public, and wind energy is seen as a way of escaping from its consequences.

Continued on page 2

EXHIBIT #1

although the site is only just outside the National Park and is visable from within it and from the Roman Wall, and has remoteness qualities, about half our Committee judged that the "clean energy" benefits outweighed any perceived disbenefits. The committee was, however, unanimous in requesting a Public Inquiry because of the sheer size of the scheme and its controversial location. A letter explaining the Society's views was sent to the Secretary of State and to Northumberland County Council but sadly without effect.

Ill wind blows no good

Why this green idea is such a non-starter

EXHIBIT #2

Earlier this year Business Editor John Baker suggested that more wind farms should be built in the South West. Edward Luscombe, a retired lecturer in electrical engineering, disagrees

QUESTIONS OF POWER: A wind turbine and pylons tower over a farm in Delabole

THE 'clean' energy of wind power is constantly stressed as the overall necessity for more and more wind farms.

The global benefits of the clean energy are so important that the penalties of having hundreds of windmills straddling the countryside are worth paying. But what are the facts?

Wind power energy is very unreliable. it can only be used to 'top up' the generating capacity of conventional power stations.

It cannot automatically be called upon at times of peak demand (ie a clear frosty day with no wind), as can steam turbine or pumped storage generators.

Wind farms will always require back-up generating capacity, they will not obviate the need for convention. l stations.

The argument has been made that although the wind may be light in one part of the country it will most likely be strong in another so that if there are sufficient windmills wind power will at all times be able to contribute to the national needs.

There is talk of obtaining 2% of our electrical needs from renewable sources by the year 2000, and that most of this will come from wind power. (Incidentially, much more than 2% could be saved by energy conservation schemes). Two% represents about 1.000 megawarts.

Wind farms of the sort now running or planned contain 10-15 turbines, total rating 4-6MW. The output is very variable and studies at the Camarthen wind research station indicate an expected load factor of about 25%, ie. the effective overall mean output will be 1-1.5MW.

This is a tiny amount of electricity compared to that from a conventional generator or station (600-1.000MW). And the conventional station is capable of producing its full output on demand: no wind farm can do that.

To provide an overall 1.000MW from wind power will thus require an installed capacity of 4.000MW, and with the generators currently being used (400 kilowatt) that would mean 10.000 generators, ie. 500-1.000 wind farms!

How can the covering of our countryside by so much machinery ever be justified? What are the global benefits of reducing by just 2% of our power station emissions?

These arguments seem irrefutable. So why are potential wind farmers queuing up with their planning applications?

The 'green' lobby, together with politicians, have been persuaded that renewable energy, in particular wind energy, is a good thing.

Politicians

I think that the 'lobby' and the politicians are taken up with the idea of wind power without having any notion of the electrical scale or logical outcome of their enthusiasms.

There are renewable schemes which really ought to receive Government support, eg. the Severn Barrage, which would produce several thousand megawatts in the one project.

But to encourage wind energy, wind farmers are to be paid 11p per unit for their electricity. That is four times the cost of power produced by conventional generators.

But on this basis, wind power makes a great deal of sense for the developers. Let us suppose that the load factor is 35% i. e. a mean continuous output of 1.40MW-1.400KW.

In one hour, 1.400 units are generated. There are 8.760, hours in the year, so the total units delivered to the National Grid are 12.264.000. At 11p per unit this represents an annual income of £1.349 million. Who wouldn't want to build a wind farm!

They are certainly no help to the national economy since all the generators for this scheme, and for all the others, come from Vestas of Denmark.

So apart from their tiny contribution to our electricity needs, there are several reasons why we should not subsidise these clusters of wind generators which threaten our unspoilt countryside

The development of wind farms in the UK can not be justified. The visual pollution of dozens of them will far outweigh any possible benefits except financial ones to the developers.

If the price paid per unit were reduced to that which is paid to conventional generators there would not be any more wind farms. And that would be to the everlasting benefit of our incomparable countryside.

Fortunately, there is a growing tide of concern and this will increase more and more when farms are built. People will wake up and say "What on earth are we doing to our countryside!"

EXHIBIT # 3

Tri-Valley Herald
WEDNESDAY DECEMBER 26, 1990 6 PAGES

Windmills Hit

Darryl Mueller
Livermore

Wind energy is it a big fact or big joke? Stop! Stop! Say the environmentalist, we can't shutdown the fledgling Windpower Co. They provide 1.2 to 1.7% of our energy and also this is one of the most unreliable sources. We still need all the power plants and infrastructure in place, ready to go on line as soon as the wind stops. Also they use PG&E equipment which means we subsidize windmills.

It's a joke that in today's world of environmental concern that here in California our national symbol the Eagle and other protected raptors are being chopped up by windmill blades. The windmill operators get off the hook with a study on raptor mortality. The name for it is "the stall."

Windmills were originally to be built on ranches as a cash crop. U.S. Windpower obtained permits for over 300 on the Oakland Scavenger Waste Management landfill. They had a hearing without informing any of the folks who live across from the project. The beautiful hills that were supposed to be the buffer zone for the landfill soon had bulldozers cutting notches for windmills. The people who live across the street were shocked, to say the least. The county doesn't offer much hope and says, "sorry looks like a done deal."

Folks who live with the windmills complain of the noise and have measured it. They know what the thumping sounds are and feel the county should protect them. The county tells windmill people to do a noise study. Windmill people do a study, not within the county standards, for recording the sound. County tells windmill operators to do another study within the county standards and measure the subsonic noise, windmill operators refuse. Windmill operators say, "We are doing a great job. We have spent $750,000 and hired a biologist." This expensive study has not accomplished anything except stall for time. Furthermore, this does not justify trampling over folks who don't want windmills interfering in their lives, and know of the killing of animals and raptors protected by law.

The fact is wind energy in the future may not become a reality if they keep side stepping the issues. The U.S. Fish and Wildlife Service has asked for a moratorium until the raptor problem is solved. Wind energy people could care less, and if the opportunity is made available in other areas or states, you can bet they will be there, beating their drums on clean energy, and just let the problems solve themselves. This must be their real scheme, or why would they continue to erect them while the problems still exist.

Windmill people could care less on how they are wrecking the environment. They say now let's build a new bigger windmill, one which produces more power. Let's get it approved to go into operation, without the environmental impact study, and ask the county to let us erect them. Well that's what's going on right now. The current model which is in operation has a governed tip speed of 137 mph. The new windmills are twice the size non-governed tip speed? 264 plus mph and higher. U.S. Windpower's president, Dale Osborn, said, "Rotors are allowed to spin faster as the wind picks up."

Stop the raptor bird killing, Silence the noisy windmills, and do the proper environmental work before they go into operation, or shut them down.

A windmill neighbor who has had enough.

EXHIBIT #4

Down-home sounds direct from Alabama

Popular country act visits Bay Area — TimeOut Friday

Assemb delays

No pact on v

Valley Times

Friday, July 12, 1991

Please see JUDGE, Page 13A

U.S. Windpower turbines ruled within noise limits

By Boni Brewer
Staff writer

OAKLAND — Alameda County supervisors, caught in the crosswinds of a complicated dispute over noise studies, threw up their hands and ruled Thursday that U.S. Windpower turbines are within acceptable noise limits.

"I'm just going to have to go along with staff on it, though I understand that the battle is going to go on," said Supervisor Ed Campbell, who represents the area and who said the technical data on noise studies were far too complex for board members.

But Dyer Road residents said they may go to the District Attorney's Office to seek enforcement of noise standards they claim are being violated by U.S. Windpower, which operates in the Altamont hills east of Livermore.

Residents complained that the company refused to conduct new noise studies, as requested by Zoning Administrator Steve Richards, following studies performed in June 1990.

They also claimed the county is lax on noise standards because of millions of dollars in tax revenue annually from Altamont wind farms.

Residents told supervisors that the "rumble" of low-frequency noise in their homes is unbearable.

"We hear those sounds inside our houses; they reverberate off the walls," said Darryl Mueller, com-

Please see WIND, Page 13A

OVER

Times/Jim Ratcliffe

DARRYL MUELLER lives about 900 feet from the U.S. Windpower wind turbines.

Wind

FROM PAGE 1A

plaining that county environmental health noise officials have refused to come to his home and listen.

"We just think it's an unfair situation that's been allowed to exist out there," said Mueller, who has formed a group called Altamont Landowners Against Rural Mismanagement.

He said the noise problem started about two years ago when the company converted some turbines to produce more energy. But U.S. Windpower officials contended that the upgraded turbines don't generate any more noise than the original turbines did.

John Soares, who has lived on Dyer Road for the past six years, said some residents are having trouble selling their homes because the noise is so bad.

"I'm not willing to move, not willing to be run off of the property I've waited for all my life," he said. "It's much more serious than you think it is. It's very noisy in our houses. On some nights, it's almost unbearable."

A noise expert for the residents disputed a study a U.S. Windpower consultant conducted in June, though county officials said the company's study was "more credible" because it used generally accepted methods.

Richards conceded that he'd asked U.S. Windpower for new studies. But he said it was not a written requirement and that he was later satisfied with reasons the company gave about why new tests were unnecessary.

James Eisen, an attorney for U.S. Windpower, said the original tests were done in the summer, the windiest time of year and the time when noise levels are highest.

At issue are U.S. Windpower's 200 turbines along Dyer Road, which received an operating permit in 1981. At the time, the county had limited information about noise levels and set subjective standards, not measurable.

Later, in 1983, a limit of 55 decibels was set for new wind-farm operators, though it was not applied to U.S. Windpower. What's more, it was later determined that a 55-decibel limit for low-frequency noise was "naive and absurd," Richards said.

He said that measures of background noise show that even without turbines, low-frequency sound from wind, grass, traffic and crickets exceeds 55 decibels. The noise expert hired by residents disputed that claim.

EXHIBIT #5

EnviroNoise
Monitoring and Measuring

9628 Alcosta Blvd., San Ramon, CA 94583
Telephone (415) 829-6641

July 15, 1991

Mr. Darryl Mueller
3290 Dyer Road
Livermore, CA 94550

WIND ENERGY CONVERSION SYSTEM

Dear Mr. Mueller:

The following is a summary of the results of measuring of WECS levels at your residence that has been accomplished to date:

During the evening of December 13, 1990, a survey of noise levels being generated by the WECS was conducted. The equipment used was a Larson-Davis Model 870 Environmental Noise Monitor used in the Sound Level Meter mode. The microphone was protected from any effect of the wind through the use of a windscreen, Model UA 0237, manufactured by Bruel & Kjaer. Calibration was accomplished prior to the measuring period. "Slow" response was used for this survey even though the standard practice for measuring environmental noise is to use "Fast" response. During that period levels of more than 55 dBa existed during the entire period and a maximum level of 59.4 dBa was noted.

Monitoring of A weighted sound levels was accomplished from May 31, 1991, through June 2, 1991, and from June 3, 1991 to June 5, 1991. The purpose of the first of these periods was to record levels during a period in which the WECS would not be operating but in which there was enough wind to effect operation. The wind mills were to start operating at a point during this period. The second monitoring period was during a two day "normal" operating period. Equipment used for these periods was a Larson-Davis Model 870 Environmental Noise Monitor set up to operate "remotely". The microphone was placed at approximately 60 inches above ground and well away from reflecting surfaces. A Model UA 0237 windscreen was used to eliminate any wind noise. Specific information about the settings and calibration of the equipment is in the "Summary Report" from my files, ALARM1.870 and ALARMA.870.

During the period from May 31 to June 2, 1991, the times of operation of the WECS can be noted in a very dramatic fashion from the Interval Sample Graph of the LEQ. Startup of the WECS occurred very shortly after 6:00 P.M. and at that point the average noise levels immediately jump from a range of 40-42 Dba to well over 50 dBa. during the night time period when the windmills are virtually the only source of noise above 50 dBa, maximum levels of 61 to 63 dBa are common.

The instances of WECS operation are not as clearly defined by

OVER

the LEQ levels during the period of monitoring of June 3 to June 5, 1991. This is because the startup and shutdown of the WECS is not as concentrated as it was on June 1. The levels still reflect LEQ above 50 dBa when a number of machines are operating and maximum levels of more than 60 dBa are common at times when the only source of noise would be the WECS.

I use several guidelines in setting my procedures for noise measurement. ANSI S12.9-1988 (ASA 76-1988) is the American National Standard for "Quantities and Procedures for Description and Measurement of Environmental Sound. Part 1". There are textbooks and "guidelines" also available, the most commonly used "guideline is a Brochure published by Bruel & Kjaer, a highly respected Danish sound measuring equipment manufacturer, entitled "Environmental Noise Measurement". My procedures conform to these documents.

The equipment I use is periodically checked for conformance to operating standards. In addition to the calibration of the system accomplished prior to each measuring period, I have certificates of compliance showing conformance to the appropriate standards with a list of the test equipment traceable to the National Bureau of Standards. My equipment is tested to and exceeds the requirements of Type 0 Sound Level Measuring Equipment as specified in ANSI S1.4-1983, IEC 651 and IEC 804.

Sincerely Yours,

James B. Chester

James B. Chester

Editorial Page

MONTANA NEWSPAPER ASSOCIATION

Letters To The Editor

Three questions

Dear Editor,

We hope that all involved in the decision as to whether or not you should have a "wind farm" will really study all the pros and cons.

We just wish that you all could visit the Alamont Pass in northern California and the area north of Palm Springs in southern California, and talk to the residents in those areas. You should ask them how they like looking at them *all the time*, how they like listening to them *all the time*, and what have they done to the value of their property?

We feel you would not want wind turbines if just these three questions alone were answered. We hope that beautiful Montana will not decide to have this visual eyesore.

Calvin & Nancy Beauregard
Sierra Madre, CA

EX-187 - #6

4 Friday, March 20, 1992

Bozeman Daily Chronicle

Some lessons Montanans don't need to learn

Letters

First of all, you say the prospect of wind energy development in Park and Sweet Grass counties,is exciting. Maybe you wouldn't say it's so exciting if you knew more about what has been done to the areas in California, where wind energy has been exploited. And maybe you wouldn't say it is exciting if you happened to live where this wind energy would like to be exploited.

You say the state can learn from California's lessons. I say people themselves should learn from the absolute disaster that has taken place in California, and stand against it. You say the state can find ways to mitigate the impacts. Can they really? Why hasn't California been able to mitigate the huge eyesore that's been created there? Why is it that all they can seem to do in California, concerning the killing of this country's national symbol in record numbers, is to study it?

Little do people know, that the Altamont Pass Wind Resource Area, the worlds largest with its 80 sq. mi. of 7,500 wind turbines, supply only one percent of PGE electric generation. Little do people know, that it would take 20,914 of U.S. Windpower's new state-of the-art 300kw wind machines covering an area of 490 sq miles, to produce the same amount of electricity that comes out of Colstrip, Mont. Little do people know, that in one year's time at the Altamont Pass W.R.A. approx. 60 golden eagles are killed (based upon just released studies). And little do most people realize what the upper Yellowstone river valley would look like, if U.S. Windpower had its way.

The next time someone thinks that this "wind generated power i lea offers exciting prospects for Montana", maybe they should land themselves in the middle of Altamont Pass for a few days to get their thoughts in line with that reality.

Ron Wiggins
P.O. Box 493
Big Timber

Little do people know, that it would take 20,914 of U.S. Windpower's new state-of the-art 300kw wind machines covering an area of 490 sq miles, to produce the same amount of electricity that comes out of Colstrip, Mont.

THIS LETTER IS IN RESPONSE TO THIS → OPINION EXPRESSED A FEW DAYS EARLIER

EXHIBIT #7

4 Thursday, March 12, 1992

Bozem Daily Chroni

OUR OPINION

Tilting at windmills

Wind-generated power idea offers exciting prospects for Montana

The prospect in Park and Sweet Grass counties for energy development of Montana's limitless wind resources is exciting. The state should do what it can to boost the effort and to ensure if wind energy comes, it arrives as freshly and cleanly as a Montana chinook.

Small wind-energy experiments conducted in Park County were pretty inconclusive during the past decade. Visible from Interstate 90, the stark silhouettes of windmills — some propless — testify to the difficulty companies had mastering the technology needed to be compatible with the fickle winds.

Now, according to the firms looking at large-scale wind generating systems, the technology has been mastered. The turbines can now handle the inconsistency of Montana's notorious gusts. The turbines can provide a steady source of energy to power companies that have to be guaranteed a set amount of megawatts for their high-tech power grids.

Several thousand acres have been leased in both the Livingston and Big Timber areas and wind energy developers supposedly are considering fields with scores of turbines using the clean and free wind resource. One of the companies — U.S. Windpower — which already has more than 4,000 wind turbines in California, is seriously pursuing a 30 megawatt pilot in northern Montana.

According to a U.S. Windpower spokesman Barrett Stambler, Montana "has a much better wind resource than California." Stambler went so far as to praise Montana's wind resources as among the best in the world.

The prospects for developing that wind, however, have gust as fustily as the wind itself. Montana Power, which would have buy the energy, has asked for possals for up to 150 megawatts and already has proposals for over 6,000 megawatts to sift through. Power companies ha viewed wind energy with some skepticism. Not only would wi complicate their plans for development of existing coal generating power plants, it also relies the aberrations of weather. Ur river and stream flows whose tutions can be tempered with dams, you can't dam wind. Na ging power company concerns about wind is the bottom line: wind, no power.

And while wind energy is t ed as clean, free and limitless, not without environmental fla Thousands of turbines cluster over Montana's terrain would blemish the "viewscape," accor ing to detractors. Wind turbin also pose dangers to raptors. A three-year study in California only one wind turbine site showed nearly a hundred eagl and hawks were felled by the windmills.

Wind-energy proponents have compelling arguments of their own. Power lines also con tribute to bird deaths, coal gen ating plants belch harmful emi sions and coal mining devours prairie habitat.

The debate will be interesti In the meantime, don't get bre less over the prospects. Large scale wind energy developmen will probably not resuscitate th state economy anytime soon.

The fact that it won't is to t state's advantage. The state can learn from California's lessons. The state can contemplate how best to reap needed revenues. The state can find ways to mitigate the impacts.

If Montana is going to extr a state resource to sell as energ elsewhere, let it be wind.

Photo courtesy of California Energy Commission

- **Wind generators kill eagles and other major raptors in devasting numbers.**
- **Windfarms devalue rural property permanently and all property in their vicinity.**
- **Wind generators would cause ground wildlife to migrate because of dangerous noise and vibration.**
- **Wind generators degrade the quality of life in every area they are installed**
- **Wind generators are not clean energy sources - they are dirty, destructive, and irresponsible.**
- **Wind power companies are one more classic example of an out-of-state power interest raping Montana of its big sky, beautiful rural farmland, wildlife resources, and quality of life.**

EXHIBIT #8

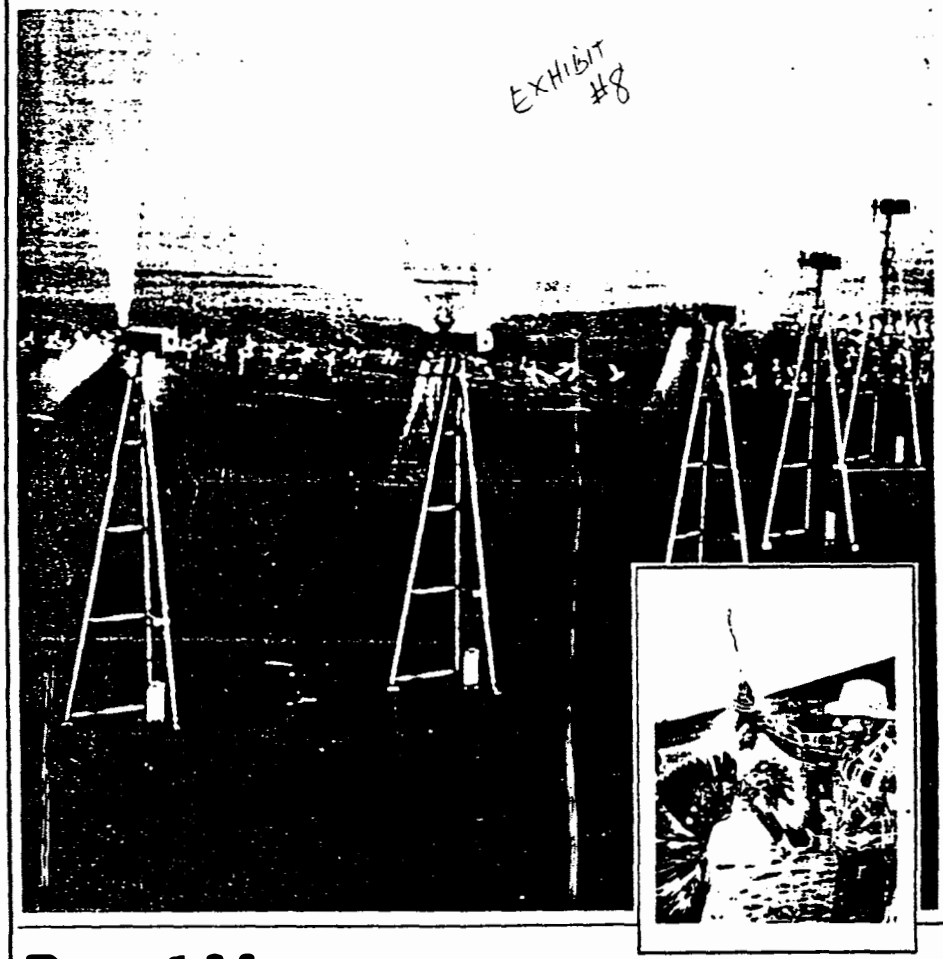

Photo by Glenn Monmoto

Rural Montana Could Look Like This Soon . . . Unless You Help!

Paid for by: Friends of the Big Sky, P.O. Box 6553, Bozeman, MT 59771

MT. DIABLO AUDUBON SOCIETY
P.O. BOX 53
WALNUT CREEK, CALIFORNIA 94596
16 February 1992

EXHIBIT #9

PO BOX 493
Big Timber, Montana 59011

Dear Mr. Wiggins:

You make inquiry as to the effects the windfarms located in tne Altamont Pass area of Alameda County are having and/or have had on birds, wildlife.

A study was done on bird kills. That study indicated the larger birds, ie eagles, hawks and so forth do not fare well when they are in the area of the windmills. It is our understanding another, more comprehensive study is about to be completed.

While I do not attempt to prognosticate, I'm fairly certain the results will also show the larger birds get into trouble when they stray into a windfarm area.

Since the larger birds reproduce slowly, I believe the results demonstrated by the study indicate over the long term the windfarms will do much damage to the avian population. Whether such will be enough to decimate these populations I don't know. I suspect the long term effects will be very adverse.

Two other issues cause problems: 1. noise, the effects of such on humans who live in an area where the windfarms exist. Based on complaints from individuals who live in the Altmont area, the noise created by the windmachines is very unpleasant. The noise creates many problems with the quality of life of such residents.

2. Lastly, the issue of appearance. Prior to installation of the windfarms the Altamont hills were vast open areas. Green in the spring, golden brown during the summer and fall.. That pagent is now disturbed by the appearance of hundreds of windmachines, sometimes whirling, sometimes at rest. I suppose some see beauty in such a pagent but anyone who likes open spaces sees the area as an aberation.

The little I know about Montana would leave me with the thought that most of the residents, used to wide open spaces, who will ultimately be exposed to windfarms (if created), will NOT like them.

Sincerely,

A. B. McNabney
Vice President-Conservation

WER SOURCE UNDER REVIEW

LS OF OUR TIMES

EXHIBIT #11

By Glenn Mariscalo/Special to the Tribune

Darryl Mueller of Livermore holds up the remains of an eagle caught in the windmill.

OAKLAND TRIBUNE
MONDAY, MAY 13, 91

158

Tri-Valley Herald

WEDNESDAY
March 17, 1993

A TRADITION OF SERVICE
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U.S. Windpower gets caught in the wind

■ Company searches for response to criticism over its windmill plan to prevent the killing of protected birds

By Jonathan Weisman
STAFF WRITER

The Altamont Pass's largest wind-power company — under the threat of criminal charges — is scrambling to respond to a government memo slamming its efforts to prevent its windmills from killing protected bird species.

U.S. Windpower had planned to replace 120 of its older windmills with 80 of its state-of-the art models, whose blades sweep across an area more than twice the size of the models they would replace.

But its Feb. 17 hearing before the Alameda County Zoning Commission was derailed by a scathing letter from the U.S. Fish and Wildlife Service, which claimed that the company's plans to decrease the killing of golden eagles and other birds of prey would amount to nothing at all.

U.S. Windpower "leaves us with a questionable proposal to install bigger turbines based on a questionable study . . . based on non-existent mitigation measures," chided Cynthia Struzik, a special agent in the wildlife service's Burlingame office.

A second hearing planned for today is again expected to be postponed, this time until March 31, because U.S. Windpower failed to satisfy the wildlife service with a minor reconfiguration. Service officials now say any new proposal can add no new blade area.

"We still feel any loss (of protected birds) is illegal," said David McMullin, assistant regional director for law enforcement in Portland, Ore. "Even if it was not envisioned 10 years ago, if a problem is found, it has to be fixed before we blaze forward."

A 1992 report to the county found that 567 birds of prey died at the pass in the two years studied, including at least 39 golden eagles a year. McMullin hinted that legal action could be taken if wind power companies don't act.

"It's not our decision on prosecution. That's up to the Justice Department," he said. "But other people have been prosecuted for incidental killings."

U.S. Windpower — which operates about half of Altamont's 7,200 turbines — is anxious to put up its new models, which it says will prove that wind power can be as economical as conventional electric power. And the Livermore company has contended that it needs a significant number of the new turbines to test various methods of cutting bird kills, like painting the blades or attaching sound makers.

EXHIBIT #12

APR 13 '93 19:35 DARRYL MUELLER CONST P.1

Steve — We should all talk about this —

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Law Enforcement
1633 Old Bayshore Highway, Suite 248
Burlingame, CA 94010
(415) 876-9078

February 5, 1993

Bruce Jensen
Alameda County Planning Department
Development Planning Division
399 Elmhurst Street
Hayward, CA 94544

Dear Mr. Jensen:

I am enclosing a copy of a letter to M. Joan Stewart (U.S. Windpower) dated January 27, 1993. In this letter I expressed many concerns regarding U.S. Windpower's proposal for the removal, installation and relocation of various wind turbines.

Since writing that letter, I have received new documents which raise additional questions. For example, on page 23 of the Initial Study/ Draft Mitigated Negative Declaration, the Determination (V 2) states 'I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in Exhibit "A" attached have been added to the project by the project sponsor. A NEGATIVE DECLARATION will be prepared.' One needs to bear in mind that a study to identify possible mitigation measures is not in and of itself a mitigation measure. While the study may yield information, the study will not prevent migratory birds and eagles from being killed.

I have reason to believe that the 33M-VS turbines will result in an increase in mortality for the following reasons:

1) The proposed project represents an increase of 2.23 times the blade area of the current (56-100) turbines. This means more contact area is available for collision.

2) The proposed installations are to be constructed on lattice towers which showed a statistically significant higher mortality rate than other tower types. It is possible that the lattice tower may serve as an attractant, since it is not uncommon to see birds perched on lattice-type electrical

transmission towers (eg. towers adjacent to the San Mateo Bridge). In at least one case, a Red-tailed Hawk was observed nesting on a lattice wind turbine tower.

3) If we speculate that there is some sort of recognition and avoidance distance (as the "Study" proposes), then a bird may have insufficient time to clear the 108' rotor, whereas a 59' rotor, may present less of a problem.

4) The proposal is to install 80 lattice-upwind turbines. At this time I do not have the raw data available to do an analysis, but it appears from the Biosystems study (comparing Figures 2-2 and 3-19) that there may be a higher mortality rate for the lattice-upwind turbines than for the lattice-downwind turbines.

The possible cumulative effect of factors such as this should not be overlooked. In the absence of any evidence to the contrary, it would be a grave error to allow a Negative Declaration in a case such as this. Furthermore, it needs to be stressed, that the current ongoing take level of migratory birds and eagles is not acceptable to the US Fish and Wildlife Service (the Service).

With respect to 'Exhibit "A"', I find it interesting that someone has offered participation of the US Fish and Wildlife Service in the alleged mitigation measures, without consulting the Service. I object to the use of the term "resident raptor". This terminology would not only exclude migrating raptors, but also any other migratory bird. While mortality may be higher for certain species of raptors, it needs to be stressed that all migratory birds, as listed in 50 CFR 10 are protected by federal law (16 § 703 et seq.). It is my understanding that the term "resident" was used to distinguish from the "trained" raptors which the study team intends to fly in the turbine area. "Trained" raptors are protected by the same federal law that protects "wild" raptors. Thus the mortality of a "trained" raptor is in no way more acceptable than the mortality of a wild bird, as is inferred by the special designation of resident raptor. Additionally it should be pointed out that a special permit would be needed to conduct the activities that have been proposed with the "trained" raptors and the Service has the option to decline to issue such a permit.

In essence, Exhibit "A" does not offer any mitigation measures. All it offers, is to write "reports" and to cease operation, if a significant increase in mortality is observed. This is not mitigation. Mitigation is a measure taken to prevent mortalities in the first place. The project attempts to say that they do not expect an increase in mortality, but if they're wrong, they'll stop. They have no data to back up these

expectations. Isn't the whole approval process supposed to prevent such errors that can cause damage to the environment? In the Altamont Pass, there are already 7,300 turbines killing approximately 40 Golden Eagles and 44 Red-tailed Hawks, along with many other migratory birds each year. In my estimation, the County would be negligent to approve a Negative Declaration on this project. Given the fact that there are already 20 of the 33M-VS turbines in operation, I believe that more data should be obtained from those turbines prior to the construction of any new projects.

In a letter to the County from U.S. Windpower dated Dec. 28, 1992, Ms. Stewart says with respect to the proposal, that "These actions are an integral part of an experimental research project developed for us by a distinguished task force of avian behavior experts to test potential avian impact mitigation measures." I have reviewed a copy of the "The Plan of Study" which the avian experts submitted to U.S. Windpower. Nowhere in this Plan do they mention the necessity of having 80 of the 33M-VS turbines installed in order to be able to do the study. In a letter to the County dated Dec. 21,1992 from Dr. Tom Cade, Cade states "I have reviewed the proposed layout which U.S. Windpower is presenting to you. These alignments will provide us with the requisite variety of turbine lay outs to evaluate". U.S. Windpower's letter leads us to believe that it is the study which created the urgent necessity to install new turbines. Neither Cade's letter nor "The Plan of Study" seem to support that contention. It appears that the urgency of installation was created by U.S. Windpower.

Since the study is allegedly an integral part of this proposal, it too should be subject to scrutiny. The proposed study raises some serious questions.

1) One phase of the study consists of flying homing pigeons through the turbine area and observing their behavior. I have doubts as to how this will be applicable to the behavior of Golden Eagles and other raptors. Visual acuity and flight characteristics, as well as feeding habits are remarkably different for these species. It seems that the only similarity, is that they all fly.

2) While pigeons are not protected by federal law, the study may be subject to questions concerning the possible inhumane treatment of animals, by releasing them under such perilous circumstances.

3) Another phase involves the use of "trained" raptors. I would like to know from where the researchers plan to obtain these birds. Also, what types of permits will they have to allow them to conduct these activities?

4) Once again I question how applicable the information gathered on these trained raptors will be to wild raptors. While the physiology of trained birds will be the same as for wild ones, the behavior modifications as a result of the "training" may seriously influence the behavior of the birds in a non-quantifiable manner. Furthermore, as tests continue using the same trained birds, their reactions may be more a result of conditioning rather than an innate behavior which we might expect to see in a wild raptor.

5) Any mortality of these "trained" raptors as a result of the study is a violation of federal law.

6) The study proposes to use a 3-D tracking system. From the sound of the study plan, the system has yet to be designed. From my knowledge of the Altamont Pass area, it is hard to visualize how equipment could be set up in such a vast area and yet yield valuable information. A bird in flight passes through the area in such a rapid manner, that it would be hard to make observations on the behavior. In the event that the study team directs the flights of the "trained" raptors, then any trace of normalcy to their behavior has been altered.

This leaves us with a questionable proposal to install bigger turbines based on a questionable study for which a Negative Declaration is being requested, based on non-existent mitigation measures. Installation of any new turbines, prior to the industry offering mitigation measures that will prevent migratory bird mortalities cannot be supported. Offering to turn off turbines if they kill too many birds is not mitigation and is therefore unacceptable.

If the County decides to issue conditional use permits for this project in spite of these objections, then the Service requests that the following be required:

1) Any migratory bird mortalities or non-fatal injuries associated with the proposed study or attributed to the new installations and relocations, will be reported to the US Fish and Wildlife Service within 24 hours. Any such mortalities or injuries will not be moved or tampered with, unless approved by the Service. One Service Representative will be designated by the Service for the purpose of handling these matters and all information shall be submitted to that individual unless otherwise specified by that Service Representative.

2) If the County proposes to allow operation on the condition that the turbines be shut down in the

event of "a significant increase in mortality" of any migratory birds, then these parameters need to be specified in actual numbers and not left in a nebulous description to be debated at a later date.

3) The shut down conditions in Exhibit "A" state that "...the Zoning Administrator should suspend the respective operating permits until the U.S. Fish and Wildlife Service believes that the problem has been corrected." This proposed condition sounds good in theory but it is not reasonable. Turbines have been in operation in the Altamont Pass since the early 1980's. The migratory bird mortality was recognized about 1985. In the past seven years with the final number of turbines near 7,300 and hundreds of migratory bird mortalities, the industry is no closer to arriving at a solution. I am curious as to what they expect might transpire that would lead the Service to believe "...that the problem has been corrected" with respect to the operation of the new turbines, when they haven't figured it out in nearly ten years of trials with the old turbines. This portion of the proposed project requires clarification.

I am pleased to see that U.S. Windpower is taking some action by initiating this study. However, I remain unconvinced of the necessity to install larger turbines which may prove to be even more deadly to migratory birds. It is recommended that the study be conducted on the existing turbines until some methods have been documented that will substantially reduce mortalities. At that time we would be willing to reconsider the issue.

Sincerely,

Cynthia Struzik

Cynthia Struzik
Special Agent

cc: Marvin Plenert, Regional Director, USFWS
David McMullen, Assistant Regional Director-LE, USFWS
Scott Pearson, Senior Resident Agent, USFWS

SEP 29 '93 01:58 T 0 SAVE THE EAGLE MUELLER COME

Herald

WEDNESDAY
September 29, 1993

A TRADITION OF SERVICE
TO CALIFORNIA
SINCE 1874

U.S. Windpower plans snag on bird death issue again

By Jonathan Weisman
STAFF WRITER

U.S. Windpower's attempts to expand its fleet of giant windmills is about to be trounced for the fourth time because of concerns over bird deaths at the Altamont Pass, county officials said Tuesday.

The Livermore-based company was to go back before the Alameda County Zoning Administrator Wednesday with expansion plans, but the county now says it will not even consider the issue until well into next year.

"I think everyone would have anticipated these (windmills) would have been a part of the (past) by now," said Steve Richards, the county's zoning administrator, "but it's not happening. They might end up withdrawing them altogether."

U.S. Windpower's colossal new turbines — whose blades stretch 108 feet wide — have been lauded as scientific marvels, garnering three technical awards in the last few months.

But the U.S. Fish and Wildlife Service sees them as potential threats to the migratory birds that are already being killed by older, smaller versions.

Clarence Gribcy, a U.S. Windpower

Please see Bird, page A-12

EXHIBIT #13

Bird: New delay for windmill expansion

Continued from page A-1

spokesman, said the company itself has backed off on the project until it can resolve its differences with Fish and Wildlife. He noted that the company has ongoing projects both in the United States and abroad.

"We need the inventory for those other projects," he said. "Hopefully, by the time those get underway, we'll have cleared up things with the Fish and Wildlife Service."

The company approached the county in February with a plan to replace 120 older windmills with 80 of the new giants, whose blades sweep across an area more twice the size of the models they would replace.

But Fish and Wildlife derailed that effort, sending U.S. Windpower back to the zoning administrator in March with a scaled-back plan to replace 131 older turbines with just 38 new ones. At that time, company officials said they would seek the other 42 as soon as possible.

But an attempt in July was turned back by the bird issue. Wednesday's meeting will have the same result, Richards said. The issue will not come back up until at least March of next year.

Sources within Fish and Wildlife and the windmill community say bird deaths — especially the deaths of federally protected golden eagles — continue. Thirty-two golden eagles were found between June 1992 and last May.

i-Valley Herald

SUNDAY
July 25, 1993

A TRADITION OF SERVICE
TO CALIFORNIA
SINCE 1874

One Dollar

Turbine critics cite a burning issue

■ Opponents of the industry say windmills pose a fire hazard

By Sarah Colby
STAFF WRITER

Windmill opponents have levied a new complaint against what has been touted as an environmentally sound energy source — windmills or windmill-related activities cause more than 50 percent of the grass fires in the Altamont Pass.

Capt. Steve Barrett of the California Department of Forestry says the figure may be as high as 75 percent. On Thursday night a malfunctioning windmill off Grant Line Road started a blaze that scorched 80 to 100 acres of grass land, CDF officials said.

Windmills can cause fires in a variety of ways, firefighters said. They can short-circuit. Hanging wires get twisted and wear down, creating sparks which fall to the parched grass.

Turbine maintenance, such as welding, can be extremely volatile. Vehicles and machinery that are driven out to the windmills can emit sparks that start grass fires.

Barrett is quick to point out, however, that the wind companies have always been very cooperative about paying CDF and local fire agencies for the costs of extinguishing such fires.

Officials from U.S. Windpower, Inc., the largest operator in the Altamont with more than 4,000 turbines, said they have been working with local agencies to minimize fire dangers.

All motorized equipment and vehicles that go out into the fields stay on gravel-paved roads and are equipped with both spark-arresters and mufflers, said Clarence Grebey, manager of corporate communications.

Firefighters train wind company employees, and workers carry tools and chemicals with them so that they can put out fires, Grebey said. The company sends spotters out to catch tangled wires, he said.

Strident windmill opponent and landowner Darryl Mueller wants to know what good that will do him if an uncontrollable grass fire attacks his house on Dyer Road.

"As long as the windmill companies are willing to pay for the fires they start, nothing is going to

Please see Wind, page A-8

OVER →

EXHIBIT #14

Wind: A popular alternative

Continued from from A-1

change. And I say I don't want to lose my house. I don't want to lose my family. And there are 7,500 windmills over there, and if a fire gets started in the right place, the whole Altamont Pass could go up."

Of the 13 wind companies operating in the pass, the only one with representatives available to talk about the allegations was U.S. Windpower.

U.S. Windpower officials say the company has always paid ranchers for grazing pasture lost to fires.

But Mueller and other windmill opponents have additional concerns. They say that the windmills, which are touted as an environmentally benign energy source, start fires that release pollutants into the atmosphere. They also cite the danger to various protected species — certain owls, foxes and salamanders — that live in the Altamont.

The wind industry is already in trouble over the deaths of federally protected bird species — including golden eagles. A 1992 report found 567 birds of prey died in the Altamont in the two years studied, conservatively putting annual eagle deaths at 39.

The U.S. Fish and Wildlife Service has said wind-power expansion could be halted completely if the killing cannot be stopped.

Indeed, many environmentalists are slow to criticize the wind industry, citing the many faults of alternative energy sources, such as acid rain, strip-mining and nuclear waste.

"I have a hard time believing that this is a serious problem," said Rich Ferguson of the Sierra Club. "There are always environmental problems associated with energy sources. Our interest is in trying to chose resources that minimize those problems."

However, some environmentalists suggest that finger pointing at other energy sources is not productive. Rather, says environmentalist Paul Thayer, the public has an obligation to study and address the effects of each energy generator — especially something as relatively new as wind power.

"It's just another area where these wind turbines are causing problems nobody thought about when they put them up," Thayer said. "There's just a tendency to brush them aside in the spirit of 'Windpower is essentially benign,' and it's not."

Staff writer Jonathan Welsman contributed to this story.

Altamont Pass inferno

JAY SOLMONSON — Staff

Mike Trujillo, 31 of Livermore, sits on the burned wreckage of his 1969 Corvette above his family home near the Altamont Pass.

EXHIBIT #15

Herald

THURSDAY
August 26, 1993

A TRADITION OF SERVICE
TO CALIFORNIA
SINCE 1874

At least six dozen firefighters battled 107 acres of flames

By Patricia Jacobus
and Sarah Colby
STAFF WRITERS

ALTAMONT — Flames sparked by a U.S. Windpower turbine raged through the Altamont Pass Wednesday and scorched 107 acres of land, at least three vehicles, a boat, a camper trailer and a shed, officials said.

About 75 firefighters from 13 departments attacked the fire which started about 10 a.m. near a U.S. Windpower access road off of Dyer Road. With the aid of two air tankers and one helicopter they contained it within two hours.

The fire was caused by a turbine that experienced an electrical cable failure, a U.S. Windpower spokeswoman said. The company plans to compensate property owners for their losses, she said.

The California Department of Forestry is investigating the fire.

As mop-up crews worked into the afternoon extinguishing smoldering fence posts, cars and patches of grass, another fire started up about 2:20 p.m., apparently ignited by welding crews working on another set of windmills. Exhausted firefighters raced to the scene to discover that windmill workers had the fire almost completely under control.

Officials at U.S. Windpower, whose workers reported the second fire, said that blaze was

Fire: Caused by turbine

Continued from page A-1

Enveloped in a cloud of dense smoke, Garcia swiftly got out of his vehicle and ran down the dirt road, out of the grassy area onto safer territory.

It was only a change in the wind direction that saved Garcia's trailer from the inferno, with only a few inches to spare between the flames and his home.

The Garcia compound, where Paul, his brother, their mother, sister and her three children live in three separate trailers, was spared.

"When the fire came down, we pulled lines right and left," Livermore division chief Tom Bramell said. "Then the fire blew past us and the next thing we knew there was a wall of fire all around us."

Michael Trujillo, who lives near the Garcias, said he was asleep when the fire erupted.

"The flames were coming over the hill real fast, so I just took my two German shepherds and got out of here," he said.

Once firefighters arrived, Trujillo said he marched back up the dirt hill to help hose down his trailer. He was sickened to see his vintage, 1969 white Corvette destroyed by fire. He said it was worth $10,000. His 19-foot speedboat, was also scorched.

If the California Department of Forestry determines that U.S. Windpower acted negligently, it will bill the company for the cost of its response.

Local fire departments which responded in mutual aid — Pleasanton, Livermore, Lawrence Livermore National Laboratory, San Ramon Valley, Dougherty Regional, Camp Parks, Alameda County, Veterans Administration Hospital — do not usually recoup the costs of their response.

EWSPAPER

Herald

THURSDAY
June 23, 1994

A TRADITION OF SERVICE
TO CALIFORNIA
SINCE 1874

EXHIBIT #16

TRI VALLEY HERALD 6-23-94

JAY SOLMONSON — Staff

A CDF helicopter drops water on a burning windmill off Vasco Road Wednesday.

Windmill-ignited fires targeted

By Jonathan Weisman
STAFF WRITER

LIVERMORE — The Alameda County zoning administrator approved strict new measures Wednesday to prevent grass fires sparked by Altamont Pass windmills, just as firefighters battled a searing windmill blaze off Vasco Road.

County officials in Hayward could not have known how timely their decision was.

An afternoon grass fire sparked by a turbine charred 10 acres in southeastern Contra Costa County, melting the windmill's machinery. At one point, the turbine itself burst into flames and had to be doused by several helicopter passes.

The fire was not extraordinary. Last year, about 40 fires swept through the Altamont Pass, fraying the nerves of landowners and firefighters alike.

"Living out there, it just sends a chill down my spine," said Darryl Mueller, a homeowner in the Altamont and an ardent windmill opponent.

About 90 percent of the fires last year were started by the windmills, said Steve

Please see Fires, A-9

Fires: Altamont Pass blazes rising

Continued from A-1

Barrett, a fire prevention captain at the California Department of Forestry.

In 1993, fires at the pass increased by 100 percent and cost roughly $200,000 to fight.

Barrett said 70 percent to 80 percent of those costs would eventually be assumed by the windmill companies, a cost that has company officials, too, convinced something must be done to prevent the fires.

"That's money we don't want to pay out of our pocket," said Clarence Grebey, a spokesman for Kenetech/U.S. Windpower, the largest windmill operator at Altamont. "From a business standpoint, that doesn't do us any good."

Most fires have been caused by windmill blades twisting into the wind and tangling the wires that fall from the blade structure to the ground. The county zoning staff decided Wednesday to require operators to retrofit older windmills and sheathe exposed wires to reduce short circuits.

The county restricted welding and repair operations during hot, dry, windy weather and required some hardware to be covered so that birds do not spark fires. Birds of prey have been known to bridge electrical lines with their wings, electrocuting themselves and bursting into flames.

By Aug. 15, up to 200 windmills should be retrofitted, Barrett said.

"They're not excited about it," he said of the windmill operators. "It will cost some money, no doubt."

But Grebey said the companies are complying willingly. By Aug. 1, Kenetech — which has been plagued by shorts from twisted cables — will put special sensors on 72 turbines the company had identified as problematic, Grebey said. Those sensors will shut the turbines down when the cables are tangled, and will alert operators of a problem.

Even with all these measures, Barrett said windmill fires would only be decreased by 20 percent. With additional measures, the number of fires could be cut in half.

In another year, the operators will likely be required to provide additional water supplies for firefighting, Barrett said.

The windmill operators also will be required to notify landowners when a fire is heading their way. Area residents have complained loudly that they are the last to know when fires ignite.

EXHIBIT #17

Country Guardian

*Patrons: The Rt Hon Neil Kinnock * Sir Bernard Ingham*
The National Campaign against Windfarms
Aubrey House, Riverside, Twickenham, TW1 3DS * 081 892 4211

THE CASE AGAINST WINDFARMS

A. EMISSION REDUCTION: THE CASE *FOR* WINDFARMS EXAMINED.

No-one claims that windfarms produce electricity more cheaply or more efficiently than conventional power-stations. Those who defend them base their argument on two propositions:
1) that they produce energy without the problems associated with nuclear power - the possibility of accident and the difficulties of storing safely radioactive waste; and
2) that they produce energy without the harmful emissions created by the burning of fossil fuel - CO_2, SO_2 and nitrous oxide, gases associated with global warming and acid rain.

For these arguments to be valid it is clear that windfarms, if developed in sufficient numbers, must significantly reduce emissions and/or must close a nuclear power station.

The nuclear question is straightforward. Even Dr Ian Mays of the British Wind Energy Association has admitted that **wind energy will not close a single nuclear power station and that nuclear will continue to contribute to energy production if or when fossil fuels run out.** John Redwood, the Welsh Secretary, giving evidence to the Welsh Affairs Select Committee on Wind Energy, confirmed that the nuclear power stations will continue to function until they reach the end of their planned working life. Indeed, the government's nuclear review may give the go-ahead to Sizewell C, which will replace obsolete nuclear power stations. Proponents of wind energy sometimes dishonestly answer the question "Will windfarms close a nuclear power station?" by answering "Not yet." The more honourable among them will admit that wind energy has no place in the nuclear debate.

The justification of wind energy must therefore rest on the reduction of emissions. The Department of Trade and Industry has talked of the possibility of 10% of the nation's energy requirement being provided by wind. Since only 33% of emissions of CO_2 come from energy generation (DTI - 1991 figures) we can calculate that **a 10% generating capacity derived from wind would save only 3.3% of British carbon dioxide emissions, and *only 0.1% of global CO_2 emissions, so that there would be no measurable impact on global warming.***

Even this minute saving may well be an overstatement. It assumes that when the wind is blowing and wind energy is being produced, it displaces production from all generating sources in proportion to their average contribution to supply. Since the wind turbine is the only form of generation which cannot be regulated by National Grid control, no one can know what other form of generation will be displaced when they do generate. In the highly unlikely event that wind displaces only the energy produced by our oldest and dirtiest coal-fired power stations, which are in any case being cleaned up or phased out, emission savings willl be less than 5% of the *British* total. If it displaces relatively clean gas generation, the saving will be less than 3.3%. If, however, it displaces only hydro there will be no saving of emissions.

Of course it is totally unlikely that we will reach the 10% figure in the first place. California and Denmark generate 1.2% and 2.5% of their energy from wind respectively, after a twenty-year commitment to the technology, so that despite the proliferation of turbines, emission savings will be in all probability far less than 3.3%.

The building programme for gas-fired power stations will save as much CO_2 as 80,000 400kW turbines

would, because gas power stations produce nearly 50% less CO_2 than coal ones.

Gas power stations emit very little SO_2.

The Drax coal power station is reducing noxious emissions by 90% - the saving that would be generated by 27,000 400kW turbines.

Proponents of wind energy usually express emission savings in thousands of tonnes, because that sounds much more impressive than a percentage of total national emissions.

If the wind energy developers are allowed to push ahead with their programme we face the prospect of between 20,000 and 30,000 turbines on our hills and coasts, but *we will still have 99.9% of our harmful global emissions*. The cost is too high, the benefit too small.

B. SCALE OF DEVELOPMENT REQUIRED

There is no official target for the production of energy from wind. However, its proponents often talk of 10%, perhaps because even they would have to admit that emission savings from a smaller percentage would be so minute that there would be no point in the exercise.

Estimates of the number of turbines required to produce 10% of Britain's energy requirements vary wildly. Wind energy proponents talk of 20,000; opponents have talked of 38,000. The Department of Trade and Industry in a written answer in May 1994, suggested 30,000. In fact all these estimates are true. Turbine numbers depend on size and capacity. 20,000 turbines would need to be of 500kW capacity.

Since many of the turbines already erected (eg the 103 turbines on Britain's largest windfarm, Llandinam) or for which consent is being sought (eg the 83 at Cefn Coch) are of less than 500kW capacity, the total number required to reach the 10% production figure will considerably exceed 20,000.

To use a DTI estimate, 30,000 400kW turbines would cover some three-quarters of a million acres. 400kW turbines are approximately 200 feet high from ground to tip of blade (the height of a 20 storey office block). Because high windspeed sites tend to be upland sites, the turbines will be visible up to 30 km away. If the average number of turbines in a windfarm were 25, there would be 1,200 sites. They would usually be visible one from another ("intervisible"), so huge areas of the country would have windfarm landscapes.

To produce as much electricity as a 650 MW power station (area less than 2 hectares) we would have to construct a windfarm covering 500 sq km!

The 83 turbines proposed for Cefn Coch would produce in a year what a medium sized conventional power station would produce in less than 4 days.

In September 1994 the influential Public Accounts Committee of the House of Commons cast doubts on the viability of wind energy generation: "We consider that it is very doubtful that the relatively modest increases in new electrical generation justify the large sums spent."

C. LANDSCAPE QUALITY OF PRIME WINDFARM SITES

The map of "Designated Areas" (National Parks, Areas of Outstanding Natural Beauty, SSSIs etc) overlaps almost exactly the map of high windspeed sites. Although the Welsh Affairs Select Committee Report on Wind Energy (and even the British Wind Energy Association's draft "best practice" guidelines for developers) say that windfarms should not be sited in Designated Areas or where they will be clearly visible from Designated Areas, neither the Select Committee nor the BWEA has any control over developers, usually large public companies with a duty to their shareholders to maximise profits. **The new system of subsidy, which invites developers to tender for contracts on the basis of price per unit of electricity, also encourages developers to choose the best windspeed sites, regardless of landscape value.**

The result is that windfarms are currently threatened in much of our very finest landscape: The Black Hill. Herefordshire (SSSI, Area of Great Landscape Value, 200 metres from Brecon Beacons National Park), Ingham Farms, Norfolk (1 km from Broadlands National Park), Flaight Hill, Yorkshire (Proposed Special Protection Area. Bronte Country), as well as sites on the edge of the Lake District National Park and in Wiltshire within an AONB. If these landscapes are threatened, how much more so are undesignated landscapes, like the stunningly beautiful Radnorshire Hills, whose lack of designation is a puzzling anomaly, or those isolated hills in otherwise degraded areas which are still greatly treasured by those who live near them for their amenity value. **No hill is safe.**

D. BEAUTIES OR BEASTS?

Proponents of wind energy sometimes argue that beauty is in the eye of the beholder, that there are as many people who find a turbine beautiful as find it unacceptable. This is less than honest. If they are attractive, why does even the British Wind Energy Association argue that they should not be sited in Designated Areas? Why did Guy Roots (Counsel *for* the Wind Energy Group) say at the Kirkby Moor Public Enquiry in June 1991: "It tends to be the higher parts of the country which are technically suitable for wind farms. These are too often prominent, scenically beautiful sites, and that causes a dilemma."

Again, the more honourable proponents of wind energy admit the true nature of these machines: Jonathan Porritt wrote in the *Daily Telegraph* "The modern wind turbine is a mighty intrusive beast. It's not into nestling, blending in or any of those other clichés so beloved of rural romantics."

They break the skyline and draw attention to themselves with their rotating blades.

The wind turbine is a huge and noisy industrial machine and "windfarm" is a euphemism for an industrial site of vast proportions. The question of whether some observers find them attractive is irrelevant: there has been a wholly reasonable presumption against placing new industry in hitherto unindustrialised areas in national planning policy for over thirty years.

There can be no argument that the national good over-rides normal planning considerations because the average windfarm (20 - 30 turbines) reduces emissions of carbon dioxide by only 0.003%.

E. THE NOISE FACTOR.

The noise from a wind turbine comes from both the mechanical gearing and from the rotating blades. The former can to a degree be controlled and insulated and some makes of turbine are quieter than others. The more intrusive noise comes from the aerodynamic properties of the blade and the industry has had virtually no success in controlling this. The larger the turbine, the greater the air mass moving the blades and thereby the higher the noise level. The noise is of two kinds: low-frequency penetrating noise and a "thump" reminiscent of a helicopter when the blade passes the tower.

The developers at the Llandinam windfarm in Wales have been unable to solve the noise problem and complaints continue. At the time of writing, the first neighbouring resident has just succeeded in having his Council Tax reduced on the basis that noise has sufficiently reduced the value of his house to place him in a lower tax band.

The Welsh Affairs Select Committee has recognised the magnitude of the problem: "For existing windfarms we are satisfied that there are cases of individuals being subject to near continuous noise during the operation of the turbines, at levels which do not constitute a statutory nuisance or exceed planning conditions, but which are clearly disturbing and unpleasant and may have some psychological effect." It has proposed very stringent noise limits to be set for all houses within 1.5km of a turbine. "It should be the imention of those limits that windfarm noise of mechanical origin is inaudible at any neighbouring dwelling."

Noise is recognised as a significant cause of stress and related illness in modern society, particularly low-frequency noise.

The difficulty at the planning stage is that no developer can say with any certainty what noise levels will be created by a proposed windfarm, although he will claim that he can. The Energy Technology Support Unit has written: "At present there is no established method for the prediction of wind turbine noise and basic understanding of wind turbine noise is low. Not enough is known of the basic mechanisms which control the noise radiation process to allow the development of detailed prediction methods." (*Assessment & Prediction of Wind Turbine Noise* 1993)

A neighbour of a windfarm in Wales whose house is 0.8 km from the nearest turbine was quoted in the national press: "We call it the twin-tub factor, because it is exactly what the noise is like. The turbines are huge...and we can't go anywhere without this noise."

To introduce unwarranted levels of noise, especially at night, and especially in rural areas where ambient noise levels are very low, is particularly damaging to local amenity.

F. ADVERSE IMPACT ON OTHER INTERESTS

The main adverse impact that windfarm development is likely to have on the local economy of an area relates to tourism. Because wind speeds are best in areas that have often been designated for their beauty and landscape importance, wind developers target those areas where the tourist trade consists of that sector seeking peace, quiet and enjoyment of unspoilt countryside. A National Tourist Board survey shows that 90% of British holiday makers who go to the countryside do so to enjoy it for its own sake and seek no additional "attractions" like theme parks.

A survey by the University of Leiden in Holland has found that the majority of those questioned felt that a landscape lost its interest as turbines accumulated.

Although the first windfarms in Cornwall attracted visits from those already in the area for other purposes, the attraction was one of novelty. If the developers succeed in erecting large numbers of turbines, novelty value will be lost and those seeking rural peace will head for areas not degraded by turbines - for example, National Parks, increasing pressure of use when current levels of visitors are already causing problems.

A typical windfarm would employ one single maintenance operative. At Bryn Titli in Wales even construction workers were Danish, erecting Danish turbines with which they were familiar. The vast majority of turbines are of foreign make. The only benefit to an area is the site rent (£1000 - £2000 pa per turbine) paid to a handful of landowners. That benefit could easily be outweighed by a decline in tourist numbers. It should be noted that with holiday cottages and caravan sites, tourism has become an important element of farm diversification.

Government policy, as outlined in ministerial statements, appeal decisions and Planning Policy Guidelines, is to encourage renewable energy projects *where they are not damaging to other interests.*

G. EFFECTS ON BIRDS

At Tarifa in Spain, the wind turbines have killed birds of thirteen species protected under European Union law, including the Red Kite. (Source: *Windpower Monthly*, Volume 10, No 2, February 1994.)

At Altamont Pass, Livermore, California, 500 birds of prey were killed by the 7,300 turbines during the two year period of study undertaken for the 1992 report ordered by the California Energy Commission. Among the dead birds were at least 78 protected Golden Eagles. (Source - National Audubon Society *Audubon* vol 95 no 5, September 1993)

In Britain, a windfarm has been constructed on the Wye Valley at Bryn Titli, within the foraging area of Hen Harriers and Red Kites.

H. WIDER ENVIRONMENTAL CONSEQUENCES

Windfarms are such a recent phenomenon that it is hard to be certain of their long-term ecological impact However, the Flaight Hill Opposition Group at Hebden Bridge, Yorkshire, commissioned an hydrologist and a number of engineers to examine the neighbouring Ovenden Moor windfarm. They found that the erection of turbines two hundred feet high had cracked the bedrock of this upland moorland and diverted natural watercourses. Around the turbines and along the cable trenches the thin layers of peat are drying out rapidly and it is likely that before long the peat bog will have blown away. A different problem is caused by the tracks to and between the turbines which have acted as dams and formed deep pools of peat "soup", fetid surface water which cannot run or drain away. There is certain to be a knock-on effect on the insects and birds which depended on the ecological staus quo before the arrival of the turbines. Dr John Hedger of the Institute of Biological Sciences at the University of Wales, Aberystwyth, has written: "Wind energy is not as clean as its proponents would have us believe. It is an industrial development and as such causes degradation of the environments where turbines are sited. The result is a loss of habitat for wildlife. The proposed environmental benefits of wind farming - reductions in sulphur dioxide emissions and acid rain - will only come from the very large-scale use of turbines. One environmental problem will simply be replaced by another."

It may be convenient to treat the safety issue under this heading. Blades weigh up to 1.5 tonnes. They have broken off in gales and planed up to 400 metres. The civic authorities in Palm Springs have made developers move turbines to a distance of half a mile from the highway for safety reasons. Turbines cause flicker which frightens horses and can cause riding accidents. They distract drivers on neighbouring roads.

I. WHY HAVE DEVELOPERS SUDDENLY BEGUN TO ERECT WINDFARMS?

Not because of the innate soundness or good economic sense of the technology - the wind turbine generator has been available for 100 years! - but because in 1991 the government introduced subsidy for windfarms through the NON-FOSSIL FUEL OBLIGATION (NFFO). When subsidy comes through the door, common sense flies out of the window. Until the subsidies were introduced, not a single windfarm had been built in the UK.

"All wind energy developments throughout the world are subsidised in one form or another." (DTI statement, 24 August 1994.)

NFFO is a levy on all our electricity bills. 94% of all the money raised thereby goes to subsidise nuclear. The other 6% is divided between renewables - hydro, wind and "biofuels" - landfill gas, sewage gas and municipal and general industrial waste. Through NFFO the Secretary of State for Trade and Industry requires electricity suppliers to obtain specified quantities of their electricity from sources other than fossil fuels.

Under the current tranche of the NFFO, wind energy is bought from the producers at 11 pence per kWh, more than four times the price of power generated by fossil fuel.

Developers now have to tender for subsidy and say at what price they will sell wind-generated electricity. The details of the tender will be known in Autumn 1994. It is expected that the price of wind generated electricity will be 6 - 8 pence per kWh, as compared to 2.5p for that which is conventionally generated.

J. GOVERNMENT POLICY

The UK has a renewable energy target of 1500 megawatts by the year 2000. Government policy is to encourage renewable energy projects where they are:

-Economically viable and competitive, making an economic contribution to diversity and security of supply.
-Environmentally acceptable, causing the minimum harm to countryside and coast.
-Not damaging to other interests.

These are very significant constraints on wind energy. David Curry, Minister for the Environment, has written (letter, 7th April 1993) that **government policy makes no presumption in favour of wind energy and that any application is subject to all the normal planning regulations and constraints.** Tim Eggar, Energy Minister stated (11 March 1994) "The challenge for the wind industry is clear: it must find sites which are acceptable to the planning process and reduce its costs if development is to progress."

Moreover, whereas this government policy on renewable energy has no legal status, the government's responsibility to preserve the countryside does, under statute law (Countryside Act 1968).

Recently, the government has been making it clear that it would prefer decisions about individual windfarms to be made by planning committees at the local level. Notably, John Redwood, the Welsh Secretary, made this point forcibly when he gave evidence to the Welsh Affairs Select Committee. We can infer from this that he would expect inspectors at appeal to maintain a planning committee's refusal of a windfarm application **as long as it was made on sound planning grounds.** The moral, for those of us opposing windfarm development, is that it is crucial to defeat proposals at the initial planning stage.

K. LOCAL PLANNING REGULATIONS

There is no national strategy for wind energy, particulalry in relation to the proliferation and cumulative impact of windfarms and their intervisibility one from another. Planning Policy Guidance Note 22 (PPG 22), the government's guidance to planning authorities in relation to applications for all types of renewable energy development, is almost uniformly regarded as unhelpful. "Planning Officers were unanimous in their dissatisfaction with PPG22" (Welsh Affairs Select Committee report). Because PPG 22 indicates that renewable energy development is in the national interest, planning authorities have felt that they are being pressurised into approving applications despite their serious concerns over the environmental impact of prospective development. Developers choose sites only because they have access to the land and because it is technically suitable; they have no regard for the landscape quality or for the proximity of sites chosen by other developers.

Recent legislation has given planning pre-eminence to the LOCAL DEVELOPMENT PLAN Local Government has become increasingly aware of the need to protect its countryside as an essential amenity and tourist attraction, reflecting this in Local Development Plans by restricting industrial developments to specific areas, largely those which are already industrialised. This makes it difficult for wind farm developers who seek sites precluded by the Local Plan. They are required to find "substantive material reasons" why the restrictions should be set aside. The only material reason that might carry conviction is the reduction in fossil fuel pollution, but the reduction achieved by even a large windfarm is so miniscule as to be in no sense substantive.

L. THE POSITIVE CASE - ENERGY CONSERVATION

Country Guardian is certainly not a NIMBY organisation whose platform begins and ends with opposition to wind energy. We are committed to a reduction in fossil fuel pollution through energy conservation, mainly because it achieves an environmental good without a counter-balancing environmental cost, but also because it achieves a *greater* reduction in pollution for a *smaller* economic cost.

The government has calculated (Energy Paper No 58, HMSO 1989) that a 30% reduction in energy consumption could be achieved immediately through better management or investment in energy saving measures which would be justifiable simply in terms of the money they saved in the short term. This would reduce carbon dioxide emissions by 10%.

One simple example will show that wind energy subsidy is the economics of the madhouse:

-There are 1,628,000 houses in the UK with pitched roof and no insulation.*
-3780 kWh of energy are lost by each such house each year.*
-Insulation to 1990 Building Regulations standard would reduce this to 405 kWh p.a.*
-Insulation thus saves 3375 kWh per house p.a..*
- Insulating 450 houses would save 1.5 m kWh p.a - the output of a 500kW turbine.
-The cost of insulation is a one-off £122 per house*, or £55,000 for 450 houses.
- Through NFFO, the turbine is paid £165,000 each year (1 lp per unit).
- Over the first seven years of the life of the turbine we pay the operator £1.15m.
- Over the entire life span of the houses the insulation costs £55,000.

If under future rounds of NFFO the developers tender to sell electricity for 6p a unit, the annual payment for one turbine is still hugely more than the one-off cost of insulation. (*Source: Pilkington Insulation, UK Mineral Wool Assoc.)

M. CONCLUSION

We were told in the 1960s that tower blocks would solve all our housing problems. Thirty years on, they are being dynamited, clearly recognised as an economic, social and environmental disaster.

Join Country Guardian now and help us to fight a rural catastrophe of similar proportions. Resist the wild-eyed fundamentalists on the fringe of the Green movement who would have us go out and destroy what is beautiful just to prove our Green credentials and to show that we are not middle class romantics. That is the philosophy of the Cultural Revolution and the morality of the Red Guards. Or, if you want political balance, the philosophy of America in Vietnam: "In order to save the country, it is necessary to destroy it."

" Introduce a srap-premium on windmills "

THIS IS A TRANSLATION OF AN ARTICLE IN A DANISH NEWSPAPER 8-30-94 EXHIBIT # 18

The srap-premium on older cars cost much. But seems to have positively influenced traffic safety, the economy and to some extent the environment. Now we ought to introduce a srap-premium on windmills. It will be expensive, but is an absolute necessity. Windmills destroy the environment and the national economy, they give an imbalance in the grid and constitute a negative influence on public health.

Yes, but (what about) the windmill industry which so loudly beats its advertising drum ? It will die, and good riddance. No more unhealthy industry exists in the Queen's realm. In reality it simply is a direct drain laid in the public exchequer. Just ask former minister for energy, Poul Nilson, MP, social-democrat spokesman on energy and a board member of the windmill factory, Veetas A/S . He knows.

Yes, but windmill exports ? There is talk of export to Egypt and India. Thank you very much. Paid for out of tax money, through DANIDA (Danish foreign aid bureau, a branch of the Foreign Office). In other words, a dead loss. As is the whole windmill scam. Minus 2 billion Dkr p.a.. To no earthly useful purpose: Cheap electricity can be bought in Norway and Sweden. Civil Engineer Peter Schoubye's excellent article of 30/7/94 said minus 1 billion Dkr. But does not seem to include compound interest on invested , not dividend-producing capital, some 11 billion Dkr. Nor on costs for the strengthening of the grid, new transformers and continual revision of imbalances in the grid. Other unecessary, heavy costs include the windmill- bureaucracy and so-called " windmill-research ". Simply a waste of money. Windmills are, and will ever remain - a technological dead-end. Only quite marginal details may perhaps be improved.

If it pleases the wind to blow, if the windmill is not broke - the beasts are mechanically very vulnerable - if the wind is neither too weak or too hard - a windmill may produce a little electricity. Just as a candle may give a little light. But just as candles cannot light a modern society, windmills cannot meet its energy-demands.

From the (Govt.) Energydepartment's fat, unecessarily expensive report of January 94 " The economy of private windmills " it is clear that not one single windmill generates an honest net profit. All so-called profit is derived from tax subsidies and legally imposed surcharges, when (windmill -) electricity is paid for. Furthermore, no windmill has yet been constructed that will produce more energy during its short lifespan - some 15 years - than was spent in manufacturing, erecting, keeping running and finally scrapping it. You see, each kind of energy-production should be submitted to a total energy analysis.

Well, but CO_2 ? Ha ! The best friend of most politicians. Because through unscientific scare-campaigns the best source of new taxes. Apart from that, sheer unscientific nonsense. Professor Martin D. Kamen of California who around 1938-40 took part in the mapping of photosynthesis and who in 1941, as the first produced carbon 14 - says : "All this CO_2 talk is just loose chattering. Even much higher amounts of the gas than the present ones will be absorbed by plants, trees and the sea. In fact, more CO_2 is most useful to plant growth." Read what physician Tor Ragnar Gerholm, geographer Wibjörn Karlén and geologist Eric Olausson in Sweden, Hugh Elsaesser and Richard Linzen in the USA, William Mitchell in the UK and Andrew Kenny in South Africa have to say on the scientific contents of the many wild claims made about CO_2 . (and the "Ozone hole") (late-note).
Yes, but the Brundtland-report ? Of no use. Is the attempt of socialists and green fundamentalists to sabotage modern industrial society, which-based on cheap energy - is the basis of our welfare.
All around the World research on new energy forms proceeds apace. Of spec. interest are " hot " and " cold " fusion, respectively, and the all-pervading vacuum-field-energy. Which experimentally - in India, Japan, New Zealand, Switzerland, Germany and USA - can already be tapped in six different ways. Untill the new energy-producers are ready, we shall of course go on using the best available today, coal-power and the environmentally friendly water-power and nuclear-power. Natural gas, the best rawmaterial for the chemical industry - we should abstain from burning for power.
Windmills not only - which is bad enough - destroy our most beautiful landscapes, our national economy and a dreadful number of private citizen's economy as well. The latter through property rendered valueless/unsellable/. See the prejudical judgement handed down by the Tax High Court on 20th March 1989, which substantially reduced the tax-value assessment of a property with a windmill close by. Worst of all is the negative influence on public health.
Windmills produce three kind of noise. High-frequency, low-frequency and infra-noise. High-frequency noise is maddingly irritating. But may to some extent be screened off. Low-frequency and infra-noise, both of which are detrimental to Human health cannot at all be screened off. With extended exposure they act on the psyche, causing depressions, stress and loss of sleep. They may eventually cause cell changes. The minimum safety distance therefore should be min 500 m, preferably - as low frequencies travel far- 1 km to the nearest place where people dwell.
The realization of the simplicist dream of the windmill as our new saviour causes unacceptable disadvantages. Saviour ? From what ? From the windmill -believer's self-created horror-visions of modern society, crystallized into the brain disease Nuclearophobia irrationalis = Irrational fear of

III

nuclear power. The windmill cult is clearly pseudo-religious in character, a sublimation of the believer's fear of life.

Scared politicians, who dared not cooperate in the introduction of environmentally friendly nuclear power, in alliance with green fundamentalists - have caused a major, quite unnecessary environmental catastrophe. Which at the same time is a bleeding wound in our national economy.

Parliament should treat the introduction of a scrap premium on windmills with the highest priority.

translated 20/10/94

IENS ELLIOTT NYEGAARD, DIRECTOR, FRSA.
Bakkegaarden, Isterød, 2970 Hørsholm, (DENMARK).

(original published on debat page of Berlingske Tidende, CPH, on 30th August '94.

EXHIBIT #19

WINDMILLS TOO EXPENSIVE AND BAD FOR THE ENVIRONMENT

A GREAT MISTAKE OF DENMARK TO GO IN FOR WINDENERGY, SAYS EXPERT ON ENVIRONMENTAL ECONOMY.

(By Lars Erik Skovgaard)

Windmills are both an expensive and a bad environmental investment. Calculations show that you get much more for your money by investing in other sources of recurrent energy, e.g. solar heating, or by using the money to reduce the energy-consumption in industry and at power stations. Only at very isolated places may windmills pay their way.

Professor in environmental economy, Finn R. Førsund of Oslo University says this to POLITIKEN. He has just been designated special advisor-member of the Economic Council of Denmark, which is led by 3 independent sages. (Translator's note: The word is " sages" - originally a joke, it has, curiously - become the accepted designation for these people -) .

Finn R. Førsund says that "windmills are an expensive investment in relation to the amount of electricity produced."

"You get much more for your money by investing in other sources of energy or by trying to reduce pollution in other places. You may therefore speak of a mistaken investment, when Denmark builds too many windmills."

"The costs per kWh are much too high. I cannot understand why Denmark puts so much capital into windmills, as the case is. There are bound tobe conflicts with other environmental interests. Big windmills also produce noise," he says.

The scientist also waved away the claim that Denmark, by going in for windmills, has created a substantial windmill-industry which has become a gilt-edged business for the country:

" We are talking about an industry which only exists thanks to the state. Energy produced by windmills cannot compete with low electricity prices. What has been built up is a kind of state-subsidized export industry. But this money could most likely have been much better invested in other environmental projects," says he.

Today Denmark is the World's biggest producer of windmills. Exports have quadrupled since 1990, but home market sales are in the doldrums. Finn R. Førsund says that Denmark should concentrate on bettering its own environment, rather than throwing money inte Eastern Europe.

Published on front page of POLITIKEN, Copenhagen's second biggest paper on 1/1/95. Translated 31/1/95 by Jens Elliott Nygaard, FRSA.

United States Department of the Interior
FISH AND WILDLIFE SERVICE

EXHIBIT #20

JAN 21 1994

Memorandum

To: Director, U.S. Fish and Wildlife Service
Washington, D.C. (D)

From: Regional Director, Region 1
Portland, Oregon (ALE)

Subject: Windpower Expansion Concerns

This memorandum is to keep your office informed and to express our growing concern over the killing of eagles and migratory birds associated with the expansion of the windpower turbine industry. While we support efforts to develop windpower as an alternative source of renewable energy, we believe it is important to address serious environmental issues which have been identified with wind turbines as currently designed. We simply would not like to see one problem resolved by creating a problem that could be as serious in nature.

Installation of producing wind turbines began in California in 1981. Bird mortalities associated with collisions with rotating turbine blades were first noted in 1984. Since that time, two studies of avian mortality associated with the wind energy projects have been completed. These studies and other sources have revealed a disturbingly high loss of federally protected birds. For example, the studies indicate that an average of 40 golden eagles are being killed each year at the Altamont Pass site alone. It has also been estimated that 6,800 passerine birds are killed annually at another site in southern California. Most, if not all, of the losses are in violation of the Migratory Bird Treaty Act, 16 U.S.C. 703-712 and the Bald and Golden Eagle Protection Act, 16 U.S.C. 668.

The Service notified all major windpower companies in writing of the conflict with Federal wildlife laws in 1987. Industry expansion has continued without a solution to the mortality.

In response to growing public concern and the lack of remedial action by the windpower companies, the Service's Division of Law Enforcement initiated a criminal investigation into avian mortalities at the Altamont Pass site in California. The results of the investigation have been referred to the U.S. Attorney, Northern District of California, for evaluation and disposition.

Officials in that office have tentatively recommended that the Department of the Interior assess civil penalties under authority of the Bald and Golden Eagle Protection Act prior to initiation of criminal prosecutions. We are awaiting a formal recommendation from the U.S. Attorney.

Expansion of the industry is currently being spearheaded by U.S. Windpower, a KENETECH Company, which is the world's leading manufacturer of wind turbines. U.S. Windpower is attempting to "mitigate" losses associated with industry expansion by funding additional studies and donating money to various conservation organizations. Company representatives have recently indicated a possible solution to the "problem" will probably not be implemented for at least 8-10 years.

We are particularly concerned over recent proposals to expand into environmentally sensitive areas before a solution to the killing is developed. For example, there are current proposals to place approximately 440 turbines along the Columbia River in Washington and Oregon. The turbines are to be placed adjacent to the Columbia River Gorge Scenic Area at locations known to be frequented by golden eagles, bald eagles, and peregrine falcons. Peregrine falcons have, in fact, been reintroduced along the Columbia River Gorge within the past five years. Because this expansion is being proposed with full knowledge of the potential taking of migratory birds, eagles and endangered species, we intend to open criminal investigations and document all losses. Evidence of killing will be presented to the appropriate U.S. Attorney in Oregon or Washington for consideration of criminal prosecution. We also intend to submit evidence of eagle losses to the Regional Solicitor for civil penalty consideration.

We believe illegal losses must be addressed through the development of safe turbines and not through "mitigation" payments. We further believe these companies must be required to comply with Federal law. The applicable laws do not contain provisions which allow large corporations to simply "mitigate" noncompliance.

There is no question that wind turbines, as they are currently designed and operated, pose a significant threat to migratory bird populations. If expansion is allowed to move forward throughout the Nation without proper safeguards, the current situation can only get worse. We, therefore, believe and recommend that the Service take a strong stand concerning these losses and develop a written policy regarding our position.

MARVIN PLENERT

cc: Assistant Regional Directors for Law Enforcement
Regions 2, 3, 4, 5, 6, 7
Director, Oregon Department of Fish and Wildlife
Director, Washington Department of Wildlife
Pat Wright, Portland Field Office (AES)

DLMCMULLEN:bse

Response to April 8, 1995 Comment Letter from Ronald R. Wiggins

(Including Exhibits 1-20)

1. See the response to the low-frequency noise issue raised in comment no. 1 in the letter from James Gleason.

2. Comment noted. Section 2.7.4.1 of the draft EIS on page 2-79 acknowledges that actual wind turbines would provide greater contrast against the landscape and that the movement of turbine blades would attract the eye and cause the turbines to stand out more in the overall landscape. Section 2.7.3 describes the types of viewers for whom the wind turbines would be visible. The draft EIS conclusion that some people will find the turbines aesthetically displeasing while others will find them pleasing was based on a review of the professional literature regarding wind turbine aesthetics and public perception. The exhibits attached to this commentors letters provide examples of the reactions of individuals who find wind turbines objectionable.

3. The justification of conclusions regarding avian mortality are presented in Section 5.3 of the Avian Technical Report and are summarized in Section 2.5.4 of the draft EIS. As stated in these sections, a conservative worst-case analysis was used to estimate impacts to avian resources. For instance, potential impacts to bald eagles was assessed by assuming the base population was twice as great as what has been observed in these or previous studies.

4. Fire hazards and mitigation are addressed in Section 2.12, Public Services and Utilities of the draft EIS. Section 2.12.3.1 discusses environmental impacts including the risk of fire caused by construction and operations/maintenance and equipment failure.

   Section 2.12.3.2 lists a number of mitigation measures to reduce the risk of fires during construction and operation. These mitigation measures are also included in the Preferred Alternative described in Part 2 of this document.

5. Under State SEPA rules, issues related to profits and personal income, such as the potential for declining property values, are not required to be discussed in an EIS (WAC 197-11-448).

Rec'd 4/5/95 KM

COLUMBIA WINDFARM # 1 DEIS

I feel the following items need to be addressed before a conditional use permit is issued.

1. The 91 Turbines Model AWT-26 are using a high guyed tubular tower. One of the mitigation measures that the Kenetech project has is to use free standing towers. High guyed wires cause collisions and fatalities for birds in flight. How can CARES/Flowind justify getting around this mitigation measure (see pgs 3-10 to 3-11). 1

2. The steel operations/maintenance building (1600ft^2) will be used by up to 3 people at 40 hrs/week each. Uniform Building Code requires water closets and sinks (for washing hands-personal hygiene). This implies flush toilets and running water. How will a septic/drain field system affect springs and wells in the area and how will they drill a well that high up on the ridge without affecting other wells/springs? 2

3. The land owned by me (Terry Walker, Receptor 16 pg 2-89 & 90) can possibly experience noise from this wind turbine project in excess of Noise Abatement ordinances. My land in section 13 is platted for residential. This, the noise, will be brought on by turbine rows A, B, and C (33 turbines) on the CARES/Flowind Project. The nearest turbines are only 150 ft away. This is unacceptable. Who will be legally responsible for noise problems experienced on my land? KENETECH moved their turbines .5 mile away to minimize noise problems. The CARES/Flowind project should be required to do this also. Cumulative noise impact is only one decibel less than daytime limit for Class A land (which mine is - pg 2-88). It could be exceeded periodically depending on wind direction and number of turbines in operation. Who will be liable? Will turbines be removed? (without a court fight?). 3

4. CARES/Flowind project is to have both an 115 KV overhead transmission line and a 24 KV overhead transmission line along the common fence between my property and Columbia Aluminum's land (pg 2-30 to 2-31). These will be unsightly as my trees in that area are only about 35' tall. My land is surrounded by turbines to the west, south, and east and powerlines to the north (Kenetechs) and south. Noise levels will be exceeded during construction from heavy equipoment, and erosion could occur due to new roads during construction. I want neither the noise or dirt from erosion coming down on to my land during construction. Is it possible to run lines up near existing road on ridge top? (see figure 1.1). On erosion, see pg 2-6. 4

5. Swales 11 and 12 both come down through my property (see fig 2.3.1). Water runs trough swale 11 (it comes from near Turbine Row A) on my property from December to June (depending on amount of precipitation). Some water also 5

comes down a shallow swale on the east side of my property from near turbine row B (north end). These are not dry swales as indicated in DEIS. I have pictures to prove it. How will erosion, oil, fuel leaks, etc. during and after construction affect this water on my property? (see pg 2-19, sect 2.3.3.1). 5

6. I have seen Red Tail Hawks, Horned Owls, Bald Eagles, and Western Bluebirds flying near or on my land. Will the noise of the wind turbines cause these birds to leave. Will fatalities among these birds occur because of the guy wires and turbine blades. 6 7

7. The Western Gray Squirrel, Juniper Hairstreak Butterflies, brown bats, Pacific tree frogs, long-toed Salamanders and horned toads, have been found on or near my land. How will these be affected by noise and water pollution on my property. I have personally seen all of these over the last several years. The tree frogs and salamanders were near the seasonal creek that runs through my place. I've seen at least 6 different Western Gray Squirrels in the trees in the spring. 8

8. Why do the photographs taken from different viewpoints not show turbine rows A, B, & C of the CARES/Flowind project. Only part of the turbines are shown. The pictures are deceiving in that aspect. More accurate photos are needed with all turbines shown to give a ture representation (fig. 3.4, 3.6). 9

9. KENETECH proposes to run an overhead powerline up the east side of Columbia Hills Estates,, (in sect 12) and interesecting with the overhead powerlines connecting the east and western portions of their project in Sect. 13 just north of my property. I propose that no new permanent roads be cut to install this line from the substation near Hoctor Road up to the East/West connection. Upgrade and use existing roads to maintain these overhead lines. This would involve the road up through Young and LaFevers property and the road up to the lines crossing Columbia Hills Estates. Another option is to use the public utilities easement up through Columbia Hills Estates (60' wide total along road) to the East/West overhead powerline. No new roads need to be cut. 10 11

10. Turbine oil and probably cleaning solvents are to be stored on site (pg 2-73). Will a containment be used to store the oil and solvents in case a drum or storage tank leaks? What will prevent it from going into the soil, or floor drains in maintenance building? Where will maintenance building floor drains dump to? Not in the ground - it's illegal. 12

11. Damaged or unusable parts can be stored on site (pg2-75). Will this become a junk yard by the maintenance 13

building. Who will monitor these impacts to the site near the maintenance building? Easier to monitor if maintenance building is on Hoctor Road. Garbage and trash pickup - who will collect from the maintenance building if it is up on the ridge?

12. On page 2-84 a goal is to preserve the county's clean air and minimize noise and odors. In the discussion column, it reads "the closest turbine string would be within several hundred feet from the nearest area platted for residential use". This is not true entirely as the northernmost turbines in string B as shown on Fig 1.1 will be within 250' of my property, and noise levels will be exceeded in that area if certain conditions exist. This is unacceptable. 14

13. If a fire occurs (possibly cause by welding or vehicles) during construction and spreads to adjacent property owner's lands, who will pay for the lost timber, habitat, etc? Who will pay to reforest? for Erosion repair? Can vehicle exhaust systems cause grass/brush fires during the dry season (July to Oct)? 15

14. Will a security bond be required so that the companies just don't walk away when the turbines wear out and are too expensive to replace or if the projects don't make it financially. Who will foot the restoration bill including removing all concrete pads? 16

15. Are more turbines going to be allowed than what is currently planned? Will it become an eyesore like Tehachapi and Altamont passes in California? 17

16. How will the general public be kept from trying to get closer views of the turbines by driving up private roads in the area? How many landowners are going to appreciate people walking through their fields, leaving cattle gates open and littering their land to get close to the wind turbines - it happens? How is the county going to help those landowners right near the turbines if we have problems with the public? 18 19

I strongly recommend the following before approval of a conditional use permit for the turbine projects:

1. Use existing roads for access as much as possible, especially as far as powerline access across Columbia Hills Estates. Don't cut new roads across swales. Upgrades - such as graded gravel are required. 20

2. More bird studies may be required. 1994 was a very dry year. How are bird populations in wetter years? 21

3. Pages 2-9 to 2-13 show special status plants on the CARES/Flowind project site. No studies have been done in overhead powerline access areas concerning plants - need to be done. 22

This helps

4. Do not allow guyed wires on any towers to avoid bird collisions. 23

5. Do not approve a conditional use permit until noise problems are solved with property owners within 300ft of the projects boundaries. Mitigation measure - require all turbines to be kept ½ mile from residentially platted property lines. 24

6. Do not allow CARES/Flowind to run overhead powerlines through new areas. Require them to be ran along existing roads. 25

Closing Comments

As the nearest residentially platted property owner to all 3 turbine rows A,B, & C on the CARES/Flowind project, I have many concerns as you can see. In October, I talked by phone with the individual who did the computer model of turbine noise for the CARES/Flowind project. He informed me that he tries to take all things into account when he does the noise model but some things may be missed. He said the turbine noise may be less, and it may be more. Wind direction, swales, temperature inversions, trees, weather, etc. all play a part. I asked if he had ever taken actual noise level readings after a project has been built to see how accurate the computer model was and he said "NO" they had not, but there had been no complaints so far. On Nov 10 & 11 and on Dec 29 & 30, 1994 and again on Mar 3, 1995, I was in Columbia Hills on my land and walked to the site of A & B anemometer towers and the wind was blowing from the east/southeast. This means the noise from turbine rows B & C on the CARES/Flowind project will be heard on my property. This happens more often on that mountain than most people believe (whenever there's High Pressure east of the Cascades and low pressure west of the Cascades). It can happen anytime of the year. Noise levels can be exceeded on my property as pointed out in both Draft EIS's. Kenetech felt that if they kept their turbines ½ mile away from my land, noise would be minimal. CARES/Flowind had told me they can't move their turbines ½ mile away as it will eliminate 33 of their turbines or 1/3 of the project). They had a chance to purchase land on the other side of the vally for less than $15,000 in Sept 1994; I would have then traded my land for it and not been in the way of their project. Flowind backed out. I enjoy my land and have plans to build a summer residence there. I've applied for water rights but there's a two year wait on approval. I've had my access road graded and plan to have a perk test done soon. I've bought house plans and have the paperwork in hand to apply for a residential building permit. Therefore what it says on page 3-16 in the cumulative impact area on noise is not 26

4

true. It still qualifies as a residentially platted property and must be protected by the noise abatement ordinances. The CARES/Flowind project has moved their turbines closer to my property than originally anticipated and added several more to the turbinerows. On March 24, 1995 my son and I conducted a simple noise test on our land. I walked up to where the northern most turbine would be in row B of the CARES/Flowind project - about 175' from our fence line. I talked in a normal outside voice, and he heard me each time. I clapped my hands and he clapped back - we could hear each other plainly. The wind was about 15mph from the west/northwest. The noise reception was great at ground level where some absorption would take place. How much louder it will be from a blade turning on a 140ft tower. The wind was also blowing from the west/southwest down the swales on my property. Noise would carry quite a ways under these conditions. Legally, my property is platted residential, and has been for many years. I already have a building permit approved for a storage building on it. I bring my boy scout troop up there several times a year. Improvements have been made. I sleep there approximately two weeks per year. It should be considered residential for noise abatement (class A land). In conclusion, I enjoy going there to watch the hawks, eagles, and bluebirds. I love watching the western gray squirrels in the trees on my place. I enjoy the quiet - only the wind through the pines and oaks. My children love catching the Pacific tree frogs, salamanders, horned toads, and fence lizards we find there. We've watched brown bats fly through our firelight at night. One question, how will all these be affected by noise and water pollution, and erosion. I don't want to lose all this in the name of progress when it's not needed. Please do not issue a conditional use permit at this time for the CARES/Flowind project. I really feel additional studies need to be done, and other mitigation factors need to be considered. I will do whatever is necessary to keep my property as unaffected as it is now. It costs about one million dollars per megawatt to install wind turbines. How much more expensive it is if they have to be removed and the land restored to stay under the legal noise levels according to abatement ordinances. I strongly recommend the disapproval of a permit for the CARES/Flowind project.

26

Sincerely,

Terry A. Walker

Terry Walker
501 S Zinser
Kennewick, WA 99336
509-783-0605

Response to Undated Comment Letter from Terry Walker

1. This comment applies to turbines proposed for another project the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

2. This comment applies to turbines proposed for another project the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

3. Noise from the KENETECH project could exceed the night-time noise limitation criteria (50 dBA) established under the Washington Administrative Code (Chapter 173-60 WAC) at Receptor 16, if this receptor is determined to be a residential property. This decision cannot be made in this EIS because it necessarily involves a legal question that turns on the development of facts regarding buildability and residential occupancy of this receptor property. The EIS contains a worst-case analysis that discloses the potential exceedance of the nighttime noise limitation criteria. Projected noise levels from both the KENETECH and CARES projects would be 59 dBA, or 1 dBA less than the 60-dBA day-time standard. Thus, the projected cumulative noise level would meet applicable day-time requirements. Klickitat County has authority to enforce the noise ordinance if noise levels exceeded limitation criteria. Mitigation measures provided in Section 2.9.4.2 of the draft EIS could be implemented to reduce noise levels associated with the Project, and would require the Applicant to pay the cost of noise level evaluation if a complaint is filed with the County.

4. This comment applies to turbines proposed for another project the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

5. This comment applies to turbines proposed for another project the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

6. The relatively constant, non-threatening noise generated by wind turbines should not cause birds to avoid the area. Birds, as well as other types of wildlife, tend to be frightened by instantaneous, unexpected noises, such as blasting, and become accustomed to ambient noises.

7. The comment related to guy wires is pertinent only to the CARES' Columbia Windfarm #1 project. Features of the Proposed Action evaluated in this EIS would not include guy wires, thereby eliminating the potential of collision with those wires. Avian mortality from collisions with wind turbine blades is an expected consequence of the Proposed Action and alternatives, as described in Section 2.5.4 of the draft EIS.

8. See the response to comment no. 6. The evaluation in Section 2.2.4 of the draft EIS concluded that no significant change in water quality would be expected from the Proposed Action provided mitigation identified in the draft EIS is implemented.

9. This comment applies to turbines proposed for another project the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

10. Changes to the Proposed Action by the Applicant (KENETECH) would relocate the substation to the west and eliminate the need to run a powerline north along the east side

of Columbia Hills estates (see Part 1 of this document). Therefore no new road in that area would be required.

11. See response to comment no. 10.

12. This comment refers to the CARES' Columbian Windfarm #1, not to the Proposed Action (KENETECH's Washington Windplant #1) evaluated in this EIS. The KENETECH Project would not involve on-site storage of turbine oil or solvents. Nonetheless, the KENETECH Project would create some potential for the release of hydraulic and lubricating oils into the environment due to accidental leakage from the turbines or to an accident during equipment maintenance. Section 2.2.4.2 of the draft EIS, as modified by Part 3 of this document, includes mitigation measures to reduce the potential for lubricating and hydraulic oils to contaminate water and soil resources during both Project construction and operation.

13. This comment refers to the CARES' Columbian Windfarm #1, not to the Proposed Action (KENETECH's Washington Windplant #1) evaluated in this EIS. The KENETECH Project would not involve on-site storage of damaged parts or equipment. These would be stored at an off-site maintenance facility as described in Section 1.3.3, page 1-5 of the draft EIS.

14. The comment regarding the County's goal for air quality and noise is noted. Please see the response to your comment no. 3 above. The remainder of this comment refers to the CARES Project and does not apply to the Proposed Action evaluated in this EIS.

15. Generally speaking, one who causes a fire that results in property damage is liable to the owners for such damages.

16. The Preferred Alternative described in Part 2 of this document calls for a Decommissioning Plan prior to commercial operation to address the underlying issues related to decommissioning and the potential for Project abandonment.

17. The Proposed Action (KENETECH's Washington Windplant #1) includes installation of 115-MW of wind turbine generating capacity or approximately 345 turbines. The CARES Project calls for an additional 91 turbines. Development of each project is contingent on obtaining a Conditional Use Permit from Klickitat County. Proposals to install additional turbines would also have to go through County permit and environmental review processes. To date, the County has not received any additional applications for installation of more wind turbines in the Columbia Hills.

18. The draft EIS addresses the potential for increased tourist traffic in Sections 2.7.4.1 (p. 2-81). Mitigation, in the form of providing signs to direct sightseers to public areas where the Project could be viewed, is described in Section 2.7.4.2. In addition, KENETECH's Proposed Action includes providing locked gates at access points onto the Project site. Section 2.8.4.1 (p. 2-91) discusses the potential for unauthorized entry onto Project lands; Section 2.8.4.2 (p. 2-121) identifies the potential need for increased police service that could be associated with increased unauthorized entry. As mitigation, Section 2.12.3.2 identifies monitoring the site for evidence of unauthorized use and providing additional security if warranted.

19. If landowners have problems with unauthorized entry, vandalism, or other problems with the public, they should contact the County sheriff. The draft EIS discusses the potential the Project may create for increased demand for law enforcement services. Also see response to comment no. 18.

20. Comment noted. The Applicant proposes to upgrade existing roads, rather than cutting new roads, where feasible.

21. See General Response No. 10 and the response to April 17, 1995 WDFW comment no. 3b.

22. This comment refers to the CARES' Columbia Windfarm #1 Project, not to the Proposed Action evaluated in this EIS.

23. This comment refers to the CARES' Columbia Windfarm #1 Project, not to the Proposed Action evaluated in this EIS. Guy wires are not proposed for the KENETECH turbine structures.

24. See response to comment no. 3.

25. This comment refers to the CARES' Columbia Windfarm #1 Project, not to the Proposed Action evaluated in this EIS.

26. Comments noted. They generally refer to the CARES' Columbia Windfarm #1 Project, not to the Proposed Action evaluated in this EIS.

After the April 5, 1995 meeting in Goldendale concerning the wind turbine projects, I felt I needed to give additional comments. I will attach these to the original set, a copy of which I gave to Kathy Fisher.

First, these comments will apply to the Columbia Windfarm #1 project although they may apply to the Washington Windplant #1 (KENETECH) project also. I can't stress the importance of more studies needing to be done. It seems that Klickitat County is heading into this too fast! 1
The more time I spend in Columbia Hills, the more I find and learn. It's a very unique area. I spent approximately 14 hours on the mountain during April 5th & 6th (1995). I watched as a red tail hawk took off from a tree on my land and flew over the area where turbine rows A, B & C of the CARES/FLOWIND project will be sighted. It also flew out over the slopes north of my land, & then flew over to the east where row M of the KENETECH project will be. In the past, I've seen a pair of red tail hawks in this 2
area. This pair were never even sighted for the EIS study, and yet I spot them everytime I'm at my place. The study is incomplete. More monitoring needs to be done. I've also sighted a great horned owl in the vicinity of Columbia 3
Hills Estates several times. Again, its not mentioned as being observed in the area of Rows A, B, & C., but it is.

Second, there are sites on the CARES/FLOWIND project that contain good specimens of petrified wood. In talking to some of the local people, they've also found pieces of petrified wood on Columbia Hills, but none are mentioned in the DEIS study. I'm enclosing a piece of petrified wood that I recovered at a site located in the vicinity near Row B of the Cares/FLOWIND turbine project. It's a good grade of petrified wood & I'm sure other sites exist on both proposed projects. I would be happy to show those interested where this piece was recovered. (There were many more pieces in the area). I feel that sites like these may be ruined by construction of the projects unless they are found & mapped out prior to issuing a conditional use permit. This mountain needs to be studied much more than it has so we don't lose unique sites like this. 4

Third, Jim Weiler (a biologist & the first to comment at the meeting) stressed that the Westeco Gray Squirrel need a least a 1/4 mile or more clearance to prevent disturbance of their nests. My land contains several Gray Squirrel nests within just a few hundred- maybe 300-500 ft. of turbine Row B, & the land to the east of me has Gray Squirrel nests within a few hundred feet of turbine rows B & C. Columbia Aluminum's land (CARES Project) also has some Gray Squirrel nests in some of the pine trees in the swales of Section 13. These were not mentioned in the DEIS. I'm sure this situation 5

applies to both projects.

Fourth, I still have no assurances to the noise problem from the turbines in Rows A, B, & C, from either CARES or FLOWIND. I'm still told - we'll get back to you & then we'll talk. Again, I checked the ability of noise to carry on that mountain down unto my place. I could here my children talking 500 ft away with the wind blowing - they were to the south of me and higher up on the ridge. The noise carried down into the tree. As I mentioned at the April 5th meeting, only a computer model was done; no actual noise tests have been done. On April 5th, a man in a pickup truck was checking the anemometers on the CARES/FLOWIND Project. I was on the ridge between where rows B & C are to be sited, & he was at the anemometer tower by row E, almost ½ mile away. It was a small pickup truck & not loud at all but I could hear his truck coming along the road slowly (maybe 5 mph) long before I saw it (when he reached Row E). He looked as he could see us when my children were talking loudly. Noise does carry on that mountain. He was to the EAST of us. As I mentioned on the previous comment pages, the wind blows from the East/SOUTHEAST more during the year than people realize, thus bringing my kind more noise. On the 5th of April when we heard this truck, the wind was from the WEST/NORTHWEST. It would have been louder if the wind had been from the southeast. When

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he reached the anemometer tower on Rows C & B, we could hear the truck on our place. My statement & point is, do not approve a conditional use permit for the CARES/FLOWIND project (especially rows A, B, C & D) until the noise problem is mitigated with landowners like me. This is not a problem that will go away, but must be resolved. The noise standards in Klickitat County are those established by the Washington Administrative Code (Chapter 173-60 WAC) & could in all likelyhood be exceeded by the CARES/FLOWIND project both during construction & when in operation (See pgs 2-87 to 2-90 in DEIS for Columbia Windfarm #1). I am on residentially platted land (Class A) & have already bought house plans to eventually build. Until I have water rights (which I've applied for & there's a two year wait), I can't have water to my place. It's still legally residentially platted land until proven otherwise. Anything less than meeting noise abatement ordinances is unethical & illegal, & someone or some group will be liable. To allow construction & hope that the noise will not be a problem is taking a chance & could prove costly. Let's resolve this problem before issuing a conditional use permit. 6 7

These are all the additional comments & information I have. Remember, we have a unique opportunity for windpower but it's being placed on a unique mountain in a beautiful area. We need more studies & need to go slow. The winds and the mountain are always here. The wind turbine companies won't go somewhere else if we ask for more time for studies & go at this 8

very slow & cautiously. We need to look at all the angles, & not cut corners for the sake of a few dollars. Many of the dollars will go to businesses outside of Goldendale, because contractors tend to do business with companies they've dealt with before. Some businesses in Goldendale will receive some added business, but when the construction is done, the residents of Goldendale will have to live with the decisions - Make sure its the right one. I noticed that several of the people commenting at the April 5th meeting. That we're speaking in favor of the project were from the Seattle & Portland area. They don't want wind turbines on their side of the Mountains although there are many good site there. Ask yourself - Why? They've seen these projects in California & what happened there - especially when companies just walked away when the turbines broke - its unsightly. Take a good look at Altamont Pass & Tehachapi Pass & see if we want Columbia Hills to look the same. After this, where else will they want them, Haystack Butte, Lorena Butte, the Simcoes. They're already looking at Wallula Gap. (near Umatilla), Walla Walla, & Horse Heaven Hills. We need to set the example & make sure its done right. Thank you for your time.

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Sincerely
Terry Walker

T. Walker
501 S. Zinser St.
Kennewick Wa 99336

Response to Comment Letter from Terry Walker (Undated, After Draft EIS Hearing)

1. See General Responses No. 1 and No. 10 and the response to April 17, 1995 WDFW comment no. 3b.

2. Two red-tailed hawk nests have been identified near the area that is described. See Figure 2.5.4 of the draft EIS.

3. Great horned owls were observed in this area, but no nest site was found. It is assumed that great horned owls may nest in oak woodlands.

4. Your finding of petrified wood on the CARES site is noted.

5. Measures to mitigate potential impacts on western gray squirrel are identified on page 2-39 of the draft EIS. See the responses to WDFW comment nos. 4 and 21p.

6. This comment relates to the CARES Columbia Windfarm #1 Project. However, see response to comment no. 3 from undated comment letter from Terry Walker.

7. As discussed in Section 2.9.4.1, Operation, fifth paragraph, the EIS concludes that whether or not the Walker property would be considered a residential property is a legal issue that is not resolved. The EIS reports a worst-case scenario of potential noise levels at the Walker property by the KENETECH Project and the cumulative impacts including the CARES Project. See also response to comment No. 3 from Terry Walker's other undated letter.

8. See General Response No. 1.

9. Comment noted. The Preferred Alternative included in Part 2 of this document calls for a decommissioning plan prior to commercial operation of the Project.

10. Comments noted.

307 Hoctor Road
Goldendale, Wa. 98620
March 12, 1995

KENETECH Windpower, Inc.
500 Sansome Street
San Francisco, California 94111

Dear Sirs:

In regards to your proposed project, the Washington Windplant #1 site located in the Columbia Hills area of Klickitat Co., for some reason my husband and I, William C. & Claudia R. Young, have been forgotten or just disregarded.

The easement you have for William F. Young's property excludes the West 640' of the North 425' of the Northeast quarter of the Northwest quarter of Section 1, Township 3, North, Range 16 East, W. M. Therefore, your proposed Project site includes 12,624 acres, not 12,630 acres. The six acres you have included in your proposed site is not part of your easement. 1

Our six acres is a proposed home site. The property has a well, a septic system and power on it. It has been rented to owners of mobile homes in the past. I will repeat, it's a proposed Home site! Concerning your proposed substation, I cannot imagine it right in my backyard. Let me ask you, would you put a substation in your backyard?

The two pump station near your Project are at lease a half mile off the main road, not near home sites.

Bruce and Peggy Davenport, the leasee of William F. Young's farm, were not even consulted or informed as to where a proposed substation would be located. There is concern that you can do as you please and expect the farmer to lose useage of good farmable ground, when you could have at least asked the mans advice. One acre of crops for years, is a lot out of a farmers pocket.

Enclosed are pictures of the intermittent stream, which passes through your Project. This stream can flood the corner of your proposed substation site. All that water and electricity, I would not want to work around it. I would think, you would want your substation on a little higher ground. A farmer's field can flood and he still can harvest his crop for the year.

We would be real interested to hear your comments concerning our proposed home site.

Sincerely,

William C. & Claudia R. Young

cc: Kathy Wisher, Bonneville Power Administration
cc: Curt Freyer, Klickitat County Planning Director


BPA MIDWAY - BIG EDDY
N.E. quarter of N.W. quarter of Section 1

Response to March 12, 1995 Comment Letter from William and Claudia R. Young

1. In response to the issues raised in this comment letter, the proposed substation has been relocated as described in Part 1 of this document and in Figure F-1.

Recd 4/5/95
KFF

P.O. Box 215
Lyle, WA 98635
April 5, 1995

Kathy Fisher
Project Leader
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208 - 3621

Dear Ms. Fisher:

Subject: Kenetech & CARES Draft EIS for Proposed Columbia Wind Farm #1

Thank you for the opportunity to comment on the proposed windpower projects for a site east of Goldendale. My name is Bill Weiler, and I live in Lyle, Washington, 25 miles west of the project sites. By profession, I am a wildlife biologist and I have been on the windpower sites courtesy of Dana Peck.

You must understand that due to the numerous problems associated with both projects, you've put a number of windpower supporters like myself on the defensive. I had hoped to come tonight and embrace the windpower plans, because next to solar energy, there is no more environmentally-compatible energy producer. Unfortunately, much work needs to be done in order to win me back over to your side.

1. The biggest biological argument against the projects is that only year of wildlife surveys were performed. There is absolutely no way that the Draft EIS author, Kenetech, or CARES can make the assumptions, predictions or management decisions that you do based on only one year of surveys. Why did the companies only conduct 1 year of surveys? Why aren't these surveys being repeated this year? Generally, researchers are looking for at least 3 - 5 years before trends in a specie's population status can be ascertained with any accuracy. 1

2. The mitigation measures for wildlife impacts are woefully inadequate, particularly for the western gray squirrel. More on this later. 2

3. My opinion is that through the windpower projects, as currently proposed, BPA is violating one of its major responsibilities: "Restoring and enhancing environmental quality and avoiding or minimizing possible adverse environmental effects." (Page S-2). 3

4. One gets the distinct feeling that the Draft EIS documents are simply an advertisement for the projects rather than an objective biological and economic assessment. The NEPA process is not served by poorly written environmental impact statements. 4

5. Many places in the Kenetech EIS document boast that without the project, the site will continue to deteriorate because of grazing. Yet, grazing will still be allowed to continue and the spread of noxious weeds will only be enhanced by ground disturbance and new roads. 5

6. Speaking of roads (Page 1 - 12), I urge that the all roads leading to the sites by gated (closed) to the public. This should be one mitigation step to reduce recreational and/or vehicular traffics impacts to wildlife. 6

7. White oak (Page 2-23) The Kenetech project will remove 22 acres of Oregon white oak. This is unacceptable. The wind turbines should not be strung through oak woodlands. Turbine strings N, Y, and Z should be moved to avoid white oak stands. At the very minimum, Klickitat County and BPA should insist on the purchase of additional oak woodlands and donate the acreage to Nature Conservancy, Central Cascade Alliance or Washington Department of Fish & Wildlife. In addition, at least 22 acres of oak woodland should be planted on the site. 7

8. Western gray squirrel mitigation (Page 2 -39). I ask for 2 years of western gray surveys before the first bulldozer shows up. There are apparently dozens of active western gray squirrel nests on the Kenetech project site. The western gray squirrel is a state-threatened species which will soon be petitioned as a federally threatened species. You may have a dogfight on your hands if the project impacts the western gray squirrel in any way. 8

The Kenetech Draft EIS mentions staying 400 feet away for any nest site from May to September. This is not adequate. Western gray squirrels nest twice yearly, from late December to September. Additionally, I recommend retaining at least a 60% canopy in the stand around each nest site, as Dr. Susan Foster of the Oregon Fish & Wildlife Commission recommends, not just 50% canopy. 9 10

One of many unjustified assumptions in the Draft EIS involves gray squirrel impacts. Page 2 - 41: "The project would reduce habitat for western gray squirrel to a relatively minor extent." There is no scientific basis to this statement. Gray squirrels only have a 5 - 16 acre home range, and the project is eliminating at least 22 acres of oak woodlands, in addition to noise factors, and other disturbance during the nesting season. In addition, western gray squirrels are highly susceptible to mortality by motorized vehicles. Again, road closures would serve to mitigate for this species. 11 12 13

9. Other sensitive habitats: (Page 2 - 40) The Kenetech project proudly states there will be no development in talus, cliffs, or rock outcrop areas. This is not adequate. Buffers are needed and BPA/Klickitat County should require buffers as recommended by the Washington Department of Fish & Wildife. 14

10. Amphibians/Reptiles. I don't recollect reading anything on these wildlife species. 15

11. Long-billed Curlew: (Page 2 - 45) Two curlews were seen on the site. There was another poor statement, "Project site receives only occasional use." We don't know if this sighting represented a nesting 16

pair. I know of at least one breeding curlew pair utilizing the nearby Centerville area.

12. Western bluebird: This species is nesting in the oaks on the project site. I think approximately 115 bluebirds were counted. What happens after 22 acres of oaks are removed? 17

13. Impacts to raptors: Nowhere in the Kennetech EIS was there a serious reference to the California Energy Commissions's March 1992 report titled. "Wind Turbine Effects on Avian Activity, Habitat Use, and Mortality in Altamont Pass and Solano County Wind Resource Areas. 1989 - 1991." 18

This is one of the few research efforts to document mortality on raptors. I quote from the executive summary, "Our estimate of the number of raptors killed by windfarm-related injuries within the entire Altamont Pass WRA varied 403 in the first year of the study to 164 during the second year. Of these raptor deaths, we conservatively estimated that 39 golden eagles were killed each year." 19

Yet on Page 2 - 53 of the Kennetech EIS, it is estimated that only "6 - 20 raptors could die." Based on the California report, Kenetech's guess of predicted raptor mortality seems much too low.

On Page 2 - 55, the only reference to potential golden eagle impacts by the turbines is, "Golden eagle mortality expected."

14. One recommended mitigation measure is that no turbines will be placed within 1 mile of any raptor nest. 20

15. Apparently a bald eagle roost area has been located on the Kenetech site. I urge that no turbines be placed in the vicinity of this roost area. 21

16. Peregrine falcons: Another questionable and certainly insensitive statement from the EIS reads on (Page 2-54), "If one of these peregrines were to strike a turbine, it would be unlikely to affect the viability of the population of the Columbia Gorge Management Unit." We are talking about a federally listed species with only seven confirmed pairs of peregrines in the entire Columbia River Gorge area. 22

17. On page 2 - 93, the EIS admits that only one year study has been conducted on wildlife inventory. I cannot overemphasize the need for continual research. 23

18. In conclusion, my recommendations are as follows:

1. Close all roads leading into the project area.
2. Leave intact the 22 acres of Oregon white oak. If so, you might be able to prevent impacts on western gray squirrels and western bluebirds. 24
3. No road construction or turbine construction within 1/4 mile of known western gray squirrel nests during the January 1 - September nesting period.
4. Eliminate any turbines within one mile of any raptor nest.
5. Buffer sensitive habitats such as talus slopes, riparian area, cliffs, etc. In other words, do not allow any roads or turbines in sensitive area buffers.
6. Continue wildlife inventories in 1995 before and after placement of turbines.
7. Protect bald eagle roost area.

If these recommendations are followed, I could support the development of a prototype wind farm on the west side of Juniper Point. Two years of monitoring for avian mortality would be part of the agreement with consultation with both the U.S. Fish & Wildlife Service and Washington Department of Fish & Wildlife would occur frequently. 25

The Draft EIS is mistaken in its most basis assumption, wrongly stating that the Columbia Hills is not a prime areas or raptors and not an important migration route. It appears that the Columbia Hills area is as 26

rich in wildlife as the aborted Rattlesnake Hills area in Benton County,

Washington, yet until we have more data, the significance of Klickitat County site won't be fully known. I hope Kenetech and CAAES will immediately begin their 1995 inventory and will continue to monitor the sites once wind generation occurs.

Though both these projects are on a fast track for approval, hopefully Kenetech, CAAES, and BPA are aware, that in addition to the federal Endangered Species Act, that adherence to the Migratory Bird Treaty Act is also required. Both wind power projects may be challenged if the proponents do not do everything within your "power" to protect migratory bird species. 27

Sincerely,

William J. Weiler

Response to April 5, 1995 Comment Letter from William Weiler

1. See General Response No. 10.

2. See the response to April 17, 1995 WDFW comment nos. 4 and 21p.

3. See General Response No. 3.

4. Comment noted. The draft EIS was objectively prepared by third party consultants to meet the environmental review requirements of NEPA and SEPA.

5. Measures to reduce the potential for noxious weeds created by the Proposed Action are provided in Section 2.3.4.2 (page 2-27) of the draft EIS as modified by Part 3 of this document. Part 3 of this document modifies the "No Action" discussions in the draft EIS that impacts from continued grazing would also occur under the Proposed Action and all alternatives.

6. Comment noted. Gating access roads is included in the Applicant's proposal.

7. Recommendations to mitigate for the loss of oak are noted. Please see the response to WDFW Comment number 21a. The Alternative Overhead Powerline Alignment, as described in Section 1.5.1 of the draft EIS, was designed to address this issue. The Preferred Alternative, described in Part 2 of this document, includes measures to reduce impacts to oak habitat and to mitigate losses.

8. All oak and oak/pine stands within the Primary Study Area were assumed to be occupied by western gray squirrel in the assessment of impacts in Section 2.4.4.1 of the draft EIS. Additional studies would only confirm this or would reduce the extent of the habitat considered to be occupied by western gray squirrels.

9. See response to comment no. 2.

10. Comment noted. See the responses to WDFW comment nos. 4 and 21p.

11. Because, under the Proposed Action, the amount of oak habitat that would be lost represents less than 10 percent of that available on the site, the loss is not considered major in terms of the existing conditions.

12. See the responses to April 17, 1995 WDFW comment nos. 4 and 21p. Also see Part 2, Preferred Alternative, and modifications to mitigation for impacts to western gray squirrel described in Part 3 of this document.

13. The recommendation to close roads to minimize road kill of western gray squirrel is noted. The Applicant's Proposed Action would involve providing locked gates at access roads to the site. The Applicant has no authority to restrict landowner assess or use.

14. See the response to the April 17, 1995 WDFW comment no. 21h.

15. Amphibians and reptiles are discussed in Section 2.4.3.2 on pages 2-32, 2-33, and 2-34 of the draft EIS.

16. The two observations of long-billed curlews were made at different times of the year. Based on the amount of time spent on the Project site over the course of a year (85 person-days), this number of sightings is very low. Nevertheless, the draft EIS assumes that long-billed curlews may use the site (see Section 2.5.3.1 on page 2-45).

17. The loss of oak habitat would reduce nesting habitat for western bluebirds and other species. This was implied but not stated in the draft EIS. Part 3 of this document modifies Section 2.4.4.1 to clarify this issue.

18. This reference was cited as Orloff and Flannery (1992), rather than California Energy Commission (1992). The document was a major source of information for both the Avian Technical Report and the draft EIS.

19. See the responses to the April 17, 1995 WDFW comment no. 6 and Central Alliance comment no. 13. Discussions of impacts to golden eagle are also presented in Sections 5.3.2 and 5.4.2 of the Avian Technical Report.

20. The recommendation for 1-mile buffers is noted. See response to April 17, 1995 WDFW comment no. 21h.

21. Klickitat County, BPA, and the Applicant are addressing potential impacts and mitigation measures for bald eagle and other threatened and endangered species through formal consultations with the USFWS as part of the Section 7 consultation process under the Endangered Species Act. In addition, the Preferred Alternative, described in Part 2 of this document, would restrict development in the eastern area of the site until an additional winter season of bald eagle study and an additional year of peregrine falcon study are conducted.

22. See the response to the April 17, 1995 WDFW comment no. 11, Central Cascade Alliance comment no. 14. As part of consultation under Section 7 of the Endangered Species Act, the USFWS is determining whether the Project would jeopardize the continued existence of the peregrine falcon in the Columbia River Gorge.

23. See General Response No. 10.

24. Recommendations regarding mitigation measures are noted and were responded to in earlier comments.

25. Conditional support for phased development and for a monitoring program is noted. Monitoring was identified as a potential mitigation strategy on page 2-58 of the draft EIS. The Preferred Alternative, described in Part 2 of this document, includes phased development and ongoing monitoring.

26. See General Response No. 11.

27. See General Response No. 9. These laws are enforced by the USFWS and U.S. Department of Justice. Klickitat County, BPA, and the Applicant are coordinating with the USFWS through formal consultations under Section 7 of the Endangered Species Act and through informal discussions regarding other applicable laws, including the Migratory Bird Treaty Act.

Rec'd 4/12/95

William H. Link
10300 Hwy. 14
Goldendale, WA. 98620

Kathy Fisher - ECN3
Bonneville Power Administration
905 NE 11th Avenue
Portland, Oregon 97232

Dear Sirs

I spoke at the public comment hearing but had one additional thought after thinking about speakers comments about noise. So, I thought I would restate my points I made and include my concern about the noise. I am addressing both wind power projects. 1

- Noxious weed control is left kind of vague in the Impact Statement. I would like to see a specific statement stating that the projects must follow all recommendations laid out by the Klickitat County Weed coordinator. 2

- 6 to 20 raptors each year being killed is unacceptable. If this project is allowed it must provide for habitat improvement here or somewhere else to replace those birds or ideally provide for more replacements than what is being killed. 3

- The windmills look like they are going to be ugly but maybe we can get used to them. It seems a shame to put them on the Gorge, but it is a windy place.

Additional Points from discussion at the meeting.

- They shouldn't be placed anywhere that the noise reaches residences. The known standards for noise problems shouldn't be set aside. We live within plain view of one of the planned turbine strings, now I am wondering if we and our horses, dogs, and other animals are going to bothered by the noise. Dogs are more susceptible. 4

- We maintain and take care of all aspects of our private road leading to our house. As I could see their plan, our road is listed but didn't appear to be used. I expect that there will be no other than emergency use of the private loops road. 5

- I like the proposed idea that there be a 100 turbine limit imposed for a number of years so that more data can be gathered. We can measure how much noise, see how many other problems appear. I do think the one speaker made a good point that data collection on bird kills may be a problem as the coyotes do make their rounds every day here. 6

- I don't think the Cares windmill design should be allowed, it is plainly poorer technology from a bird kill aspect. 7

- I think the Indians comments would have more credibility if their settlements along the river didn't have so much garbage heaped around. 8

Thank you for your time gathering all this together.

William H. Link

Responses to Comment Letter (Undated) from William H. Link

1. Parts 2 and 3 of this document incorporate this recommendation.

2. The Preferred Action (see Part 2 of this document) includes enhancement/preservation to replace lost habitat value for oak and certain shrub-steppe habitats.

3. Comment noted.

4. The Applicant is required to meet state noise standards. Lack of compliance would be a matter of enforcement for Klickitat County.

5. The Applicant will only use roads where permission is granted from appropriate landowners.

6. See Part 2, which describes the Preferred Alternative. The lead agencies have determined that geographic-based conditions on development would be more effective than simple limits on the number of turbines.

7. Comment noted.

8. Comment noted.

4.4 Public Hearing Testimony (April 5, 1995) and Responses

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

IN AND FOR THE COUNTY OF KLICKITAT

WASHINGTON WINDPLANT DRAFT NEPA/SEPA)
ENVIRONMENTAL IMPACT PUBLIC HEARING)

VERBATIM REPORT OF PROCEEDINGS

Thursday, April 5, 1995

* * * * * * * * * * *

Goldendale, Washington

REPORTED BY:
KRISTINA L. BADGLEY

MS. TANGORA: This is a joint hearing on draft NEPA/SEPA environmental impact statements that have been prepared for two projects. One is Washington Windplant No. 1, which is proposed by KENETECH Windpower Inc. And the second project is Columbia Windfarm No. 1, which is proposed by CARES. The purpose of the hearing tonight is to receive comments on the draft EISs. All comments will be responded to and included in the final EISs for the two projects.

We have a lot of people here tonight. If you have lengthy written comments with you, please submit them and try to keep your oral comments a little brief or just highlighting the main points.

In addition, I guess I would like to take a count. We had about 15 people sign up to speak, but I don't know if everybody signed up. So if you could raise your hand if you would like to speak tonight. Because this is a hearing on two separate documents, I would ask you to be very clear about which project you are commenting on and give your name and address in advance of presenting your comments. We may stop you and ask you to speak up. We have a very brief presentation on the two projects, basically just factual information on the

SEPA and environmental review process. Once a final EIS is prepared for the two projects, Klickitat County will be conducting hearings on issuing conditional use permits and notice of the timing of those hearings will appear in the local papers. Bonneville Power has their own process that they will go through, and Kathy Fisher will discuss that process real briefly.

MS. FISHER: I was just going to kind of reiterate what Pat said. I work for Bonneville Power. My name is Kathy Fisher, and I have coordinated the NEPA environmental review side of both of these documents, and these are both joint NEPA/SEPA documents and both suffice for each process. I guess as a federal agency, I want to make sure that everybody understands that the County is the primary decision maker with both of these projects; that neither of the projects could be implemented if the County does not issue a permit. They are not Bonneville projects, per se. The draft EIS of the Columbia Windfarm project is tiered from Bonneville Power's resource programs EIS, and that means the resource programs EIS was kind of an umbrella document that was done to compare and evaluate the different energy resources

available in the region. And it evaluated the environmental impact from the different types of resources, not just wind power, and that EIS is what allows us to -- In this draft EIS we don't have to go out and look at alternative energy resources besides the wind power resource that we are looking at for this project. I guess with that I don't want to say a lot, but I want to reiterate that this is your meeting. We are here to listen to your comments and take your input. We do have a court reporter here, and all your comments are being taken verbatim. And again, it is important to state your name and address so we can get that on the record. I also welcome anybody to provide written comments and do encourage that. You don't have to speak up. You can provide these written comments. The close of the comment period for Columbia Windfarm is May 1, and for KENETECH is April 17. So if you don't get comments put here, you still have time after this date.

MS. TANGORA: Comments can be provided to either Curt Dreyer at the Klickitat County office or to Kathy Fisher at Bonneville Power. I am going to take a minute to give a real brief background of the proposed KENETECH project and the alternatives

that are evaluated in the EIS. The proposal by KENETECH Windpower is an application for conditional use permits for a 115 megawatt wind power generating facility that would be constructed on a site of about 12,630 acres in the Columbia hills. Most of the sites would not be developed but would continue in agricultural use, but the wind terminals would be stringed in various ridges on site.

KENETECH is proposing to phase the development, but their application is for a full 115 megawatt project. So as they are proposing it, they are asking for a conditional use permit for the entire project.

The draft EIS looks at a number of alternatives that could potentially reduce impacts. One is an alternative power line route that avoids certain sensitive habitats and certain plant communities. A second alternative that is looked at in the phased development alternative where either the eastern portion or the western portion of the project would be developed at a phase so the first phase would be concentrated in a smaller area. If subsequent phases were not developed, then the project would not extend over as broad an

area. The no-action alternative is also considered, and finally there is a restricted areas alternative that puts restrictions on certain portions of the site based on the expected environmental impact. So there are four alternatives plus the proposals that are evaluated in the EIS.

Then I think we will open it up to comment. I will just call commenters off the sign-in sheet. Then if we get to the end and there is anyone else who wishes to speak, we can open it up to further comment. Again, when you are called, please provide your name and correct spelling and address for the court reporter and be real clear about which project your comments pertain to.

The first speaker is Bill Weiler.

MR. WEILER: My name is Bill Weiler, W-E-I-L-E-R, P.O Box 213, Lyle, Washington. I am here with my two children today. My profession, I am a wildlife biologist. I bid on the sites, wind power sites courtesy of Dana Peck from KENETECH, which I appreciate. I guess my comments pertain to both sites. I think the wind power proponents need to understand that there are a number of problems that remain associated with both projects. Because

of this, a number of wind power supporters such as myself are kind of on the defensive. I really hoped to come tonight and embrace the wind power plants because next to solar energy there really is no more environmentally compatible energy producer. But unfortunately there is a lot of work to be done in order to win me back on your side.

One of the biggest biological arguments against the projects is that only one year of wildlife surveys were done, to my understanding. There really is no way that the KENETECH or CARES folks can make the assumptions, predictions or management decisions that were made based on the one year of surveys. We ask why the companies only conducted one year of surveys. We ask that they be repeated this year before the project comes on line. 1

Generally the researchers in my field are looking for at least three to five years before a trends in a species population status can be ascertained with any accuracy. Point No. 2, the mitigation measures for wildlife impacts are inadequate, particularly for the Western Gray Squirrel. 2

No. 3, my opinion is that through the wind 3

power projects it is currently proposed BPA might be violating one of its major responsibilities, which is, quote, restoring and enhancing environmental quality and avoiding or minimizing possible environmental effects. 3

Point No. 4, I was disappointed in the EIS documents because they seemed to be mostly advertisement for the project rather than objective biological and economic assessment. I think the NEPA process and the SEPA process are poorly served by purporting written environmental impact statements. 4

No. 5, many places in the KENETECH report boast that the grazing impacts will increase if the KENETECH project doesn't go through. Yet as I understand, grazing will still be allowed to continue as the spread of noxious weeds will only be enhanced by ground disturbance and new roads. 5

No. 6, speaking of new roads, I urge that all roads leading to the site be gated or closed to the public. This should be one mitigation step to reduce recreational and/or vehicular traffic impacts to wildlife. 6

No. 7, the Oregon white oak. The KENETECH project will remove 22 acres of Oregon white oak, 7

which I find unacceptable. I know there is alternatives that prevent this, and I urge that those be considered. The wind turban should not be strung throughout oak woodlands. Turbine strings N, Y and Z should be moved to avoid white oak stands. At the very minimum, Klickitat County and BPA should insist that the purchase of additional oak woodlands and donate the acreage to an environmental organization where the State gave an indication the 22 acres are destroyed. And in addition, the 22 acres of oak woodland should be planted on the site. 7

No. 8, Western Gray Squirrel mitigation. I ask for two years of Western Gray Squirrel surveys before the first bulldozer shows up. There are apparently dozens of active Western Gray Squirrel nests on the KENETECH site. The Western Gray Squirrel is a state-threatened species which soon will be petitioned as a federally threatened species. You may have a dogfight on your hands if the project impacts the Western Gray Squirrel in any way. 8a

The KENETECH Draft EIS mentions staying 400 feet away from any next site from May to September. This is not adequate because Western 8b

Gray Squirrels nest twice yearly from late December to September so we are missing a few months in there.

Additionally, I recommend retaining at least a 60 percent canopy in the stand around each nest site, as Dr. Susan Foster of the Oregon Wildlife Commission recommends. I think the EIS recommends a 50 percent canopy cover. 8c

One of the assumptions in the EIS, which I think is unjustified, involves Gray Squirrel impacts. Quote, the project would reduce habitat for Western Gray Squirrel to a relatively minor extent, end quote. There is really no scientific basis to this statement. Gray Squirrels only have 5-16 acre home range. The project is eliminating at least 22 acres in oak woodlands, in addition to noise factors and other disturbance during the nesting season. Western Gray Squirrels are highly susceptible to mortality by motorized vehicles. Road closures would go a long way for mitigation purposes. 8d

Point 9, other sensitive habitat. The KENETECH project states there will be no development in the talus, cliffs or rock outcrop areas. This is not adequate because the Department 9

of Fish and Wildlife of the State of Washington recommends buffers of these sensitive habitats and ask that they be adhered to. 9

Point No. 10, amphibians and reptiles, I don't recollect reading anything on these wildlife species. 10

Point No. 11, Long-billed Curlew: Two curlews were seen on the site. Another statement that I find to be a poorly written statement, quote, project site receives occasional use, end of quote. We really don't know if this siting represents a nesting pair. I know of at least one breeding curlew pair utilizing the nearby Centerville area. 11

Point No. 12, Western Bluebird, the species nest in the oaks of the project site. I think approximately 115 bluebirds were counted, and we don't know what the impacts are if the 22 acres are removed. 12

Point 13, impacts to raptors, this is probably the key point here. Nowhere in the KENETECH EIS was there a serious reference to the California Energy Commission's March 1992 report titled, Wind Turbine Effects on Avian Activity, Habitat Use and Mortality in Altamont Pass and Solano County Wind 13

Resource Areas. To my understanding this is one of the few research efforts in the country to document mortality on raptors. Quote, our estimate of the number of raptors killed by windfarm-related injuries within the entire Altamont Pass WRA varied from 403 in the first year of the study to 164 in the second year. Of these raptor deaths, we conservatively estimated that 39 golden eagles were killed each year, end of quote. On Page 2.53 of the KENETECH EIS it is estimated that only six to twenty raptors could die. 13

Based on the California report, KENETECH's guess of predicted raptor mortality seems much too low. On page 2.55, the only reference to potential golden eagle impacts by the turbines is, quote golden, eagle mortality expected.

One recommended mitigation measure is that no turbines should be placed within one mile of any raptor nest.

Point No. 15, apparently a bald eagle roost has been located on the KENETECH site. I urge that no turbines be placed in the vicinity of this roost area. 14

Point No. 16, peregrine falcons, which is a federal district species, another questionable and 15

certainly insensitive statement from the EIS reads, quote, if one of these peregrines were to strike a turbine, it would be unlikely to affect the viability of the population of the Columbia Gorge Management Unit, end of quote. 15

We are talking about federally listed species with only seven confirmed pairs of peregrines in the entire Columbia River Gorge area.

Point 17, on Page 2.93, the EIS admits only one year study has been conducted on wildlife inventory. I cannot overemphasize the need for continual research. You will be pleased to here in conclusion, my recommendations are as follows: 16

Close all roads leading into the project area. Two, leave intact the 22 acres of Oregon white oak. If so, you might be able to prevent impacts on western gray squirrels and western bluebirds. No. 3, no road construction or turbine construction within a quarter mile of known western gray squirrel nests during the January 1 to September nesting period. No. 4, eliminate any turbine within one mile of any raptor nest. Point 5, buffer sensitive habitats such as talus slopes, riparian area, cliffs, etcetera. In other words, do not allow any roads or turbines in sensitive 17

area buffers. No. 6, most important, continue wildlife inventories in 1995 before and after placement of turbines. No. 7, protect bald eagle roost area. 17

If these recommendations are followed, I think I could support the development of a prototype wind farm on the west side of Juniper Point. Two years of monitoring for avian mortality should be part of the agreement with consultation with both the U.S. Fish and Wildlife Service and Washington Department of Wildlife should occur frequently. 18

The Draft EIS is mistaken in its most basic assumption, wrongly stating that the Columbia Hills is not a prime area for the raptors and not an important migration route. According to contacts with the Official Wildlife Service, the Columbia Hills area appears to be just as important as the aborted Rattlesnake Hills area in Benton County. 19

Yet until we have more data which is the significance of Klickitat County site won't be known. KENETECH and CARES will immediately begin their 1995 inventory and will continue to monitor the sites once wind generation occurs.

Both of these projects are kind of on a fast track for approval. Hopefully KENETECH, CARES, and 20

BPA are aware, that in addition to the Federal Endangered Species Act, that adherence to the Migratory Bird Treaty Act is also required. Both wind power projects may be challenged if the proponents do not do everything within your "power" to protect migratory bird species. Thank you. 20

MS. FISHER: The next person is Jay Letto.

MR. LETTO: My name is Jay Letto, address 1208 Spokane Road, White Salmon, Washington, 98672.

I have been a Klickitat County resident for about three years. I am the former president of the local Audibon Chapter for a couple of years and followed the wind power issue, both sides pretty closely for the past year and a half or so. I worked to convince Wasco County to delay the decision on the Seven Mile Hill facilities last year, and they are going to delay it for a year to do additional studies there to collect more wildlife data. I am currently a president of a new group called Central Cascade Alliance. We just incorporated a few weeks ago, and in general we strive to find workable solutions to environmental problems. Obviously with the wind power facility here there is certainly a bigger environmental

picture, and I understand that the need to put this facility in a greater contact zone certainly --

MS. TANGORA: One thing, to make sure which project you are commenting to.

MR. LETTO: Both projects. I may have some specific comments. If I do, I will bring it up, but it is for both projects.

Anyway, there is other folks here from regional environmental groups that will talk about the bigger picture with energy environmental concerns there. I believe that there is workable solutions here if the County, BPA and the other responsible officials assume a very active role. The County has an opportunity to take a real leadership position by asserting itself as a responsible official that has seen that if wind power is developed, only slowly and carefully with thorough monitoring, wildlife impacts and mitigation. I will go into more details about that in a minute. I feel it is the County's responsibility to not allow us to be treated like second class citizens. Let me explain what I mean here. I am going to read a couple things from a Boston Globe article that is dated January 2nd of this year in regards to a facility that KENETECH is

21

developing out in Maine.

A KENETECH review of promising sites in the northeast turned up several that didn't materialize and the Burkshires and Cape Cod and Hamptons region of Long Island. Quote, they're all impossible end, quote, says KENETECH vice president Hap Ellis. Knowing that all three regions are both scenic and homes to powerful people. Quote, I can see it now. Billy Joel and Christie Brinkley leading some kind of protest concern against windmills, end of quote. 21

The point here I guess is why in Klickitat County but not in the Burkshires, Cape Cod and Hamptons. Not because they have high bird or raptor numbers like we do here, not because of their important potential migratory route, not because hey have wide open underdeveloped lands that is essential for wildlife like we have here. No, the reason is because these areas have political clout and the wind power interests believe that we don't. There is another aspect to this, that is the concessions gives to other places that have wind power proposals. They far exceed anything that KENETECH and CARES have offered here, both in mitigation, monitoring and the like and in 22

agreed upon limits to growth in the near term.

Again, let me refer to this Boston Globe article. The company will spend much more to honor an agreement with environmental groups that exceeds a $300,000 contribution land preservation in western Maine as well as $50,000 for the cost of a statewide study on appropriate sites for wind farms. This is at a site where the Maine Audibon Society says they don't expect bird deaths to be a major issue. Here everyone admits there will be significant bird deaths, or at least bird deaths, whatever the issue is. Reading again, KENETECH has sought to win over critics by offering to scale back the first phase of the wind farm to 100 turbines. We have received no such offer here, though I and others have been working hard to secure one.

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I would like to give some quick general comments. This pertains to both facilities. Regarding wind power development and the Gorge, our group's main concern focuses on impacts of wildlife, in particular raptors and other species and the western gray squirrel. We don't want to necessarily kill all wind power proposals. We just want to see that any development does not

23

negatively impact wildlife populations in our region.

The proposed KENETECH site proposes some serious concern, particular species including the peregrine falcons to the bald eagle, which is now known to regularly fly through the eastern end of the site and route between roosts. And understand this has just been confirmed, actually has a roost on the eastern end of the site. A golden eagle and several other raptor species which nest on or near the site and western gray squirrel, a state western species, found in the habitat on the site. 23

While it may be impossible to tell beforehand whether wind power development of this 14-mile long site will adversely affect the above and other wildlife population, our group seeks assurances from KENETECH and/or Klickitat County and CARES that each development will be kept relatively small, small being perhaps 150 turbines or preferably smaller. 24

In the near term, the near term being at least two years, during this time we urge KENETECH and Klickitat County to monitor bird kills and generally continue to collect data on the site in an effort to determine whether or not wildlife populations are being impacted. If it is, 25

then we would want to halt further development. 25

I have a bunch of specific comments, but I think I will just submit them in writing. Many of them Bill gave here already tonight. I guess let me get to a main point here, that is that the wind is not going to go away. Making the developers go slow and carefully will not scare them off to other areas. The wind is here. And also, all predictions say that wind power is going to be expanded greatly in the near future. The U.S. Department of Energy predicts wind power will expand by 600 percent over the next 15 years. 26 Something also from the Boston Globe, a piece I will read quick. The world is on the verge of a wind energy boom, says Christopher Flavin, co-author of Power Surge Guide to the Energy Revolution. Worldwide a record 600 megawatts of wind power was harnessed last year, enough to power 250,000 households and KENETECH has proposed 1,800 megawatts in this country alone.

The point here again is that they are not going to go away. If the County or BPA puts in some strict language in the conditional use permit to some specific things, I will give them a second. A couple reasons to go slowly, certainly

to allow technological fixes to be developed, some are in the works now, and fix to allow the birds to better see the turbines so they are able to avoid them. KENETECH to their credit is working hard on trying to find some fixes, and I would be greatly interested to hear someone from the company perhaps give us a couple minutes to update us on where they are in those technological fixes. 26 27

I also ran across something in the Upry (phonetic) Journal, which is the magazine on the Electric Power Research Institute. It is their current issue. I will just read a couple sentences. Upry sponsored researchers have developed technology to help prevent birds from flying into structures that can injure or kill them. The device, which sends a pattern of radio frequency signals which is inperceptible to human beings, has been tested successfully in the laboratory. Now the researchers are preparing tests in the fields. This was done at the University of Pittsburgh and Upry applied for a patent. Obviously commercialization of this technology is some time away. But the point here is that if we proceed slowly, we are likely to get less harmful turbines in our county. Another 28

reason to go slowly is to allow continued monitoring of bird kills and impacts to the wildlife populations after a limited amount of turbines are in place. I mean, honestly there are going to be bird kills, but if we would have a small scaled facility that we could determine how excessive the kills will be prior to building a new facility that could desolate rapid populations. 29

Finally, another reason it would be to give time to develop a cumulative impact study for the whole of the Gorge. This would be a large comprehensive study undertaken regarding avian species with the idea being that there is going to be more wind power proposals coming into our area beyond Klickitat County. And to allow this would probably be wildlife officials in conjunction with wind power companies to continue testing or studying the whole area for migration patterns, nesting and roosting sites and even projections of likely impacts of the increased turbine power. It could also determine sites that should be off limits because of high raptor activity and sites that would be a good area for wind power because there are low raptor numbers there. 30

I the County should urge that this be

undertaken before the second phase is allowed to be built at the KENETECH facility. And finally, one last little clip here. This is from the Bangor Daily News last November 21st. A man named Steven Wright who was chairman of the Maine Land Use Regulation Commission, the Commission is the entity charged with making the decision on the Maine Windplant being proposed there. He said that, I will quote him, I would personally be more comfortable with a small demonstration of the technology prior to the start of a large-scaled project. They haven't made their decision there either I guess, but in essence this is what I urge Klickitat County to do as well. If the Washington Department of Fish and Wildlife and the U.S. Fish and Wildlife Service indicates -- they certainly have indicated concerns of the raptor activities. If they determine the site is a unique raptor area and any number of turbines would harm populations, then the County should not approve the facility. But if the facility is approved, I would urge the County to use very strong and specific language in the conditional use permits. I will outline three points: One, that the facility be kept small scaled in the near term, these are arbitrary

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numbers, but 150 turbines maximum for at least two years. Two, that money be provided to adequately monitor bird kills and impacts to populations during this time and an independent assessment be made to determine if populations are being harmed. And three, this is a tough one, that further development be put on hold indefinitely if it is then determined that there are bird problems at the sites. 32 33 34

Again, this is an opportunity for Klickitat County to assume a leadership role on this issue. And without some kind of stringent requirements of this nature, Central Cascade Alliance will likely oppose the projects outright in joint efforts to defeat them. Thanks.

MS. TANGORA: Our next speaker is Peter West.

MR. WEST: My name is Peter West. I am from the Renewable Northwest Project, 1130 Southwest Morrison, Portland, 97208. The Renewable Northwest Project is a coalition of renewable energy developers, wind geothermal, solar energy companies, consumer protection groups and environmental organizations. Our purpose is to promote clean, safe alternatives to the traditional

polluting ways of generating electricity using fossil fuels.

We are going to talk about both projects and generally we can provide specific written comments later by the deadline. I want to speak today in support of the development of these wind projects. Let's put something in context here, how we view it. All around the region utilities are rushing gas fired combustion turbines, and in this area alone, I count from Portland, Vancouver out to Hermiston, Walla Walla, there is over 800 megawatts of gas turbines already near completion or with active permits about to be started. I totaled out before I came, all the gas projects that have been applied or all the gas projects that have applied for permits, I have enough there for three Seattles in this region. That's what we are directly competing with when we are talking about these wind projects. If these not these wind projects, it is going to be gas projects, and we are going to have these gas projects or coal projects for 20 years. Let's keep in mind that in this country 71 percent of all sulfur from all sources for all reasons that's admitted in the air is from electric utilities. Thirty-three percent of all nitrogen

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oxides are admitted by electric utilities, and those are the two things that are the number one sources of acid rain. Acid rain alone costs this country over one hundred billion dollars a year. Health effects from sulfur cost this country over twenty-five billion dollars a year. That's from just health from people going into hospitals, what they've added up. Thirty-six percent of all the CO2 admitted in this country are from all sources of electric utilities. Eighteen percent of all the methane, and natural gas is methane, it is from electric utilities. That's the alternative, that's the context that I want to talk about in terms of this wind, and these projects can displace that. If I was to add up just the first phase of both the KENETECH and the CARES projects, and these are annual numbers, there is over 400,000 tons of CO2 that wouldn't be admitted if the first phase of these projects go through. That's tons per year. That's over 3,200 tons of CO2 annually that wouldn't be admitted, and over 1,500 tons of nitric oxide and acid rain, and over a 1,000 tons of methane that wouldn't be admitted. These projects I think are part of the maximum globally and locally. I think they are part of the solution.

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These projects also go a long way for fulfilling the mandates of the 1980 Regional Power Act, and they follow the guidance of the power planning council directors to promote the development or conservation of renewable energy resources of the Pacific Northwest. Again, the council took a look at all of this, took a look at what the region needed and following the dictates of the 1980 act where people stood up and took control of the power system away from folks like who were running it for their own nuclear benefit, like WWPPSS. These are following those dictates, and I think we need to look at it as a regional solution. These are part of a regional and part of a global solution. 36

The other thing is these projects help establish an industry and provide a viable alternative to the traditional ways of polluting. Like I said, there is at least 800 megawatts in the several hundred miles to the left and right of us, east and west. There is at least three Seattles worth on the drawing board. If when you get those, you have got those for at least 20 years. So remember those annual numbers I am talking about, just keep on adding them up. 37

Not to minimize the avian issue at all, let's

keep this in context. Bird mortalities are an issue in the electric utility industry worldwide. There is over a million birds per year that are killed and electricuted, just destroyed by traditional ways of generating electricity. Over 500,000 birds are killed a year just in the oil sediment ponds attached to generating electricity in the major plants. You have got hundreds of thousands of bird habitat destroyed by acid rain each year. And you will have to keep in mind that according to the Department of Energy, the number one source of air admissions of radiation isn't nuclear power. It is the coal industry, from burning coal. I think these projects have another benefit aside from the clean air and the global, they provide the global benefits. They provide economic development. This is an indigenous resource using materials from Washington, turbines in some cases from Washington, labor from Washington, bought by regional customers and used by regional customers. If we go to gas, over two thirds of what you spend on electricity from gas projects is for the gas itself, and that comes from Canada, that's two thirds. You know 67 cents of each dollar you spend on electricity for those is

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going out to Canada. It is a great benefit for Canada. It is not a great benefit for you locally. I think without these projects we are not going to have the first steps. It is a fledgling industry. It needs to get going. I think we have a real competitive threat in gas, a global warming issue with gas. We have to step up to it. I would urge the County to approve these projects. It will help this industry get going. It will help us fulfill the mandates of the power act. It has been 14 years since we got that through Congress, and these are the first renewable projects we are really getting on top, and I would like to see it get a good first step. Thank you. 39

MS. TANGORA: The next speaker is Chuck Barker.

MR. BARKER: My name is Chuck Barker, P.O. Box 572, Moser, Oregon, 97040.

First, I would like to ask how many people in here are in favor of wind power. Can we have a show of hands. Can I have a show of hands for people who are in favor of killing eagles and falcons. I would like to go on the record as a few went up in favor and none went up for killing.

I think we are moving ahead way too fast. My

comments are on both projects. We are moving way too fast. This is hardly a fledgling industry. They have been in full swing in California for 15 or more years now. They started out down there. That's why you are seeing all the bird problems come here because California is a technology center. They gave them open space to see them do what they needed to do, and now they are up here to settle the problems they are having worldwide, the bird kills in Gibraltar, Altamont, several places in California besides the Altamont. They are looking to have a study area here. They can probably learn how to stop the big kills anyway with some kind of detector or sound wave. They are working on it. There is all kinds of things going on. 40

The point is, why do we have to be the study area for this kind of research. When that stuff is brought on line, bring it here, try it out. If it keeps bird out of the turbines, then we are probably more than willing to have it here, why not. Even though the power will probably be going to Las Vegas or someplace, and we will all see the bright lights on TV that it is creating. You are not going to see much here. We have all the killer

dams we need right here right now. All the power is flowing off of them. This isn't to take out any dams or do anything like that, this is just to build the grid up for future homes or gambling casinos or what have you. There is plenty of scare tactics going on about gas fired and coal fired. But if the people show up against the gas and the coal fired, chances are that won't happen either until they get it squared away. We are stuck with these dams. They are not going to come out. We have got the power we need. We don't need to be the technology guinea pig. Thank you. 40

MS. TANGORA: The next speaker is Sally Shulinger.

MS. SCHILLING: My name is Sally Shulinger, and I am representing Greenpeace from the Seattle office, 4649 Sunnyside Avenue North, Seattle, Washington, 98103.

I am also going to keep my comments fairly general. We will be submitting written testimony by the deadline, and I am speaking in general for both projects, more specifically to the KENETECH EIS. And I am work specifically on energy issues in the Northwest, and what that means is that we are incredibly supportive of renewable energy in 41

the Northwest for a number of reasons. First that their implementation will prevent the further build-up of gas emissions and any of the climatic change. And secondly, this means moving away from the cumulative sustained damage that is caused by fossil fuels, nuclear power, our hydroelectric system, and all the impacts that are associated with these types of electrical generation.

Right now we have a window of opportunity in the Northwest to start implementing renewable technology, and we are at a crossroads right now. We have two directions we can head in. We can go in the direction of cheap natural gas, which is still a fossil fuel, and increase our reliance on fossil fuels. And to kind of put this in a more overall perspective, over the next 20 years in the U.S. alone over 200,000 megawatts of new electric capacity is being planned, and only under five percent of that is renewable technology. The rest is coal, natural gas and even here and there nuclear power is being proposed as well, even though that is kind of hard to believe. But basically what this brings me to is that we do need to prove that renewables are viable commercially and they are economically competitive, and what

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that means locally here is that these projects have the potentitial to demonstrate that wind power is a viable solution and it can be one of the sources as part of the Northwest Resource portfolio. 41

Specifically we really want to be able to say that in terms of all the specific site impacts that are related to these projects, it can be mitigated that both KENETECH and CARES have fulfilled their obligations in terms of trying to address revegetation, road building, landscape, and I think technically in their EIS I think they have addressed a number of these issues. But overall there are still two areas of concern that we feel need to be resolved in a responsible manner and these pertain directly to actual siting criteria. In terms of one, the cultural and traditional use of the site by the Yakama Nation and the possibility of burial grounds on site. That's something that was kind of skimmed over but no actual resolution has been come to. 42 43

Secondly as well, the location of the wind farms near migratory corridors and crossroads as well as nesting and breeding grounds for special status birds that are protected under legislation such as the endangered species act. It is really 44

not clear right now that an adequate study has been performed. We are also very concerned about that. 44

I do want to reiterate we want to see these projects succeed, and we want to see these projects be a stepping ground for future projects, and we want to see them pave the way and not undermine new renewable projects in the Northwest, but certainly not at the expense of basic environmental principle, but many people have fought for a very, very long time, and I will be submitting more detailed comments later. Thank you. 45

MS. TANGORA: The next speaker is George Rohrbacher. My name is George Rohrbacher, 1440 Horseshoe Bend Road, Centerville. My wife and I own a cattle ranch, have for about 18 years. These comments will be about both projects.

One thing that I was not able to ascertain from either one of the EISs is a question of how many bird kills is too many, what is an acceptable level. One thing we should keep in mind when we are talking about these projects is that both of these projects are right on the edge of the Columbia Gorge National Scenic area, which we have essentially an 85-mile corridor to the west that will be very difficult to side either one of these 46 47

projects in which has been designated, reserved for scenic, natural, cultural and recreational resources.

My comments really revolve around several issues. I had the opportunity to visit the KENETECH site in California -- well, the Altamont Pass site and KENETECH projects there. I also looked at some of the other wind projects while we were down there. One thing that I noticed with the style of towers that were used, and the day we were there was a no wind day. We went up to the top of the mountain, and I noticed on a tower several hundred yards away there was a red tail hawk perched in the tower. Observing hawks on my farm continually, in open country they like to use anything that's available so they don't have to fly around when they are searching for food. They will perch on a site if it is available. I have noticed that the KENETECH design of the towers has eliminated the possibility, except for actually perching on the very top of the tower, of providing a bird a safe place to perch, until of course when the turbine is moving and turns into a Cuisinart. I think that kind of design technology should be part of the CARES project as well, simply because once a bird

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sees a tower as a dead tree and a safe place to perch, 95 percent of the time when the turbine is moving too fast, that it becomes dangerous. Well then it is too late. I have seen several comments, and I guess this is written comments of some of the environmental groups about poison and squirrels and it would be a very easy thing to avoid if you live trap them. It would provide a few jobs, and I am sure there are quite a few kids in Klickitat County that would like to live trap a few squirrels and move them someplace a little more environmentally nonsensitive. I know I have got one kid that would love the job doing that. 48 49

One of the problems with all of these sites that's already been stated is the disturbance of the ground to create the roads. One of the problems that we have in the Gorge and all of the United States are not just weed problems. They need to be very carefully monitored and addressed, and one of the things that I would like to see in the construction of these roads is that there be a protocol of bringing the equipment that comes in to create those roads to make sure that they don't carry noxious weeds, seeds, pieces of the roots of morning glory or pieces of any one of a dozen 50

noxious weeds onto the site and that a very careful monitoring and control program of noxious weeds be undertaken from the very first day of the projects. I have a few other comments here. I will submit some additional comments before the end of the comment period, but I think that these projects are worthwhile and need to be done, but they need to be done right, and the comments I have already heard about continued wildlife and bird monitoring is an absolute necessity. 50 51

MS. TANGORA: James LaFevre.

MR. LAFEVRE: I am James LaFevre. I have lived here in this area quite a long time, as you might guess, and I have always felt that one of my goals in life, I would like to leave our area or my area that I have control over a little better, if possible, than it was when I came here. I refer to both projects. They seem to be very careful examining all the various things that might create hazards or bad effects in our area. They have tried. They are working on it, and I have been convinced that it is about all that they can do, and George said something about what is an acceptable amount of bird kills. There is going to be birds killed of course, but the world must go on

some way or another. So I would just go on the record as liking to have this, accepting this project to go on with careful supervision. 52

MS. TANGORA: Dennis White.

MR. WHITE: My name is Dennis White. I live at 367 Oak Ridge Road, White Salmon, Washington, 98672. I am here to represent the Columbia Gorge Audibon Society. I want to make it clear the Columbia Gorge Audibon Society supports the development of alternative and new energy sources. Make no mistake about that. With that being said, here is part of the rest of the story. 53

Shame on you KENETECH, CARES and BPA for proposing to destroy the beauty of the Columbia Hills and their cultural and biological resources. You could have picked from hundreds of thousands of acres in the Northwest where the wind blows no less predictively, where thousands of megawatts wait to be tapped, where the land has already been thoroughly transformed. But no, you have chosen to erect your endless string of steel towers on landscape where falcons and eagles still soar and a place native people hold in high regard for collection of traditional foods and calling to the spirits, a place where locals and travelers alike 54

look out across the beautiful serene land. This project will kill birds and is being advanced into full knowledge that birds protected in the Migratory Treaty Act or Golden Eagle Protection Act and Endangered Species Act will be reduced to shredded corpses. This is a criminal act, no more, no less, and you should be prosecuted now for premeditatively violating federal laws. Let me give you a warning. If this project goes forward, our eagles and falcons will die, and we will be there every time sending the dead birds as evidence to the Attorney General to make sure that you will be prosecuted. You cannot mitigate away the law. You cannot mitigate the laws KENETECH, CARES and BPA. You will face the music. These birds of prey belong to all of us and are not just objects in the way of your profits. You may escape from public scrutiny, but remember illegally obtained evidence can now be used against you. Fourteen thousand acres will be difficult to control. This project is built as a demonstration for the assumed Northwest Development of Renewable Alternative Energy Resources which will lead us to the promised land. Out of nukes, coal, gas and dams, some of the renewable alternatives fraternities have worked

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so hard under the alternatives, they have become pathetic lap dogs.

The Northwest energy picture is most likely to be an open ended free dealing affair, first on time, first on line. This wind power will be in addition to not replacing the power, which dam in the Columbia do we get to tear down to save our salmon runs. The industry wants it all. These are not choices. When do we learn our lesson. The only facilities we would tear down are ones we fight like hell to tear down. We are being asked to give up the eastern Gorge landscape on the hope of an alternative energy renaissance. Not on your life will we fall into this trap. 56

The project site involves 22 special status bird species including threatening endangered falcons and eagles, twelve special status nonaviant species, critical habitat for the western gray squirrel, rare, unique, diminishing and numerous game species. Even with this permittable biological line-up, some environmental communities are playing down the area's biological significance. We wonder with baited breath what proclamations will come from the Washington Department of Wildlife and the U.S. Fish and 57

Wildlife Service. Will they be professional and resist pressures from this industry in response, or will they so often as before turn their heads and allow another 15,000 acres of Washington habitat to be moved. Thank you. 57

MS. TANGORA: Eugene Lowesly.

MR. LOWESLY: My name is Eugene Lowesly. I am with Northwest Environmental Advocates. We are an environmental group based in Portland, Oregon. It is probably appropriate that I go after Dennis. It is the first time I have ever been called a lap dog.

As to where I was in not commenting on the wind power plan, first of all, nobody called me and told me about the meeting. Otherwise I would have been more than happy to go. Maybe it is because I have been busy see fighting the 800 megawatt gas plant they want to put up near Spokane. I have been busy fighting the gas plant they want to up in Satsop instead of WWPPSS. I have been busy fighting the gas plant they want to put in Chehalis. I have been busy fighting the gas plant they want to put in Clark County. So I have been pretty busy, and I am still willing to come and help when I can. But I am also willing to come and

speak out in support of what I think is a good project. Yes to your question about the way the EIS is done. They way I see it, this is a draft, an environmental impact statement draft. When I give my director a draft document he usually marks the hell out of it and takes it back and rewrites the questions that she has. That's the way the process works, and I hope we keep in mind that there is a process at work here. And the process is that KENETECH and CARES goes out, they do their work and present it to us in this draft EIS. We call, get a chance to comment and look at it, and the final EIS comes out, and then we get a chance again to have another look at it and to work with these people and to make sure that the problems that we raise and the concerns that we raise are addressed. I think KENETECH -- and I am not that familiar about CARES, but I am familiar with KENETECH. I think the fact that they have done a lot -- the one wind company that I can tell that's been doing all the bird research in this country and probably in the world has been KENETECH. They changed the design of the turbine towers to accommodate to make sure there weren't more bird kills and cut down on the bird kills. They have

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done a number of other things in Spain. They paid to move the landfill away from the birds so the birds aren't going to the landfill. I think they have shown a willingness to address issues and work with environmental groups, as Jay Letto pointed out in his talk about what they have done in Maine. I am sure they would be more than willing to sit down with people here and to work out something that's acceptable to all of us. We all have a stake in this, and that's the bottom line. We all have a stake. And I think one gentleman raised a good point, how many bird kills are too many.

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I went out to visit the site and I asked somebody in seeing the wires, the high tension wires, I said, who keeps track of the birds killed on the high tension wires. The answer was nobody keeps track of them. So all of a sudden now we are concerned about birds. Yet nobody keeps track of the birds killed by high tension wires. I don't understand that. Hopefully again we will come to some understanding about what is acceptable and what's not acceptable. That's going to be difficult. For some people it is going to be none, for a lot of people it is going to be a lot. One thing I would say, I think the number of bird kills

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in the EIS is too high. The six to 20 is too high. It is based on what is happening in California. The California site is different, an entirely different site from here. The site here has fewer birds. They will have less turbines, different turbines. It is completely different. And how you can take numbers of what is happening in California and transpose it on this site, I don't know how you can do that. Everything we do we are going to have an impact. One thing I would like to see the EIS address is if we don't build this wind plant, what is the alternative, in terms of building or not building. If we don't build it, what are we going to have instead. We are going to kill more fish at the dams. That's the trade-offs, and there are trade-offs that we have to address. I think again is sort of the phasing of the project is a good idea. There needs to be monitoring, continued monitoring of both the CARES project and the KENETECH project. I think together if we sit down and put our heads together that we can make this project work, and we can make it environmentally acceptable to just everybody.

Now, there are going to be some people that are never happy with anything, and I can't help

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that and neither can anyone else. We just have to move on because, yeah, I will come here. But, you know, Dennis, you want to bring your truck to Portland, I live in Portland and you pollute my air, and I don't necessarily appreciate it. So keep your truck out of Portland. I mean, where are you going to draw the line?

MS. TANGORA: The next speaker is Chief Johnny Jackson.

CHIEF JACKSON: I came here too on sort of short notice. And I could look around and my elders aren't here nor is none of my counselmen from the Yakama Nation, but I feel that this is very important to my people also. You know all this area along here as far down as you can look down the Cascade area on up to the Palouse is important to my people. I am here for that reason because. I have heard of this as short notice. My elders aren't here. I am going to be here to speak against this issue because I have seen many projects come to this part of the country. I have seen my wildlife or deer and our fish and our birds become extinct. We are losing them. I was born in Klickitat, up 18 miles from Klickitat. My grandfather was a chief then, and I grew up there

and I knew what the rivers looked like. We used to drink out of the rivers, and I used to look at all the little birds that lived along that river and all the animals, as well as the frogs. We could go down and hear them singing all night long. But I could go along the same river now and I could hear total silence, and I could look around during the day at the little birds that I see that go into the water to eat and live along the river. There are very, very few, and I am concerned because what we are talking about here and what a lot of you are talking about here don't have much meaning only as a bird to you. But to me and my people and to all the Indian people in this country is very sacred, and it is a part of what they use in their religion, their belief. And when I see a threat brought to this, which we have seen in the past years, have disappeared for a while and now they are coming back. Now that they are back, all of a sudden KENETECH comes up with the idea of building numerous wind power machines, and how are they going to tell us that these birds are going to be safe. When you go along that Columbia River where the wind is in the wintertime when the wind is blowing, you will see the golden eagle and the bald

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eagle soaring up and down that river because he is fishing. He fishes just like we do. That's his food, and he lives off of it. It bothers me very much because the other day I was hurt pretty bad, because the past year I have listened to the news and watched the news how one man from Oregon was a relative of mine was prosecuted and highly publicized for killing an eagle for religious use. But you never hear any news about what KENETECH and some of these other projects. Are they ever prosecuted? Are they ever cited for it? I don't think so. But this man young man ended it all because he was tired of listening to what was said about him. 63

When are we going to stop and realize and think of what's important to this environment and this country. One time it was beautiful, but what's it going to come to in the future. You know, every day as a chief I think about my people. There is four of us Columbia River chiefs, and we are concerned about our people, and we are concerned about the children. We are also concerned about our elders because our food is out there. They don't care about that beef. They don't care about that pork. They don't care about

a lot of other food. They got their own food out there, and they out there together. Right now if this goes in, they are going to be concerned about the soil that their food grows in, our food, our native food.

So you people don't use it. It is meaningless to you. If you knew what it was, you would probably be beating us to it. But that's some of the things that's important to us people, and I don't see what's going to ever satisfy anybody. It is only going to satisfy people that are going to make money off of these projects. Look how many dams they have put in when they only told my chiefs when I was a little kid, like that little kid right there, they told my chiefs that only one dam, but there was a war come on and all the sudden there was dams all the way up the river. Nobody is going to tell us what's behind each one of those dams, but we have kids playing in them every year when it gets hot. I worry about that because I caught fish that didn't even get to the laboratories because someone threw them away because I wanted to find out what was wrong with them fish. This is what happens when big projects come in here. This is what happens when our people have to see what once

was theirs and plentiful is being eroded away.

I am not only concerned about my people and their kids, I am concerned about other people because they live in our area. They are here, but we are not making the land, we are not making the world any better for them, and we are not leaving them in it. A lot of the things I have seen when I was a kid, like that kid right there, and know that I know the kids in the future are never going to see anymore. The only place they are going to see them is in books and pictures. I am very disturbed because I have been hurt for two days for what I have had to witness and see what young one man do, and we are talking about them eagles. Well, what's an eagle? What's a bird? What's a falcon? At one time we used to see falcons in numbers along this whole ridge here. We don't see that anymore. We see very few. A lot of our birds are disappearing. A lot of them can make a lot of noise about them. But to some people it is just a bird. What's a bird when you can make a lot of money out of power, and where does that power go. It is not really utilized here a lot. It is the other states like California. I think that we have done enough to our country here and our area when

we put them dams in. What is our children going to live in when somebody comes along with a bright idea to build more when he is getting electricity from them dams. He is still got to build gas turbines to make money for himself. He is not making enough for the community. It is only to line his own pockets, but the children and the future will have to pay.

I never really got to look too much at this, but I am very, very disturbed. I was on the phone all morning to my tribal counsel from the Yakama Nation. I was wondering why my elders that live here. They had a beautiful home down by the river where they lived. They were moved out of there. They were happy there. They were content there. There is eagles in that area too and a lot of deer, but now they can only go down there for a feast. They can't live there anymore because the dam had to be built and a lot of our sacred grounds are underneath that dam. But still, that's not enough. It's the new people that come to this part of the country that want to build, build so much along that river they want to make another Riviera, but they don't know what they are doing to the water and what it is going to be like in a few

years. We are only going to have a river that's going to be looked at. It is going to be so damn polluted that no one is going to want to do anything with it, and that's sick.

You know, us people here believe in them mountains and believe in all this land here, and that's important to us. We are taught that when we were kids, like that little kid there, I grew up that way, but it is hard to teach people that don't understand. I don't really care I lived without it this long, and I am just as well off. I am just proud. But some people, they never get enough, and they will hurt any land or any species or any stream or anything that grows to get that mighty dollar. Where will it end? What will your future children have? I am not only talking about my children. I am talking about you people's children too. What are you going to have for them? You aren't going to have nothing. You are going to use it all up and destroy it. All you are going to have is pictures and stories to tell.

I feel sorry for this whole issue. It is sad. I don't know what to think because my elders never knew about this. They are concerned about that land because they go out there, they use

that. Some of the last places they that they can use, when that's gone they don't have anymore. They are not going to be happy with your beef and pork and potatoes. They have got their own foods and they enjoy it. I am speaking on both projects. Thank you.

MS. TANGORA: Terry Walker.

MR. WALKER: I am Terry Walker. My address is 501 South Zinzer Street, Kennewick, Washington. I am here in favor of alternative energy resources, but I have a lot of concerns. I have talked to a lot of the local people here to find out their concerns, and I have talked to just about everyone involved with this Draft EIS process. I have talked to many of the people here and called and talked to them because of my concerns. That map over there is a little bit deceiving because it doesn't show the CARES project. That's strictly the KENETECH project on that.

I own just a small 15-acre chunk of land right up against Columbia Aluminum Plant. And as a matter of fact, this section right here I am surrounded on three sides by the KENETECH project and the CARES project to the south. I have a lot

of concerns. I spent six hours up there today, and there are a lot of birds and prey up there. I happened to see two red tail hawks. Apparently they are nesting up in that area. But where I am at yet they never show up on the EIS for either company, especially for the CARES. That concerns me. 64

I am going to address my comments to the CARES project. I don't know much about the KENETECH project other than what's in my immediate vicinity. But I am very much concerned about the CARES project because turbine rows A, B, and C are within a half a mile of my land. Turbine row B, where they are siting their northern most turbine is 150 feet to my land. And according to the Draft EIS, noise levels for residentially platted land can be exceeded and that very much concerns me. I have asked if it could possibly be moved away. In order to stay half a mile away, they would have to eliminate 33 of their 91 turbines on that project, and so I have a lot of concerns about that. 65

My son and I conducted a test. I walked up to where they will be siting turbines in the northern end of Row B, and I walked up there and I had my son stay down on our place in the corner and I

clapped my hands and he was able to hear me. That really concerns me for the simple fact that the noise levels up there -- Everyone thinks that noise levels would be absorbed up there, and it is not. I talked in a normal outside voice and he was able to tell me exactly what I said. The wind primarily blows from the west. KENETECH assured me that I would not be able to hear the turbines. That's why I am not really addressing that too much because they have kept those a half mile away either. Yet in November, December, January, and in February and March when I was up there on my place, each one of those times up there the wind was blowing from the east or southeast. I be receiving the noise from turbine Row B and C. Those are the ones that are sited, like I say, very closely to mine. All three turbine rows A, B and C are within a 100 feet. Actually C ends up being a quarter of a mile, and I would really like people to consider this. I don't feel that the EIS, that studies have been done long enough. I look at the CARES project and they don't even show any red tail hawks. I have also stumbled upon some owls up there, and one was a large owl, and it came out of the brush and scared me because it was so sudden. These are all right on or near

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my place. If fact, today a red tail hawk took off from a tree on my place and went up and flew on the area turbine rows A, B and C. For those of you that don't know, those are the western three rows on that map up there to the left.

And so as I look at this, I say, Well, if nobody spotted those, and I was only up there for six hours today and I watched them for at least 20 to 30 minutes soar out over the ridge and come back and settle down in a tree, and take off back over the ridge and come back and settle out on a tree on my place and flew off to the north and came back. So with others I must say that we need to look at the studies. The last several years there has been a drought. I wonder if we have a normal year how that will affect the wildlife up in this area.

I have had the opportunity to -- In December I walked on Columbia Aluminum's land and I counted 22 deer in one bunch up there running along the ridge. That really concerns me. I take my Boy Scouts up there. I love to take my Boy Scouts up there to do their nature studies and their merit badge studies, and I just feel that so many things are incomplete. I am really concerned about the noise issue, especially when I am so close. I

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would urge them to really take a look. I look at the CARES flow wind design of the turbine and usual guide wire towers. Yet KENETECH says in their mitigation measures they are not going to use guide wires to prevent collision with birds, and yet the flow wind design turbine is going to use guide wires. I say, how can you justify in one Draft EIS say we are not going to use the wires and prevent bird collision, and in the other EIS, we are going to use the wires. It says in there that they realize there is going to be some bird collision with it. I understand as many people have said, yes, I can see all sides of the issue on this. I look at the LaFevres and Lindens and Hawkins and all those who are going to get money for this. I can understand. They have got land that appears to me and others that appears to be unproductive. This is a way to get some income from that land. I was talking to Cal about this. It must have been a year and a half or two years ago we discussed it for about an hour and he made me realize some of the things from his point of view. I can understand what people say about the bird kills. I don't understand, though, how you are going to count the bird kills. The coyotes clean everything

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up up there. I have had the coyotes when I have camped up there come within 100 feet of my fire to see what in the world was going on. I could see their tracks in the snow while I was camping up there. Anything that dies up there the coyotes clean up. I don't know how you are going to keep track of bird kills. Am I concerned? Yes, I am. I hate to see things like that. I don't want to stand in the way of progress. 71

I happen to work at one of these hydroelectric dams for the Army Corps of Engineers up on the Snake River. Yes, we have some serious problems. Yes, they do shut the turbines down during the peek run of the salmon to get them through as they are making millions of dollars of improvements right now to try and get the salmon through. Yet, I am not even sure that's going to work. People ask, Well, how do you feel about the dam. I have turned on the Corps of Engineers several times and gotten in trouble for it for them breaking rules on dumping oil in the rivers. I was told, We are essentially talking about your job here, and I said, We are talking about polluting the river when you dump 5,000 gallons of oil into the Snake River. Yet I am still working for them and they

did go back and fix the turbine leaks and prevent the oil leaks. So things can be fixed. There are mitigation factors here.

I am not sure everyone has the answers here. I am not sure there are answers. But yes, I do want to see the land stay as it is. Yes, I can also see where we need alternative energy resources. I work at a place that's killing salmon. Every morning I drive down the dam, I look and say what an ugly site that thing is, that big chunk of concrete with a power house, and yet we all want power too. So where do we draw the line? I don't know. I don't have an answer. I would like to see more studies done, especially in the CARES project. I would to be insured that the turbine issue would not be a problem for me. I have to listen to turbine noise every day, 40 hours a week, and I come up here to get away from that type of noise. Yet as I looked in the EIS, both the cumulative noise impacts, from the CARES project itself, the noise levels are very close, within one decibel or in some cases can be exceeded. 72

I talked to Greg Peremba and he put me in touch with the individual who was doing computer

modeling for the noise. He did not actually go up there and sound test. They just put all the information in his computer. I talked to the guy for about half and hour and he was explaining to me the computer modeling process. And I said, Well, that's all fine and good, but what the about swales and wind direction. He says he tried to take that into account too. I said what about the trees. The tallest trees on my place are maybe 75 feet tall. These things are 140 feet in the air. So I said, What about those noise levels. He said it is pretty hard to judge what is going to happen because of the swales, echoes and the way your voice bounces around up there. I said, Yes, I understand that. I said, How has this worked out for you in the past on previous studies. I said, What happened when you went back and actually tested the noise levels as compared to your computer model. And he says, Well, we have never done that. Nobody has asked us to. I said, Well, how do you know your computer model works for the noise. He said, Well, nobody has complained. And it is kind of late to complain once the factory is built next to your house. It is kind of tough to complain and say it is too noisy when you didn't

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say something before they built it. That's what I am trying to say now. 72

When the decision is made, we really need to look these projects over, especially this CARES project because it is right along the ridge. KENETECH has tried to move theirs down off the skyline along the ridge, but there are a lot of things that really need to be taken a look at, and I do have five or six pages of things that I would like to submit and have answered. That's all I have.

MS. TANGORA: Jo Barker.

MS. BARKER: My name is Jo Barker. I reside at P.O. Box 572, Moser, Oregon, 97040. I am going to speak about both projects.

We must not forget the valuable lesson right before our eyes of the hydropower dams on the Columbia River. Their turbines have been constructed to kill migrating juvenile salmon as well as the adults returning to spawn in the home tributory. Salmon are affected by the dams in almost every phase of their lives. These dams have already completed to near or complete the extinction the menagerious fish runs of the mighty Columbia. There is no mitigation possible for the

extinction of salmon or of any species. Forty to sixty years ago biologists believed that the dams would lead to the extinction of one of the greatest menagerious fisheries in the world. Now, similarly, several companies are proposing to build wind power turbines that kill birds, particularly the raptors in the east Gorge.

The industry collectively controls more than 15,000 acres there where they want to construct some 900 wind turbines with more undoubtedly to be added later. More wind farms are being proposed for Umatilla, Oregon and Walla Walla, Washington. There could be eventually turbine strings extending 140 miles from Goldendale to Walla Walla.

I ask this audience tonight to tell me what number of bird strikes would be acceptable. It is a difficult question, no doubt. A similar question was posed at a meeting called by the California Energy Commission in late 1992. A special agent with the Fish and Wildlife Service, which happens to be the primary agency having statutory authority on the avian mortality responded that, quote, The acceptable mortality rate is zero, and the law is the law, unquote.

The Bald and Golden Eagle Protection Act and

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Migratory Bird Treaty Act, as well as Endangered Species Act would make criminals with any power company that was responsible for a turbine that killed a single bird. She then made reference to the Christian law, thou shall not kill. The special agent expressed serious concerns over KENETECH wind power studies on how larger wind turbines would affect bird population, saying that, quote, While the study may yield information, this study will not prevent migratory birds and eagles from being killed, unquote.

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Our regional director of the Fish and Wildlife Service in Portland told local utility companies that they could be prosecuted if the turbines harmed protected species and other birds. Marvin Plenart, this Regional 1 director of the Service said, We believe illegal losses must be addressed to the development of safe turbines and not through mitigation payments. We further believe these companies must be required to comply with federal law. The applicable laws do not contain provisions which allow large corporations to simply mitigate noncompliance. The Fish and Wildlife Service now says that they support the administration's goal of developing and expanding renewable energy sources

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such as wind power. Therefore they will, quote, assist the wind power industry with development of wind power technology that is not detrimental to birds, end quote. 75

This is from the U.S. Fish and Wildlife Service. If we need to do more studies of wind farms and avian issues, why not look at California, at Altamont Pass where practically 40 golden eagles are killed anually. There should be more than enough data there to study. All these deaths are in violation of the federal law. The law is put there for a reason, to protect the viable populations. Forty golden eagle, countless other raptor deaths a year at one site alone is totally unacceptable. Even the National Audibon Society orginally called for a moratorium of wind power construction in the west. 76

Now the chief scientist has called for a moratorium on new wind development in important bird areas. That's the key, important bird areas. The Columbia River is an extremely important bird area. It is probably the most significant east/west migratory route for avian species in the west. The proposed KENETECH/CARES wind farm sites along the Columbia Hills overlooking the river is 77

crucial to the bird. Additionally, the northerly flows of the Deschutes and John Day Rivers into the Columbia nearby form the north/south migratory route forming a major migratory crossroads by the site. There are some, though, that would have us believe these are not migratory crossroads or important bird areas. Several Washington wildlife biologists however have stated that this proposed site has great avian significance and the turbines could have a potentially devastating impact on avian species there. They have suggested that it is not an appropriate site for a wind farm. We need to answer fundamental questions about future population impacts to birds. 77

BA of National Audibon says that the most important thing is to make sure that the necessary research gets funded and completed. For this reason I believe that more time, at least a three to five year thorough study should be conducted locally, especially considering cumulative impacts of these wind farms. Some see only a two year window of opportunity for the wind industry to show that wind power is an economically viable source of energy here. Yet George Stricker, the representative for the DAWN (phonetic) Wind Power 78

Company was quoted as saying, We are securing a number of good sites and are investing carefully so we will be ready to build in the next five to ten years, but we are in no rush. Company reps have said solutions are at least eight to ten years away, so we need to take more time for these solutions to come on line.

For these reasons I feel that BPA and Klickitat County should deny KENETECH and CARES proposals at this time until some real solutions to the bird kills is derived and critical habitat is not taken away from the bird. What power plants are we not going to build if we opt now for wind power? What dams will be taken out because of the wind farms? None. 79

MS. TANGORA: David Ties.

MR. TIES: My name is David Ties. I am the president of the Columbia Gorge Audibon. I was discouraged to hear our past president propose a minimum of 150 wind power machines on each of one of the two sites, because I believe that both sites are simply too significant even to allow this test level of wind power. Our chief scientist of the National Audibon has come up with this test that would allow 150 machines if it was not an important 80

bird area. But we believe that all the evidence is indicating that it is, so we are proposing that no construction of wind power machines be built on these two sites because there is just simply too important of a site. 80

Last year the regional director of the U.S. Fish and Wildlife Service expressed a growing concern over killing of eagles and migratory birds associated with the expansion of wind power turbine industry. He stated that it is important to address serious environmental issues which have been identified with wind turbines as currently design. Two studies of avian mortality have been concluded since 1984. These studies and other sources have revealed a disturbingly high loss of federally protected birds. The U.S. Fish and Wildlife Service has notified all major wind power companies of conflict with federal wildlife laws in 1987. Industry expansion has continued without a solution to the mortality. The regional director of the U.S. Fish and Wildlife Service says here, We believe it is important to address serious environmental issues which have been identified with wind turbines since currently designed. We simply would not like to see one problem resolved 81

by creating a problem that would be as serious in nature.

The U.S. Fish and Wildlife Service is particularly concerned over recent proposals to expand to environmentally sensitive areas until a solution to the killing is developed. For example, there are current proposals to place approximately 440 turbines along the Columbia River in Washington and Oregon. The turbines are to be placed adjacent to the Columbia River Gorge areas at locations known to be frequented by golden eagles, bald eagles and peregrine falcons. Peregrine falcons have been reproducing along the Columbia River Gorge within the past five years. Because this expansion is within the full knowledge of the potential taking of migratory birds and species, we intend to open criminal investigations and document all losses.

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The U.S. Fish and Wildlife Service believes illegal losses must be addressed to the development of safe turbines and not through mitigation. We further believe these companies must be required to comply with federal law. The applicable laws do not contain provisions which allow large corporations to simply mitigate noncompliance.

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There is no question that wind turbines as they are currently designed and operated pose a significant threat to migratory bird populations. If expansion is allowed to move forward throughout the nation without proper safeguards in the current situation it can only get worse. 84

Carl Donner from the Washington Department of Fish and Wildlife admonished people that contributed on the avians, that they were putting their EIS before -- they were doing it before they had the avian study done. It says here, the avian report would possibly be completed in the fall of 1994. Power of Draft EIS is scheduled to be issued in the summer of '94, even before the avian study is completed. It is our position that the Draft EIS should not be issued until after the avian study is completed. If it is thoroughly analyzed, the project is then designed to accommodate the results of the study. Of any other approach we would suggest the avian study is mere, quote, window dressing, which would have little or no impact on the final project design. The Draft EIS should show that the proposed design of the project, we believe if presumptuous the design of project is supposed to accommodate the needs of 85

wildlife.

If you will notice the dates on the avian study and the Draft EIS, the avian study is listed as coming up the month after the Draft EIS. I think that they were still done in improper sequence.

David Anderson from the State Department of Fish and Wildlife says, I am concerned that data collection has been initiated prior to the development of comprehensive methodology for this project. Our concerns are that the 1993/94 winter survey period has not been adequately covered due to the late start of the avian study. Poor observation weather in December and January, transition between contractors and a lack of sound methodology during this winter period indicate a lack of sufficient information to adequately review winter studies. The need for further surveys next winter may be warranted. The Washington State Fish and Wildlife biologist here is stating this project is on a fast track, much too fast. The biggest biological argument against the project is only one year of surveys is done. There is no way you can make projections or manifest decisions based on one year of surveys.

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The mitigation measures for wildlife are simply terrible. One gets the distinct feeling that the document is simply an advertisement for the project rather than an objective biological and economic assessment. It goes on and on in that vain. 87

I did a little swift calculation. If we get the 345 machines that would eventually be proposed for both projects, we would have about 102 acres being swept by these props. On the CARES site we would have 172 and a half acres swept by these props. These props are going around fast enough that if you had the sun to the back of you and you are looking at them, you have got a shadow of the pole going onto the props. You can actually see the shadow of the pole on the props. That's how fast they are going around.

We believe that it is the wrong technology for the wrong site and we hope that these projects are not approved. Thank you.

MS. TANGORA: Nancy Newell.

MS. NEWELL: My name is Nancy Newell. I am president of the Board of Northwest Environmental Advocates. My address is 3917 Northeast Skidmore, Portland, Oregon.

I have been a volunteer since the event of Three Mile Island in the environmental community. I have never made a penny on all the efforts that I have made on behalf of trying to make the earth a little bit more habitable place. It is indeed a tragedy that today we face circumstances of extinction as described so beautifully by Chief Jackson. We try our best to mitigate what is a crisis situation beyond anyone's imagination. I think when I was a kid growing up in my small community I had no idea that by this time the bird population would be very minimal within a short span of time.

It is very difficult to make these choices. There is no question about it, but being faced with a crisis of a nuclear accident, the choice that had to be made, it was fairly easy to do. There was no question in my mind that nuclear power was not the answer to a habitable earth for the future at any time. There was no question when I visited my home land in Minnesota as well as New York that acid rain was the answer to a habitable place.

We are facing today as a result of our efforts a closing nuclear plant. The choices that we must make, this is a reality, we have to make choices of

what forms of energy we are going to use to move into the future. This organization has been very active in seeking as many ways possible to conserve energy. Twenty years ago we were the first organization to bring in Ivar Levance (phonetic) who stated the amount of energy to be saved by conservation far exceeds anybody's wildest dreams. A lot of what he predicted has been carried out today. A lot of what he predicted remains to be carried out today. But we are facing a crisis situation with closing the nuclear plant down, and the utilities answers are temporary, cheap gas pumps.

I haven't heard any testimony today on human bird habitats were lost as a result of the major flooding in California. I haven't heard today any testimony of how many birds were lost in the traumatic floods in the Midwestern planes. Could it even compare, and I am not saying that any bird loss is acceptable. But when we are faced with these kinds of choices, we can't avoid reality of what we have to face as responsibility. We can stand here and say we support alternative energy. We can't on the other hand say, Well, it has to be designed exactly to prevent any possible

environmental impact whatsoever. We have to be accountable for taking a stand that fits with the reality of what we are dealing with. The CTs that are proposed are active. Some of these CTs don't require any environmental impact statements. The law doesn't require it. They are small enough, and they are going to have a traumatic impact over a period of time than the wind turbines and more so, much more so.

The issues that have been raised here, as Eugene pointed out in the Draft EIS, it is a critical part of the process that is working with an organization such as KENETECH. It is an approachable organization. It is an organization that we can make suggestions for increasing bird populations. I think certainly there would an audience that would listen in that organization.

The fact that we have to make these choices is certainly not the best. I mean, I think that the Gorge area is one of the most beautiful places I have ever seen. That's why I moved to Oregon. But we also have to make accountable decisions. I think the timing of the project with the Audibon Society feels that there are so many other sites readily available that I am sure that all the wind

power companies would jump at. But no matter where they attempt to place these, there are circumstances, whether it be reptiles, whether it be birds, whether it be other species. There are always areas that are going to be impacted by the use of wind power. So I think we have to in developing this Draft EIS strike some form of balance, and that's what our organization attempts to do. 88

I have worked as a volunteer. I don't get a dime from any corporation of any kind, and I have just as much regard for the environment as any person in this room. Thank you.

MS. TANGORA: The final person I have on the list right now is Iris Harvey. Are there other people who are going to want to speak? Bill Layton.

MR. LAYTON: I am Bill Layton. I live in Goldendale. I don't think anybody likes the idea of looking at them, but maybe we have to get used to it. It seemed to me reading it that maybe if you lost six to twenty hawks or eagles, maybe you could find a way to replace them. Maybe you could buy habitat or some way to replace what we lose. So maybe there is something, a win win for 89

everybody. My comments are pertaining to both projects. It just seemed when I read it if you lose 20 birds, maybe we can buy them someplace else. Maybe there is a spot where we can buy habitat or where we can do something for them. 89

The other one I was concerned about the noxious weeds. I would like to see them include a little more stringent control saying it has to be a program that they work with the weed coordinator a little more. 90

MS. TANGORA: Iris Harvey.

MS. HARVEY: Ladies and gentlemen, I am one of the elders of the Yakama Nation. I am going to talk about the issues. I live part in Goldendale and part Newport, so I cover a lot of area.

I am not going to sit down and lie to you and tell you about, there is some ever us like Mr. LaFevre. I can put George because George is still young. I cannot say about Johnny Jackson, my relative, because he is still kind of young, but some of us live over 60 years. We know what happens. You talk to the natives like me, traditional, like my brother, like my cousins, like my other relatives you see sitting here. I am not

just going to talk about birds, and I am not just going to talk about dams and fish. I don't know how much information that you have, but attend two meetings, the first one and this one. Because I was given information.

I am a wife of a farmer. My husband has a lot of land in this state. I am a descendant of the Yakama Nation. We have a lot of land right there. I am one of the descendants of the 1800s that Army came and said, You Indians have got to move out of that area because the water is going to flood. This is back in the 1940s. I was a young girl. I was going to school when the dam came. I can remember that I read an article of the treaty and my people when Thomas Jefferson said the land of the water, the water will never belong to the red man or the foreigner or the white man. I have got the paper if any of you would like to call me a liar. Our land is very important. I would like to see you guys when we got all this land and put all this technology like the colonial people that was in my village. When you go to the grocery store because you know my husband grows wheat and cattle, and I hate to give you cattle and beef because that is going to be polluted.

You know, my grandfather said one time to me, a 110 year old man in 1968, I want to be here when you are going to be here, and you are going to be buying the air or the water. Do you think he was wrong?

How much is the federal government today, how much are they making? How much money have you people been paying for electricity like me and all of you. I remember when the dam came here they called in it an impact for everything. Now we have impact in electricity because now we want to buy the air.

I don't like to see my motherhood be cut. I don't want you to be telling me that birds don't mean nothing but the creator of that bird has a job. The creator told him what to do. The creator, what the colonial people call God. To me it is my great creator. He created you and he created me. We need him for water we need him for jobs. Sure it puts money in the pockets. It puts money in our pockets because I hears lots of people go, Gee whiz, you have got a lots of timber.

I was here listening to everybody last year. I stood up here to all of you. Did they really pay us the destruction that they did. Any of you

people that are here remember, it is electricity in the ground. I don't know if you guys know this or not, but I know that. I know that because my grandfather told me the wage for electricity, and I can go and he can touch all of you farmers like me. We forgot how much money it brings in our pockets, alfalfa, winter wheat. I am not talking anything special.

Not too long ago I went to sell a piece of land in the Columbia River and have been very lucky with my forefathers. I was just little like that little girl. We worked for sheep herders. I can remember at that time when people used to say, I am saving this land for my grandchildren. What happened? Now we want to give it away. I can remember in the 1800s my grandfather used to say they are going to take a piece of land. My question is can we compromise.

My 14 chiefs representatives and governments in my body agree with any of you because our land is the mother. The water is our blood. The food is our nourishment. Those plants are medicine. You people don't know that, so I guess I have to educate you a little bit. If our birds are not a species, they are our brothers. Because remember

91

the creator creates animals first before he creates us humans. Because he knew how bad we were going to be, our economy. I know it hurts, but let's give something to our children in the future. I know of a lot of you guys think, oh bullshit, old lady. We are going to be dead and gone. What are we going to leave to the future?

I want to tell you, my people, think of what you are doing. Thank you. 91

MS. OWEKANA: I came to interpret for my mother, but she didn't show up. My name is Selgin. My Indian name is Owekana. My address is P.O. Box 344, Goldendale. I have lived in this County for all my life, and I am against both of the projects you are talking about. My granddaughter is here. White man spends millions of dollars on studies. To me, it is a waste of. Sixty years ago when the dam went up, the first dam that ever went up. And the Indians protested, but they were never heard when the dams went up. They protested that too because it is a religious belief. It is no theory. It is a belief that God created all the people. He didn't create just one. He gave them a religion and he gave them a language. My mother says this, I don't know why 92

the white man floated over here and got to practice their religion the way they wanted to because them people wouldn't let them practice their religion. They have a bible. They can tell you one thing one day and they tell you another lie tomorrow. My people is living that.

It is really maddening to see the Oregonian or any other public paper come out studying the archeologist digging out the people. There is a big law. And I hear some of them here saying there is a law, but nobody ever pays attention. And yes, that was my relative we buried Monday because he got a few eagle. But there is machine every day in this Washington State and all the other country that's killing eagles. Nobody is being prosecuted. First it was the fisherman that were not prosecuted.

I have people dying year after year because of Hanford. My aunt is deteriorating with cancer and I don't give a damn what kind of studies white man do. They do it too late. It is like claiming god and cutting people's life short and that's what it has done to my people up and down this river. People study all kinds of treaties but they don't have no respect for the treaties. These were made

with our people, and my people get questioned, why we are living out here. Why didn't we get chased off onto the reservation. This is our land. We are not reservation Indians. So we get treated either way, and to say I lived here all my life, my little village is dead because of the John Day Dam. My grandma was lied to. You are going to be up the water. It is going to flood you. That's what studies tell you, and it has been dead many years. The John Day, where my great great ancestors are buried, that's never been flooded. Yet, every creek and stream that's there, the Deschutes, I just took a ride there after they dig all our people out. Then they have the nerve to fence them in after they have been dug all out and studied. Make a big issue about bringing their dead bodies back from the Smithsonian. That's what your studies tell us Indian people. You guys are liars. You have taken our religion and stepped on it and killed it, really unnerving to see the salmon die. A man asked me the other day about the salmon, what do I believe. What could I say? I believe that white man is destroying this country slowly. We can't see the air. We can't even breathe good anymore. Everybody is dying of asthma

practically ever day. What is that telling you?

This is what my grandmother used to say, white man brought a book of bible across. He don't live by it. He don't read it the way he should.

White man is destroying himself and the enemies are going to destroy every one of these dams if your white man don't destroy everybody. That's what it is, greed, and that's what it really is, pure greed. All us little people here, we work eight hours a day, barely pay our electricity, ready to be turned off. So these are the things my mother talks about, things that has happened every day.

My husband goes to work down towards the river, observes what happens at the John Day Dam, how those fish are dying every day. All you have to do is look at the birds. Why do they want studies? All you have to do is look at nature. You waste millions of dollars doing it while our people suffer. And that was my question the other day, how much money has Bonneville Dam made since it first opened the gates? How much has Dalles Dam made that you could tell my people? That's too much money to give to the Indian people. Go to all the Indian villages. They are living in poverty.

They are not rich. They are getting desperate trying to get on at a casino that a lot of people are opposing. That's gambling. That's a sin.

So that's what the meetings mean to me. You can go to meetings and protest but nobody listens. They think it is a joke. I have lived in a farm. My grandmother knew the kind of people, the white people, and I seen how people struggled in the farm, how they practically gave up their lives to have a farm. They white people had to kill all the buffalos, and now they are killing the salmon. It is really unnerving to see somebody ask you for your opinion and yet it is worthless. Maybe that's why my mother didn't show up, so I will close there.

(Hearing concluded.)

Responses to Oral Comments from William J. Weiler

1. See General Response No. 10.

2. See Response No. 2 to Mr. Weiler's April 5, 1995 written comment letter.

3. See General Response No. 3.

4. See Response No. 4 to Mr. Weiler's April 5, 1995 written comment letter.

5. See Response No. 5 to Mr. Weiler's April 5, 1995 written comment letter.

6. See Response No. 6 to Mr. Weiler's April 5, 1995 written comment letter.

7. See Response No. 7 to Mr. Weiler's April 5, 1995 written comment letter.

8. See Response Nos. 8 through 13 to Mr. Weiler's April 5, 1995 written comment letter.

9. See Response No. 14 to Mr. Weiler's April 5, 1995 written comment letter.

10. Amphibians and reptiles are discussed in Section 2.4.3.2 on pages 2-32, 2-33, and 2-34 of the draft EIS.

11. See Response No. 16 to Mr. Weiler's April 5, 1995 written comment letter.

12. See Response No. 17 to Mr. Weiler's April 5, 1995 written comment letter.

13. See Response Nos. 18, 19, and 20 to Mr. Weiler's April 5, 1995 written comment letter.

14. See Response No. 21 to Mr. Weiler's April 5, 1995 written comment letter.

15. See Response No. 22 to Mr. Weiler's April 5, 1995 written comment letter.

16. See General Response No. 10.

17. Recommendations regarding mitigation measures are noted and were responded to in earlier comments.

18. See Response No. 25 to Mr. Weiler's April 5, 1995 written comment letter.

19. See General Response No. 11.

20. See General Response Nos. 1 and 9 and Response No. 27 to Mr. Weiler's April 5, 1995 written comment letter.

Responses to Oral Comments from Jay Letto

21. See General Response No. 4 and Response No. 2 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

22. See Response No. 3 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

23. See Response No. 4 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

24. See Response No. 27 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

25. See Part 2 of this document, which describes phasing and monitoring included in the Preferred Alternative.

26. Comments noted.

27. Comment noted. The purpose of the hearing was to receive comments on the KENETECH and CARES Projects not to engage in a dialogue with developers about current technologies.

28. Comment noted. See Response No. 23 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

29. See Part 2 of this document, which describes phasing and monitoring included in the Preferred Alternative.

30. See General Response No. 2.

31. See General Response Nos. 10 and 11.

32. See Response No. 27 to the April 17, 1995 written comment letter from the Central Cascades Alliance.

33. See Part 2 of this document, which describes phasing and monitoring included in the Preferred Alternative.

34. Comment noted. See Part 2 of this document on the Preferred Alternative.

Responses to Oral Comments from Peter West

35. Comments noted.

36. Comments noted.

37. Comments noted. The Applicant's purpose and objectives for constructing and operating the proposed project are discussed in Section 1.2 of the draft EIS. Also, see Section 1.5.4 of the draft EIS which discusses the No Action Alternative, i.e., what could happen if the Washington Windplant #1 project is not built.

38. Comments noted. See General Response No. 4.

39. Comments noted. Economic benefits from the proposed project are discussed in Section 2.8.4.1 of the draft EIS.

Responses to Oral Comments from Chuck Barker

40. Current research results have been applied to the design of the Project. See Response No. 15 to the April 17, 1995 written comment letter from the WDFW. Also, see General Response No. 1.

Responses to Oral Comments from Sally Shulinger

41. Comments noted. Also, see Section 1.5.4 of the draft EIS which discusses the No Action Alternative, i.e., what could happen if the Washington Windplant #1 project is not built.

42. Comment noted. Revegetation (Section 2.3.4.2), road building and land use (Sections 2.8.4 and 2.11.4.1), and landscape and aesthetics (Section 2.7.4.1) are discussed in the draft EIS.

43. Comment noted. Discussions of cultural and traditional uses of the site are included in Sections 2.6.3 and 2.6.4 of the draft EIS. Also see Response No. 10 to the April 11, 1995 written comment letter from the Confederated Tribes and Bands of the Yakama Indian Nation.

44. See General Response No. 10.

45. Comment noted.

Responses to Oral Comments from George Rohrbacher

46. The wind turbines have been designed to minimize the potential for avian mortality, and mitigation measures have been developed to reduce the Project's potential to harm birds (see Section 1.4.5.1 of the draft EIS).

    The EIS examined other bird mortality studies associated with wind energy projects, such as the Solano County and Altamont Pass projects in California, and compared the results with the proposed Washington Windplant #1. Unlike areas such as Altamont Pass, the proposed Project site does not appear to be a major flyway for migrating raptors. In addition, based solely on the overall levels of raptor use of existing sites, the potential for

raptor mortality at the proposed site is expected to be somewhat lower than those other projects (see Section 2.5.4.1 of the draft EIS).

Nonetheless, as discussed in the draft EIS, some incidental avian mortality from the Project is expected. During the Conditional Use Permit process, Klickitat County will evaluate whether the estimated level of avian mortality is a significant adverse environmental impact justifying permit denial or approval with conditions.

47. Comment noted. The proposed Project lies outside the Columbia River Gorge National Scenic Area, so land use policies contained in the Management Plan for the Scenic Area would not apply when siting the Project. However, the Project site would be visible from some portions of the Scenic Area. Section 2.7.4 of the draft EIS discusses this in more detail.

48. Comment noted. The wind turbines have been designed to be mounted on tubular towers rather than lattice towers to discourage birds from perching on them.

49. Comment noted. Currently proposed mitigation measures to protect gray squirrels are listed in Section 2.4.4.2 of the draft EIS.

50. As discussed in Section 2.3.4.2 of the draft EIS, a reseeding, restoration, and weed management plan will be developed for the Project site and reviewed by the Washington Noxious Weed Control Board. Ongoing actions to control noxious weeds would take place. The Noxious Weed Control Board would be consulted and involved to make sure that construction equipment does not bring noxious weeds or other potentially hazardous plants onto the Project site.

51. Comment noted.

Responses to Oral Comments from James LaFevre

52. Comment noted. Also see General Response No. 1.

Responses to Oral Comments from Dennis White

53. The comment regarding support for the development of alternative and new energy sources is noted. See Part 1.5.4 of the draft EIS as modified by Part 3 of this document.

54. Comment noted.

55. The proposed Project has been designed to minimize impacts to eagles, falcons, and other raptors and migratory birds. See General Response No. 9 for a discussion of legal issues regarding birds.

56. Comments noted. One of the primary goals of the proposed Washington Windplant #1 is to initially deliver 50 MW of installed windpower capacity to investor-owned utilities. These investor-owned utilities have entered into an agreement with the Applicant to purchase this capacity in order to demonstrate the technical and economic feasibility of integrating wind energy into their mix of generating resources. Another primary goal of the Project is to meet the public's demand for power.

57. Comments noted. The State of Washington Department of Fish and Wildlife reviewed the draft EIS and sent written comments to Klickitat County and the Bonneville Power Administration detailing a variety of concerns. Please see WDFW's comment letter, dated April 17, 1995, and the responses (Nos. 1 through 26) to this letter.

Responses to Oral Comments from Eugene Rosolie

58. Comments noted.

59. Comments noted.

60. Comments noted. The range of 6 to 20 potential bird kills per year was based solely on the Solano County and Altamont Pass wind facilities. Unlike areas such as Altamont Pass, the proposed Project site does no appear to be a major flyway for migrating raptors based on the number of raptors observed during known migration periods. Also, see Response No. 46 to George Rohrbacher's oral comments from the Public Hearing.

61. Section 1.5.4 of the draft EIS discusses the No Action Alternative, i.e., what could happen if the Washington Windplant #1 project is not built. Also, see General Response No. 4.

62. See Part 2 of this document, which describes phasing and monitoring included in the Preferred Alternative; the CARES project does not apply to the Proposed Action evaluated in this EIS.

Responses to Oral Comments from Chief Johnny Jackson

63. The wind power facilities have been designed to minimize the impacts to birds in the Project area and those migrating through the Project area. Predictions of potential impacts to birds from the proposed Project are based on the opinions of wildlife biologists, knowledge and past experience, and studies conducted at other wind power facilities, including Solano County and Altamont Pass in California.

    General comments about the history and concerns of Native peoples in the Project area are noted. Please see Response No. 10 to the written comment letter from the Yakama Indian Nation regarding tribal traditional use and cultural resource sites, and General Response No. 7.

Responses to Oral Comments from Terry Walker

64. Two red-tailed hawk nests have been identified near the area that is described. See Figure 2.5.4 of the draft EIS.

65. This comment applies primarily to turbines proposed for another project, the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS. However, see Response Nos. 3 to Mr. Walker's first undated written comment letter, and Response Nos. 6 and 7 to Mr. Walker's second undated (post-draft EIS Hearing) written comment letter.

66. See Response No. 64, above, and General Response No. 10.

67. See the response to April 17, 1995 WDFW Comment No. 3b.

68. The comments regarding deer sightings are noted. However, this comment applies primarily to the CARES' Columbia Windfarm #1, and does not apply to the Proposed Action evaluated in this EIS.

69. See Response No. 65, above.

70. The Washington Windplant #1 (KENETECH) and the Columbia Windfarm #1 (CARES) projects are different projects proposed by different windpower developers. The Washington Windplant #1 Project, which is the Proposed Action evaluated in this EIS, does not propose to use guy wires.

71. Mitigation measures to minimize bird strikes are discussed in Section 2.5.4.2 of the EIS. Also, see Response No. 13 to the April 17, 1995 written comment letter from the Central Cascades Alliance. In addition, Section 2 of this document discusses monitoring included in the Preferred Alternative.

72. Predictions of potential noise impacts are based on computer modeling for the project area and knowledge of and experience with similar, previous wind projects. Mitigation measures to reduce noise levels and assure that noise standards of WAC 173-60 would not be exceeded are discussed in Section 2.9.4.2 of the draft EIS. Also see Response No. 65, above.

Responses to Oral Comments from Jo Barker

73. An "acceptable" level of bird kills resulting from the Project is difficult to determine. However, the wind turbines have been designed to minimize the potential for avian mortality, and mitigation measures have been developed to reduce the Project's potential to harm birds (see Section 1.4.5.1 of the draft EIS). See General Response No. 9 regarding legal issues with birds.

74. Comment noted.

75. Current research results have been applied to the design of the Project. See Response No. 15 to the April 17, 1995 written comment letter from the WDFW. Also, see General Response No. 9 regarding legal issues with birds.

76. Comment noted. Avian mortality at the Altamont Pass wind facilities in California was examined and information included as part of this EIS.

77. See General Response No. 11 regarding the Columbia Hills as an Important Bird Area. Also, see General Response No. 10.

78. See General Response No. 10.

79. Comments noted. See General Response No. 10.

Responses to Oral Comments from David Theis

80. Comment noted.

81. The concerns of the U.S. Fish and Wildlife Service are noted.

82. Comments noted. See General Response No. 9 regarding legal issues with birds.

83. Current research results have been applied to the design of the Project. See Response No. 15 to the April 17, 1995 written comment letter from the WDFW. Also, see General Response No. 9 regarding bird protection laws.

84. Comment noted.

85. A year-long study of avian use was conducted prior to issuing the draft EIS for the Proposed Action. This delayed the draft EIS from summer 1994 to February 1995, after avian and wildlife studies were completed in December 1994. Also, see General Response Nos. 10 and 1.

86. See General Response No. 10.

87. The draft EIS was objectively prepared by third party consultants to meet the environmental review requirements of NEPA and SEPA. New or additional mitigation measures are discussed in Parts 2 and 3 of this document. Also, see responses to written comment letter from the WDFW.

Responses to Oral Comments from Nancy Newell

88. See General Response No. 4 for a discussion of the trade-offs between windpower impacts versus benefits as a renewable resource.

Responses to Oral Comments from Bill Layton

89. The Applicant's proposed mitigation measures are discussed in the draft EIS in Sections 1.4.5.1 and 2.5.4.2. New or additional mitigation measures are discussed in Part 3 of this document.

90. As discussed in Section 2.3.4.2 of the draft EIS, a reseeding, restoration, and weed management plan would be developed for the Project site and reviewed by the Washington Noxious Weed Control Board. Ongoing actions to control noxious weeds would take place. In addition, the Noxious Weed Control Board would be consulted and involved to make sure that construction equipment does not bring noxious weeds or other potentially hazardous plants onto the Project site.

Responses to Oral Comments from Iris Harvey

91. General comments about the history and concerns of Native peoples in the Project area are noted. Please see responses to the written comment letter from the Yakama Indian Nation and General Response No. 7. Also see General Response No. 4 for a discussion of the trade-offs between windpower impacts versus benefits as a renewable resource.

Responses to Oral Comments from Ms. Owekana (Selgin)

92. The commentor's opposition to the Project is noted. General comments about the history and concerns of native peoples in the Project area are also noted. Please see responses to the written comment letter from the Yakama Indian Nation and General Response No. 7.

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Part 5 — Distribution List

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[1] Also provided final Cultural Resources Assessment Report.

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Mercer Island, WA 98040

John Turner
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Portland, OR 97215

Joann Van Hoy
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Jeannine Vinyard
31 Pine Vista Rd.
Glenwood, WA 98619

Harold Von Olmhausen
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West Richland, WA 99352

William Wilkins
P.O. Box 8
Carson, WA 98610

John Williams
LAZER
12770 SW Foothill Dr.
Portland, OR 97225

Ellen Willis
198 Willis Rd.
Goldendale, WA 98620

Arthur Winterstein
254 Winterstein Rd.
Goldendale, WA 98620

William and Dorothy Young
350 Hoctor Rd.
Goldendale, WA 98620

APPENDIX A

Appendix A – Qualifications of EIS Preparers

R. W. Beck

Founded in 1942, R. W. Beck is a prominent U.S. design and consulting engineering firm serving governmental authorities and agencies, utilities, and industry. The firm's environmental and management experience includes conducting SEPA and NEPA environmental impact statements. R. W. Beck is familiar with both the procedural and substantive requirements of SEPA, and has been involved as prime consultant or subconsultant on numerous SEPA EISs for development projects located throughout Washington. EIS projects include landfills, solid waste recycling and transfer stations, wind energy facilities, hydroelectric projects, transmission lines, stormwater management improvements, and others. The firm is headquartered in Seattle, Washington, with other offices in Anchorage, Alaska; Sacramento, California; Denver, Colorado; Boston, Massachusetts; Nashville, Tennessee; Phoenix, Arizona; Columbus, Nebraska; Orlando, Florida; Indianapolis, Indiana; Portland, Oregon; and Minneapolis, Minnesota. The firm currently employs approximately 600 personnel.

Pat A. Tangora, P.E.

Areas of EIS: Project Management, Land Use, Aesthetics, Public Services, Health and Safety, Transportation

Years of Experience: 16

Special Skills: Project management and preparation of SEPA and NEPA EIS; environmental policy, permitting, and compliance; facility siting, design, and construction; land use, aesthetics, public services and utilities, and geology and soils; expert witness testimony; and public involvement.

Education:
B.S., Civil/Environmental Engineering, University of Washington, Seattle, Washington, 1979.
B.A., English, Whitman College, Walla Walla, Washington, 1976.

Mark L. Ingham

Areas of EIS: Earth (soils and geology), and Water (surface water)

Years of Experience: 17

Special Skills: Geology and soils, solid waste, landfill technology and closures, groundwater protection, water quality, SEPA and NEPA EIS, energy and natural resources, public services and utilities.

Education:
B.S., Geology, Western Washington University, Bellingham, Washington, 1976.
B.S., Civil Engineering, University of Washington, Seattle, Washington, 1990.

Peter W. Sparhawk

Areas of EIS: Health and Safety Risks, Responses to Comments, General Assistance

Years of Experience: 6

Special Skills: Preparation and coordination of environmental documents, including NEPA and SEPA EIS, environmental assessments, FERC hydroelectric project relicensings, hazardous and solid waste management plans, natural resources plans, and soil and groundwater analyses; project management; agency and client coordination; and technical writing and editing.

Education:
B.A., History, Cornell University, Ithaca, New York, 1985.

Cheryl Ingersoll (On Contract to R. W. Beck)

Areas of EIS: Plants

Years of Experience: 10

Special Skills: Plant ecology and systematics, research, plant inventories, rare plant population studies, vegetation analysis, and ecological restoration.

Education:
Ph.D., Botany, Oregon State University, Corvallis, Oregon, 1991.

Jones & Stokes Associates, Inc.

Jones & Stokes Associates, Inc., is an employee-owned, multidisciplinary firm providing clients with a wide range of services in environmental planning and natural resource management. The firm maintains a full-time staff of over 190 professionals that includes environmental specialists, biologists, planners, economists, engineers, and attorneys. Staff biologists are qualified in terrestrial and aquatic ecology, fisheries, wildlife management, wetland biology, habitat evaluation, forestry, and vegetation management. Staff planners provide expertise in environmental planning, land use, transportation, air quality, noise, public services, and recreation planning. The staff civil engineers are experienced in the areas of environmental, water resource, waste disposal, and traffic engineering. Staff attorneys are knowledgeable in all aspects of environmental law and regulations. The firm has used these professionals as part of numerous SEPA and NEPA EIS projects. Jones & Stokes maintains offices in Bellevue, Washington; Sacramento, California; and Phoenix, Arizona. From these office locations, Jones & Stokes has served clients throughout the western United States since 1970.

Gregory A. Poremba

Areas of EIS: Land Use, Socioeconomics

Years of Experience: 15

Special Skills: Socioeconomic impact assessments; public involvement programs; survey research design and implementation; data analysis; demographics; fiscal analysis; land use planning; solid waste management; analysis of transportation, recreation, and aesthetic issues; and social and cultural studies.

Education:
Ph.D., Sociology, Washington State University, Pullman, Washington, 1990.
M.A., Sociology, University of North Dakota, Grand Forks, North Dakota, 1982 (minor in statistics).
B.A., Sociology/Anthropology and English, University of Minnesota-Duluth, Duluth, Minnesota, 1979.

Jonathan Ives

Areas of EIS: Birds, Wildlife

Years of Experience: 23

Special Skills: Management of EISs, terrestrial and habitat evaluation procedures (HEP) studies, biological impact analysis, and wetland and mitigation planning.

Education:
M.S., Wildlife Biology, Humboldt State University, Arcata, California, 1973.
B.B.A., Wildlife Management, Nichols College, Dudley, Massachusetts, 1967.

James A. Estep

Areas of EIS: Birds

Years of Expertise: 10

Special Skills: Wildlife biology and management, with an emphasis in raptor biology and management, resource conservation planning, biological impact resource assessment, endangered species surveys and impact assessments, mitigation planning, and wildlife management techniques (surveys, habitat evaluation, capturing and marking, and radiotelemetry).

Education:
B.S., Wildlife and Fisheries Biology, University of California, Davis, California, 1984.

Stephen M. Hall

Areas of EIS: Birds, Wildlife

Years of Expertise: 7

Special Skills: Terrestrial wildlife and vegetation studies, habitat evaluation and mapping, forest resource inventory, biological impact analysis, mitigation planning, and SEPA and NEPA compliance.

Education:
B.S., Wildlife Management, Washington State University, Pullman, Washington, 1987.

Philip A. Unger

Areas of EIS: Birds

Years of Expertise: 11

Special Skills: Statistics, sampling design, aquatic ecology, fisheries biology, and population dynamics.

Education:
Ph.D., Ecology, University of Colorado, Boulder, 1985.
B.A., Biology, Harvard University, Cambridge, Massachusetts, 1970.

Ryan J. Birdseye

Areas of EIS: Air, Noise

Years of Expertise: 5

Special Skills: Air quality and noise impact analysis, environmental analysis and impact assessment, land use and transportation planning, community development, and water resource planning.

Education:
M.U.P., Urban and Regional Planning, University of Oregon, Eugene, Oregon, 1991.
B.S., Geography, University of Oregon, Eugene, Oregon, 1987.

Carla Staedter

Areas of EIS: Aesthetics

Years of Expertise: 11

Special Skills: Wetland and natural resource rehabilitation, visual impact analysis and interpretative element planning, project management, park and recreation planning and design, and preparation of contract documents.

Education:
B.L.A., Landscape Architecture, University of Minnesota, Minneapolis, Minnesota, 1984.

Historical Research Associates, Inc.

Founded in 1974, Historical Research Associates, Inc. (HRA), is a Missoula, Montana-based corporation that specializes in cultural and environmental resource management. HRA historians, archaeologists, and historical architects have worked with local, state, and federal agencies on a variety of cultural resource management projects. The firm provides professional consultation for all phases of this work, from preliminary inventory to the preparation and execution of mitigation plans. The environmental staff at HRA is experienced in preparing baseline data to support permit applications as well as in performing analyses for environmental impact statements. They have managed multidisciplined environmental analyses for public and private clients on large-scale projects. HRA also offers expertise in historic preservation and community surveys, and has conducted numerous surveys, inventories, and analyses of historic structures and districts. HRA has branch offices in Seattle, Albuquerque, and Washington, D.C.

Gail Thompson

Areas of EIS: Cultural Resources

Years of Experience: 20

Special Skills: Cultural resources planning and assessments, archaeological resource assessments, anthropology, geomorphology, Pacific Northwest Native American issues, and project management.

Education:
Ph.D., Anthropology, University of Washington, Seattle, Washington, 1978.
M.A., Anthropology, University of Washington, Seattle, Washington, 1971.
B.A., Anthropology, University of Washington, Seattle, Washington, 1969.

J. Scott King

Areas of EIS: Cultural Resources

Years of Experience: 8

Special Skills: Archaeological survey, excavation, and analysis in the Pacific Northwest and California; stylistic and functional analysis of lithic artifacts; and research, including geophysical and photographic remote sensing, site formation process studies, and submerged cultural resources.

Education:
M.A., Archaeology, University of Washington, Seattle, Washington, 1994.
B.A., Anthropology, Humboldt State University, California, 1985.

APPENDIX B

Kenetech Washington Windplant #1 and
and CARES Columbia Wind Farm #1

April 26, 1995 On-site Meeting with
Yakama Indian Nation Cultural Resources Staff and Members --
Traditional Cultural Uses of the Columbia Hills

Attendees:

Florence Aguilar, YIN Cultural Instructor
Russell Billy, YIN Cultural Resources Program
Curt Dreyer, Klickitat County Planning Director
Kathy Fisher, Bonneville Power Administration
Sharon Hill, YIN
Fred Ike, Sr., YIN Cultural Resources Program
Sandy Kiona, YIN Cultural Resources Program
Gordon Lothson, YIN Special Projects Manager
Johnson Meninick, Manager, YIN Cultural Resources Program
Dana Peck, Kenetech Windpower
Tom Pors, Foster Pepper & Shefelman
Amelia Sohappy, YIN Cultural Resources Program
Walter Speedis, YIN Cultural Resources Program
Gail Thompson, Historical Research Associates, Inc.
Ben Wolff, CARES
William Yallup, Sr., YIN Tribal Council and Culture Committee

Juniper Point. The meeting and field trip began at Juniper Point, with a blessing by elders Walter Speedis and Amelia Sohappy. Johnson Meninick opened the meeting by saying that Juniper Point is a sacred site to the Yakama even though some structures have been built there in the past. The Tribal Council opposes the windpower projects because of the importance of the area to the Yakama; because they believe there is no public justification for the projects; and because the Yakama have not been asked for permission to build the projects. Mr. Meninick remarked that Klickitat County never asked permission of the YIN to put structures on Juniper Point, but YIN believe that now laws require government-to-government consultation.

Regarding the traditional importance of the area, Mr. Meninick stated that the Great Creator placed each point including Juniper (called Pushpum or Pushash) Point and Skinpum Point to the west of U.S. 97. YIN believe that these points sheltered plants (Juniper Point) and animals (Skinpum Point) during the great flood as witnessed by the occurrence of petrified logs along the slopes. Although the Yakama do not currently use the Juniper Point, in part because of "No Trespassing" signs, they believe that their treaty, court cases, and the American Indian Religious Freedom Act give them access to

it, and they stated that they plan to use it in the future. It is part of their ceded area and close to the Rock Creek long house. The area drains into the Columbia River directly and through other tributaries such as the Klickitat River.

Important resources harvested in the past include moss from lower slopes that was made into licorice candy, oaks to the east of Juniper Point that provided acorns, rabbits and deer that were hunted in the area, roots dug at Juniper point for food and junipers collected there for medicines. The families of Mr. Meninick, Russell Billy, and Fred Ike, Sr., come from this vicinity.

Fred Ike, Sr., stated that at a recent First Foods Ceremony at the Rock Creek long house, he discussed the surrounding area extensively with the elders and listened to their stories about the traditional gathering in the area around Rock Creek. They expressed concern about the little mountain [Lorena Butte] to the north of the Columbia Hills, which is called Hoolie-eye and is associated with a legend about the wind. The elders feel that quarrying cinder there is desecrating this traditionally important site and wanted to know if the County could stop it. The elders also object to the dump site in Roosevelt. They feel that progress is destroying their cultural resources, and they oppose the building of the windpower projects. Finally, the elders asked for a Memorandum of Understanding with the County and local landowners regarding access to land in the area for gathering native foods.

Russell Billy spoke of visiting the Columbia Hills vicinity with his uncle to hunt elk, which existed there along with hawks, eagles, and other wildlife. He believes that after the experimental wind towers were built near the eastern end of the Columbia Hills north of Hocter Road, deer avoided the area of the wind towers and could not be hunted there. Mr. Billy stated that people prayed before they conducted any activities on the land, worshipping the Creator. The Yakama regard almost everything as spiritual.

Sandy Kiona and Amelia Sohappy dug a number of roots and demonstrated that various food plants, including bitterroot, are found at Juniper Point. Other types of plants are found to the north and to the south. Mr. Meninick stated that each environment such as wetlands and uplands support particular food plants, including some that were used to poison enemies. Plants in different local environments, such as the north and south slopes at various elevations, ripened at different times. He feels that Project botanists have not identified all of the plants that have traditional importance to the Yakama because the Indian names differ from those in English.

Tom Pors stated that YIN comments will be reported in the

Project FEIS. He requested that YIN staff discuss with BPA the value of Juniper Point as a traditional cultural property so that a Determination of Eligibility can be made and a Memorandum of Agreement can be drafted. Information is needed on boundaries and other aspects of the physical description and importance of the area.

Johnson Meninick responded that the entire landform is important, extending into Washington and Oregon, because of the movements and trading of resources by bands and tribes. He feels that the traditional cultural property cannot be bounded. Gordon Lothson stated his belief that the entire Project area could be nominated to the National Register as a historic district because the archaeological sites are interconnected, and the area contains traditional cultural resources such as trails, vision quest sites, hunting blinds, and root collecting areas. He believes that the area's cultural resources are unique and should be preserved in place or mitigated through data recovery. Mr. Meninick said that all of the cultural resources in the vicinity are connected to form a whole. In addition, the local resources vary each year and that he wants 10 years to study it before nomination.

Bill Yallup, Sr., discussed the importance of site visits during the growing season such as at present when the elders are going to the mountains to dig roots. He related his experience of being treated with a native plant for more than 100 hornet stings. Even some soils have medicinal uses. Mr. Yallup stated that Juniper Point is a vision quest site because views are possible in the four cardinal directions. People could come here to receive the wisdom necessary to be specialists in various activities.

Discussion followed about the location of turbine strings near Juniper Point. Mr. Meninick believes that they will impact the potential for vision quest experience by interrupting communications from the Creator, the earth, rocks, birds, and animals. In addition, he feels that a "foreign breeze" will be created to kill plants on the point and prevent them from reseeding there and below. This will result in cumulative effects. Dr. Lothson believes that the turbines will change the circulation pattern so that cold air cannot sink to moisten the area below. Mr. Meninick stated that the Yakama should receive 95 percent of the money made from the Projects.

Dr. Lothson recommended that the Project cultural resources staff work with Mr. Meninick to understand the trails in the area and to develop research questions for the lithic scatters. He believes YIN cultural staff will help define the boundaries of an historic district or a traditional cultural property and that a Memorandum of Agreement with the Tribal Council would be appropriate. He said that YIN staff do not oppose archaeological

surface collection and agreed that it should be restricted to sites close to roads or turbine strings that could be disturbed during construction.

Promontory at Eastern End of Project Area. The field trip moved on to visit a promontory at the eastern end of the Project area. YIN members stated that the plants there are the same as at Juniper Point but they ripen earlier because of the location at a lower elevation on a south-facing slope. Resources used in Rock Creek long house First Foods Ceremonies that come from this area include salmon, deer, rabbits, and roots. Mr. Meninick mentioned that rocks in this area have a story associated with them. He requested that Project applicants check carefully on the legal status of affected lands because the YIN believe that some allotment land has been taken out of federal trust improperly.

Ridge West of Juniper Point. The last stop of the field trip was at a ridge top west of Juniper Point, where a number of soil mounds are found. Mr. Meninick asserted that they are undocumented burial grounds and should be respected. He stated that the Yakama have always had feelings for this area but were silent about it. They accepted the cattle grazing in part because the historical landowners waited to turn their livestock out until after the root harvest. The "No Trespassing" signs appeared more recently. They are not pleased, however, by the windpower proposals. He requested that Dr. Thompson and Dr. Lothson continue discussing the importance of the archaeological resources in the Project area.

Tom Pors asked Mr. Meninick how he felt about the archaeological survey designating sites to be avoided during Project construction, and Mr. Meninick responded that the Yakama Nation's answer is "no construction" in the entire area. Kathy Fisher and Tom Pors asked Mr. Meninick if the YIN would participate in negotiation of a Memorandum of Agreement (MOA) regarding potential measures to avoid, minimize, and mitigate impacts of the proposed developments on cultural resources. Mr. Meninick repeated his comment regarding no construction and said that YIN would not discuss mitigation of the Projects' impacts.

Ms. Kiona and Ms. Sohappy located a number of plants traditionally used for root foods in this area. Bill Yallup, Sr., questioned the public's need for the Projects and how BPA will use the power. Preserving the land and wind come first for them. He stated that this ridgetop west of Juniper Point also is a vision quest site because the view takes in the four cardinal directions. He recommended Project personnel attend a Sunday service at Rock Creek where one can understand the elders' concerns. He is unwilling to contradict them. YIN and Klickitat

County do not get along, but the County should do nothing to compromise treaty rights because that is all the Yakama have left. The people are born in the vicinity and will die here; nothing could induce them to move away.

Johnson Meninick and Fred Ike, Sr. closed the meeting with a ceremonial song about the wind and a prayer.