Proposed Columbia Wind Farm #1

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Joint NEPA/SEPA
Final Environmental Impact Statement

September 1995

BONNEVILLE
POWER ADMINISTRATION

Proposed Columbia Wind Farm #1

Joint NEPA/SEPA
Final Environmental Impact Statement

September 1995

DOE/EIS-0206

Proposed by:
Conservation and Renewable Energy System

Lead Agencies:
Bonneville Power Administration
Klickitat County, Washington

Cover Memo

Conservation and Renewable Energy Systems (CARES) proposes to construct and operate the 25-megawatt (MW) Columbia Wind Farm No. 1 (proposed Project) in the Columbia Hills area, southeast of Goldendale, in Klickitat County, Washington. The Project would be constructed on private lands leased from the property owner, Columbia Aluminum, Inc.

The proposed Project would require a Conditional Use Permit from Klickitat County, Washington, and a Power Purchase Agreement between the Bonneville Power Administration (BPA) and CARES. 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 March, 1995, a joint NEPA/SEPA Draft EIS for the proposed Project was issued by Klickitat County and BPA, which are the lead agencies under SEPA and NEPA, respectively, for the EIS. The close of comment deadline for the Draft EIS was May 1, 1995.

This document and the *Draft Joint NEPA/SEPA Environmental Impact Statement, Columbia Wind Farm #1* together constitute the *Final Joint NEPA/SEPA EIS for the Columbia Wind Farm #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).

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 changes to the Proposed Action, the addition of the Preferred Alternative, and other changes made in response to comments on the Draft EIS.

- *Preferred Alternative.* The Draft EIS evaluated the Proposed Action and the No Action Alternative but did not identify a Preferred Alternative. Based on the analysis in the Draft EIS and on comments received regarding impacts and mitigation measures, Klickitat County and BPA have identified a Preferred Alternative in the Final EIS. The Preferred Alternative includes the Proposed Action along with incorporation of 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.

- *Comments and Responses to Comments.* This section includes written comments on the Draft EIS, a transcript of the Public Hearing on the Draft EIS, and minutes of a field trip to the Project site conducted with representatives of the Yakama Indian Nation. 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 squirrels and potential disturbance during nesting; incidental collision of birds, including special-status bird species, with Project facilities; disturbance of archaeological sites potentially eligible for listing in the National Register of Historical Places; impacts to the 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; 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 impacts to high-quality Douglas' Buckwheat/Sandberg's bluegrass plant communities, some incidental avian mortality, changes to aesthetics, and impacts to the traditional cultural property of Juniper Point would be unavoidable.

Beneficial impacts from the Proposed Action would include the demonstration of a utility-scale wind energy facility in the Pacific Northwest region, and potential 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 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 should be given the permits and approvals required for construction and operation of the proposed Project.

Fact Sheet

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

Nature and Location of the Proposal
Conservation and Renewable Energy System (CARES), a joint operating agency under Washington State statutes, proposes to construct and operate the 25 megawatt (MW) Columbia Wind Farm #1 (Project) in the Columbia Hills area of Klickitat County, Washington known as Juniper Point. The CARES proposal was developed in response to the Bonneville Power Administration's (BPA) September 1992 *Request for Proposals (RFP) for a Wind Energy Demonstration Project.*

The legal description of the approximately 395 hectare (975 acre) site is Section 18, T3N, R17E, and the south half of Section 13, T3N, R16E. CARES proposes to have 91 wind turbines and associated facilities installed and operating with the intent of generating electricity from the available wind resources to sell to the BPA.

The No Action Alternative would avoid site-specific environmental impacts from this Project and would limit BPA's ability to diversify the long term power supply prospects in the region and CARES' ability to demonstrate the viability of renewable wind energy in the region. Under the No Action Alternative, the Project would not be constructed and existing grazing and other activities on the site would continue.

Tiered Environmental Review
This EIS is tiered to the environmental review of BPA's Resource Programs, which guides BPA's selection of alternative energy resources to meet the region's long term power needs. The February 1992 Resource Programs EIS (RP EIS), a programmatic document that evaluates the environmental tradeoffs among generic resource types and the cumulative effects of adding these resources to the existing system, is incorporated by reference into this EIS. This EIS is tiered to the RP EIS and evaluates the site-specific impacts from the proposed Project.

Project Applicant
Conservation and Renewable Energy System, a joint operating agency in the State of Washington.

Lead Agencies
Klickitat County is the nominal SEPA lead agency and CARES is the SEPA co-lead agency for the EIS. The U.S. Department of Energy, BPA, is the lead agency under NEPA.

Responsible Officials and Contacts

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

NEPA: Kathy Fisher - ECN, Bonneville Power Administration, P.O. Box 3621, Portland, Oregon 97212, (503) 230-4375

Potentially Required Permits, Licenses, Approvals and Other Procedures Include:

APPROVAL	RESPONSIBLE AGENCY
Conditional Use Permit	Klickitat County
Building Permit(s)	Klickitat County
National Pollutant Discharge Elimination System (NPDES) General Permit	Washington Department of Ecology
Electrical Permit(s)	Washington Department of Labor and Industries
ESA Section 7 Consultation	U.S. Fish and Wildlife Service
Power Purchase Agreement	Bonneville Power Administration
NHPA Section 106 Consultation	Confederated Tribes and Bands of the Yakama Indian Nation and Washington SHPO
Project Implementation and Financing	CARES

Authors and Principal Contributors

Jones & Stokes Associates, Inc.	Avian Resources
	Other Wildlife
	Noise
	Air Quality
	Aesthetics
	Hydrology
	Botanical
R.W. Beck	Earth
	Land Use, Recreation, and Socioeconomics
	Transportation
	Public Services and Utilities
	Health and Safety
Archaeological and Historical Services	Cultural Resource Inventory
Historical Research Associates, Inc.	Oral Histories and Traditional Cultural Properties

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 September 20, 1995. The Final EIS will be issued pursuant to NEPA upon notice in the Federal Register.

Tentative Date for Implementation

Assuming all permits and approvals are obtained, the proposed Columbia Wind Farm #1 would begin operation in 1997. Construction is planned to begin April, 1996.

Nature and Date of Final Actions
The final actions will be decided by various permitting agencies, including a Conditional Use Permit which may be issued by Klickitat County. A public hearing on the Conditional Use Permit has been tentatively scheduled for October 2, 1995. Other permit decisions are expected in late 1995 or early 1996. Final action by the BPA would be the execution of a Power Purchase Agreement with CARES.

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:

- *Botanical Resources Technical Report for the Conservation and Renewable Energy System* Columbia Wind Farm #1 EIS, Jones & Stokes Associates, Inc., (February 3, 1995)
- *Technical Report: A Cultural Resources Survey of the Proposed CARES Columbia Wind Farm #1 Klickitat County, Washington.* Short Report 444, Archaeological and Historical Services, Eastern Washington University (February 1995)
- *Avian Use of proposed KENETECH and CARES Wind Farm Sites in Klickitat County, Washington*, Jones & Stokes Associates, Inc., (January 1995).

These appendices were distributed with release of the DEIS to county libraries and resource agencies with expertise or jurisdiction over biological or cultural resources (see Part 5, 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 BPA Public Information Office:

- Resource Programs Final Environmental Impact Statement (DOE/EIS-0162), Bonneville Power Administration (February, 1993).
- Record of Decision for the Resource Programs Final Environmental Impact Statement (April 22, 1993).
- Draft Environmental Impact Statement (DES-95-2) for the KENETECH/PacifiCorp Wyoming Windpower Project.

SUMMARY

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SUMMARY

S.1. Background

The Pacific Northwest Electric Power Planning and Conservation Act (the Act) provides the framework for regional energy resource planning by the Bonneville Power Administration (BPA). Under the Act, the Northwest Power Planning Council (Council) develops a regional conservation and electric power plan. Every two years, BPA develops a Resource Program to translate the Council's plan into a specific set of near-term actions with associated budgets.

One of the objectives of the Act is to encourage the development of renewable resources in the Pacific Northwest. Correspondingly, the Council's 1991 Power Plan identified the need to determine the cost and availability of new cost-effective resources, such as wind energy, through research and demonstration programs. BPA's 1992 Resource Program recognized the Resource Supply Expansion Program (RSEP) as the primary mechanism to achieve this objective. Through the RSEP, a wind power strategy was developed that acknowledged BPA should help host utilities develop small-scale wind demonstration projects. Implementing the wind power strategy would enable Northwest utilities to address regional barriers to cost effective wind development and gain hands-on experience with the operation and integration of commercial wind farms.

In September 1992, BPA issued a *Request for Proposals (RFP) for a Wind Energy Demonstration Project* to implement the RSEP wind strategy. Six proposals for the acquisition of electrical output with utility services were received and underwent a four stage evaluation of both price and non-price factors. Based on the overall project scores, the combination of the Columbia Wind Farm #1 and the Wyoming Windplant #1, located in Carbon County, Wyoming, was determined to offer the best demonstration value to BPA. These two proposals were designated for further consideration by BPA. A third proposal, the Washington Windplant #1 in Benton County, Washington was identified as an alternate in the event negotiations were unsuccessful for the other two proposals.

Because development of the proposals could result in significant impacts on the human environment, the responsible federal and state agencies are preparing environmental impact statements (EIS). Each of the two proposals being considered by BPA is being evaluated independently because they are not alternatives to one another under the National Environmental Policy Act (NEPA). The Bureau of Land Management and BPA are preparing a NEPA EIS for the Wyoming Windplant in Carbon County, Wyoming. BPA and Klickitat County are jointly preparing a NEPA and Washington State Environmental Policy Act (SEPA) EIS for the Columbia Wind Farm. Both EIS's are tiered to BPA's Resource Programs EIS (RP EIS) as discussed in Section S.3 of this document.

The Columbia Wind Farm #1 (Project) was proposed to BPA by Conservation and Renewable Energy Systems (CARES) (the Applicant), a joint operating agency under Washington State statutes. The charter and current members of CARES are the Public Utility Districts of Benton, Clallam, Franklin, Grays Harbor, Klickitat, Okanogon, Pacific, and Skamania counties. CARES' mission is to develop energy conservation, renewable energy, and other high-efficiency energy resources to assist in meeting the electric power service requirements in the Pacific Northwest.

As proposed, CARES would contract with the FloWind Corporation (FloWind) of San Rafael, California, for the construction and initial operation of the Project. FloWind and CARES are negotiating to lease the site from the property owner, Columbia Aluminum, Inc. CARES would sell bonds, with BPA guarantees and backing, in order to finance construction of the Project. If approved, BPA, through execution of a Power Purchase Agreement (PPA), would agree to purchase up to 25 MW of electricity generated by the Project in accordance with terms negotiated as a result of the *RFP* selection process.

S.2. Purpose Of and Need For Action

S.2.1 Need for Action (Agency Goals)

In the face of potential regional growth and increasing constraints on the existing energy resource base, BPA needs to accomplish the research and development necessary for the acquisition of resources that will contribute to diversification of the long term power supply prospects in the region. A diverse resource portfolio is considered necessary to protect BPA and its customers against risk.

Non-federal agency needs include CARES' need to facilitate the development of conservation and renewable energy projects in the State of Washington and Klickitat County's need to decide whether to issue a Conditional Use Permit (CUP) for the Project.

S.2.2 Purposes to Satisfy the Need (Agency Objectives)

The Project is designed to achieve the agency objectives described below.

BPA:

- Test the ability of wind energy to provide a reliable, economical, and environmentally acceptable energy resource in the region.
- Assure consistency with BPA's statutory responsibilities, including the Act, while taking into consideration the Council's Conservation and Electric Power Plan and Fish and Wildlife Program.

- Assure consistency with BPA's Resource Programs Record of Decision.

CARES:
- Provide the experience in serving the needs and managing the power output of a wind energy facility to one or more of the CARES member utilities.

Klickitat County:
- Assure consistency and compatibility with the Klickitat County Comprehensive Land Use Management Plan.

BPA, CARES, and Klickitat County:
- Restore and enhance environmental quality and avoid or minimize possible adverse environmental effects.

S.2.3 Agency Decisions

Potential decisions to be supported by this EIS include:

- BPA execution of a Power Purchase Agreement with CARES.
- Klickitat County issuance to CARES of a Conditional Use Permit and building permits.
- CARES' project planning and implementation.
- Identification of appropriate Project mitigation requirements to include in the PPA and CUP.

S.3. Relationship to Other Environmental Review

In February 1993, BPA published the Resource Programs EIS (RP EIS), a programmatic document that evaluates the environmental tradeoffs among generic resource types and the cumulative effects of adding these resources to the existing system. Based on the RP EIS, BPA adopted the Emphasize Conservation Alternative in the April 22, 1993 Resource Programs Record of Decision. This alternative emphasizes conservation and efficiency improvements, supplemented by renewable and thermal resources, as the most cost-effective and environmentally responsible option for BPA's long term conservation and generation resource acquisition objectives. As a renewable resource, the Project would implement one element of BPA's Emphasize Conservation Alternative. As described in the RP EIS and subsequent April 22, 1993 Record of Decision, this document is tiered to the RP EIS and evaluates the potential site-specific impacts from the proposed Project.

This document also analyzes the potential cumulative environmental impacts from development of this Project and another wind energy facility proposed by Kenetech Windpower, Inc. (Kenetech) on adjacent and nearby lands. The 115 MW facility, known as the Washington Windplant™ #1, would occupy approximately 5,110-hectares (12,630

acres) in the Columbia Hills to the west, north and east of the Project site. BPA and Klickitat County commissioned a Cumulative Impact Study (CIS) to analyze the potential cumulative impacts of both wind energy projects, and included it in the Draft EIS.

S.4. Proposed Action and Alternatives

S.4.1 Existing Setting

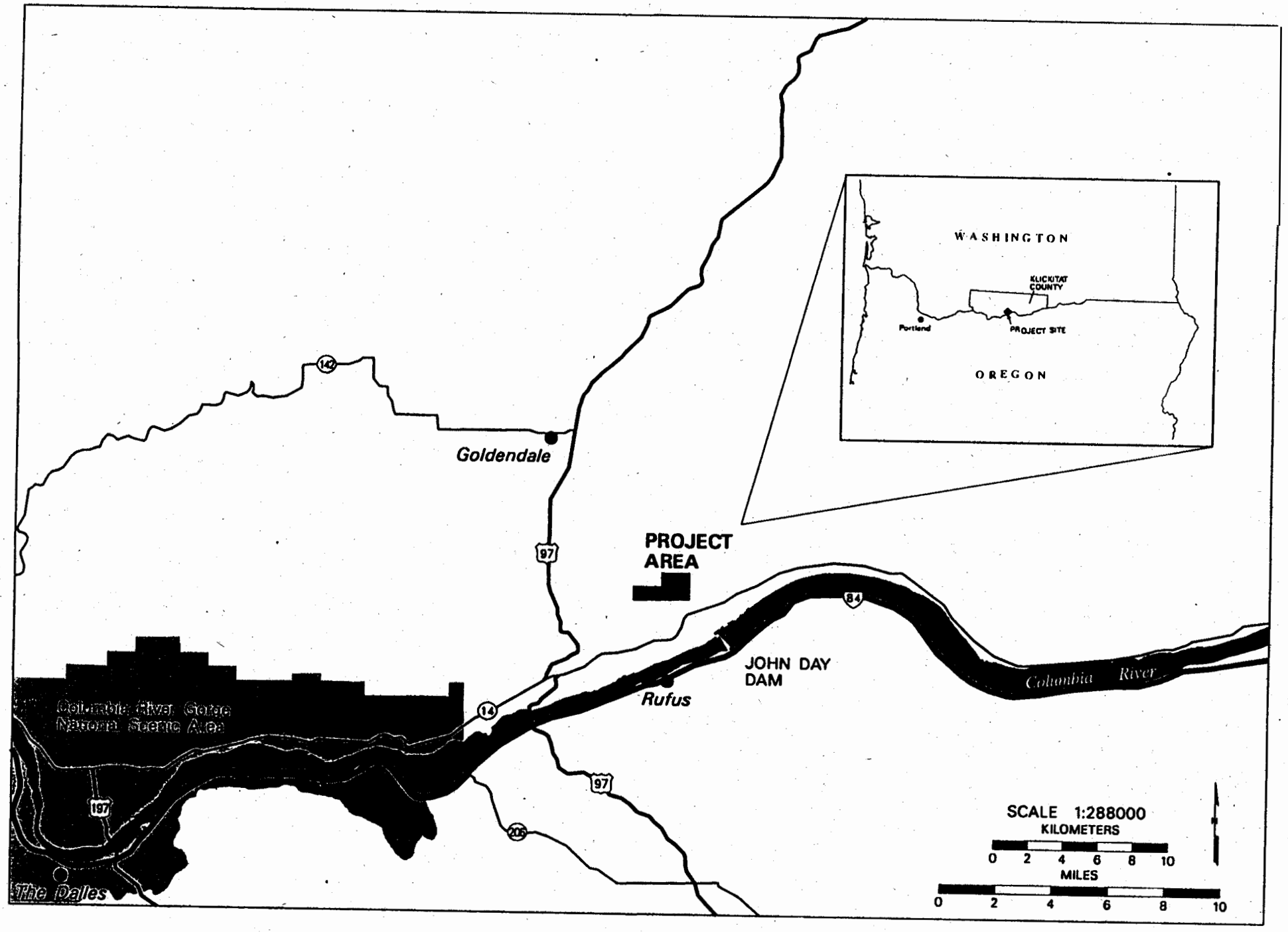
The Project site is located at Juniper Point in the Columbia Hills area of Klickitat County, Washington. The Project would be located on lands leased from Columbia Aluminum, approximately 9.6 km (6 mi.) southeast of Goldendale, Washington on a ridge approximately 3.2 km (2 mi.) north of the Columbia River. A Project location map is included in Figure S.1. The legal description of the approximately 395 hectare (975 acre) site is Section 18, T3N, R17E and the south half of Section 13, T3N, R16E.

The Columbia River, just south of the Project site, serves as a major barge transportation route and recreational resource. The Columbia River has been highly developed with dams and associated hydroelectric generating facilities. One such facility - John Day Dam - is located just south of and below the Project site. A large industrial facility - Columbia Aluminum - is located adjacent to John Day dam. Wind data collected over the years in the Columbia Hills and at Juniper Point has determined that the Project site has a sufficient wind resource to support a commercial-scale wind power project.

The Project lands are owned by Columbia Aluminum, Inc. The site has been used for grazing 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 the Project lands by Native Americans is discussed in Section 2.4 of the Draft EIS and Parts 2 and 3 of this document.

The Project site is zoned Extensive Agriculture. The proposed Project would reduce the amount of land on the site available for agricultural use by about 5 percent. The compatibility of the Project with agricultural uses is discussed in Section 2.8 of the Draft EIS and Part 3 of this document.

The Project would add additional utility facilities to the site. A natural gas pipeline runs north-south through the central portion of the site. Several public and private communication facilities are located on the Project site and to the west on Luna Point. The Projects potential impacts on public utilities and services are discussed in Section 2.12 of the Draft EIS as modified by Part 2 of this document.


WASHINGTON
KLICKITAT COUNTY
Portland
PROJECT SITE
OREGON
Goldendale
PROJECT AREA
142
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14
197
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JOHN DAY DAM
Rufus
Columbia River
Columbia River Gorge National Scenic Area
The Dalles
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Figure S.1

S.4.2 Proposed Action

CARES proposes to construct and operate the 25 megawatt (MW) Columbia Wind Farm #1 (Project) in the Columbia Hills area of Klickitat County, Washington known as Juniper Point. Wind is not a constant resource and based on the site wind measurement data, it is estimated that the Project would generate approximately 7 average annual MWs of electricity. BPA proposes to purchase the electricity generated by the Project.

CARES would execute a contractual agreement with FloWind, Inc., a wind developer, to install approximately 91 wind turbines and associated facilities to generate electricity.

The Project's construction and operation would include:

- install concrete pier foundations for each wind turbine;
- install 91 model AWT-26 wind turbines using 43 m (140 ft.) high guyed tubular towers on the pier foundations;
- construct a new 115/24-kv substation on the Project site;
- construct a 149 m^2 (1600 ft x 14 $ft.^2$) steel operations and maintenance building;
- install approximately 25 pad mount transformers at various locations along the turbine access roads;
- install approximately 4.0 km (1.4 mi.) of underground 24 kv power collection lines to collect power from individual turbines to the end of turbine strings;
- install approximately 1.2 km (13,000 ft.) of underground communication and transmission lines from each turbine to a pad mount transformer;
- install approximately 5.6 km (3.5 mi.) of 24 kv wood pole transmission lines to deliver electricity from the pad mount transformers to the Project substation;
- install approximately 3.2 km (2.0 mi.) of 115 kv wood pole transmission lines to deliver electricity from the Project substation to the Public Utility District No. 1 of Klickitat County (PUD) 115 kv Goldendale line;
- interconnect with the BPA transmission system through the Goldendale line and Goldendale substation owned by the PUD;
- reconstruct, upgrade, and maintain approximately 8.0 km (5.0 mi.) of existing native surface roads;
- construct and maintain approximately 6.4 km (4 mi.) of new graveled roads along the turbine strings and to individual turbines; and
- install meteorological towers guyed with rebar anchors at various locations on the Project site.

Table S.1 summarizes the features of the proposed Project.

Table S.1 Summary of Proposed Project Features

Features	Area Temporarily Disturbed		Area Permanently Occupied	
	hectares	Acres	hectares	Acres
Turbine Strings Development[1]	20	50	5.4	13
Overhead Powerline	4	10	3.1	8
New Primary Access Road[2]	N/A	N/A	N/A	N/A
Substation	0.5	1	0.5	1
Upgraded Access Road	11	28	10	25
Maintenance Facility	0.4	1	0.4	1
Construction Staging Area	2	5	N/A	N/A
TOTAL (rounded to closest hectare/acre)	**38**	**95**	**19**	**48**

1 Estimates 100-foot disturbance corridor along turbine strings that includes turbines, towers, foundations, transformer pads, underground lines, new turbine string and individual turbine access roads. New roads are estimated to be 12 feet wide plus associated drainage ditches.

2 All primary access roads are existing and would be upgraded; all new roads are included in the turbine string development amounts.

A map illustrating the proposed site development is included in Figure S.2

S.4.3 Preferred Alternative

The Draft EIS evaluated the Proposed Action and the No Action Alternative. Klickitat County and BPA did not have a preferred alternative at the Draft EIS. Based on comments received regarding impacts and mitigation measures, Klickitat County and the Bonneville Power Administration have now identified the Preferred Alternative as the Proposed Action along with incorporation of certain mitigation measures identified in the Draft EIS and Part 1 of this document. The environmental impacts of the Preferred Alternative are the same as those identified in the Draft EIS for the Proposed Action, as modified by Part 2 of this document. However, the degree of impact of the Preferred Alternative would be less than the Proposed Action because of the implementation of mitigation measures designed to avoid sensitive areas, wildlife, and cultural resources. Where avoidance is not possible or practicably feasible, the Preferred Alternative would minimize impacts through, among other measures, careful siting of Project facilities in consultation with wildlife agencies and replacement of lost or damaged habitat.

S.4.3.1 Description

Location of Project Features

To the maximum extent feasible given site topography, Project boundaries, the status of easements, Project economics, and safety considerations, make adjustments to Project

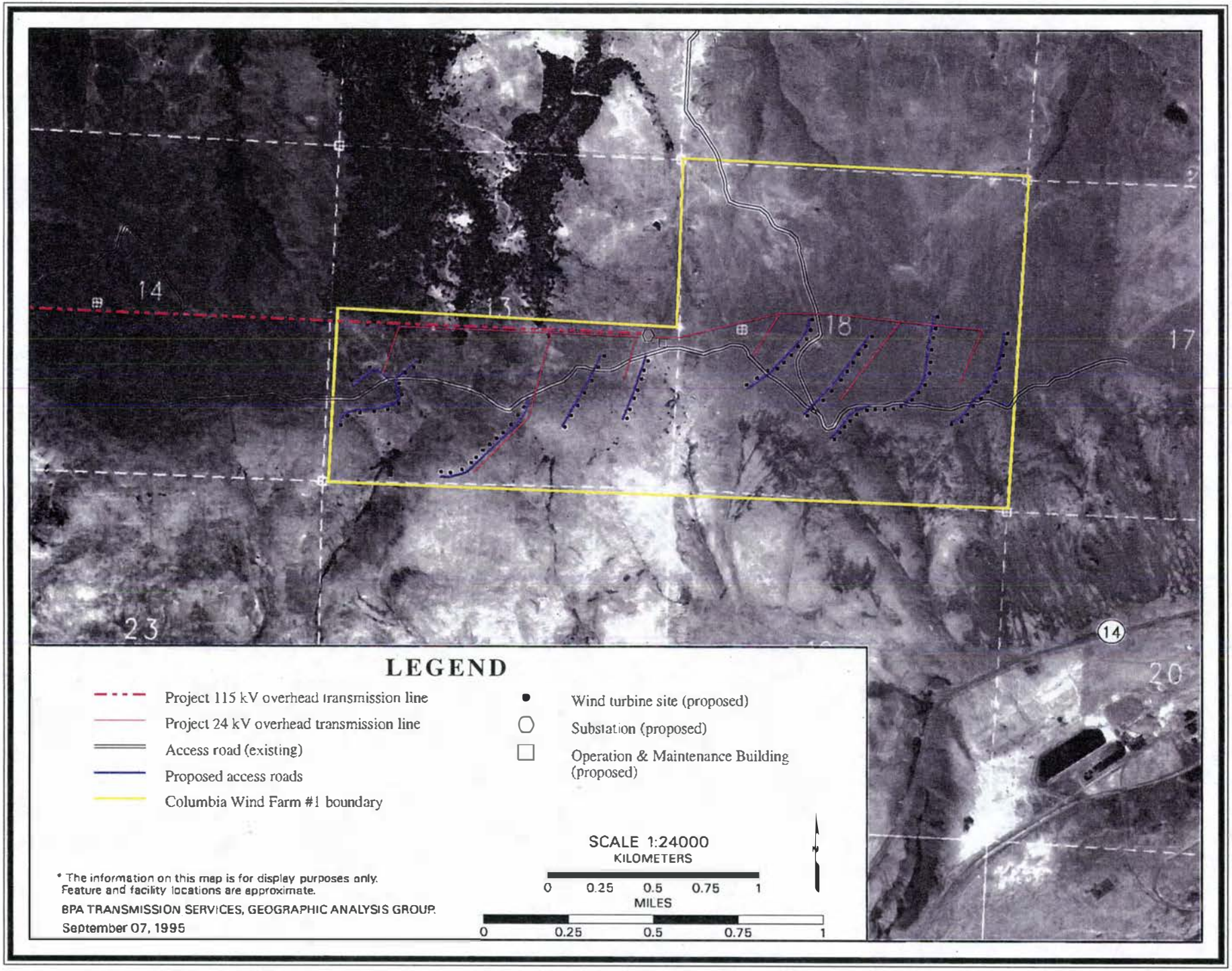


Figure S.2 Proposed Site Development

design and to the proposed powerline route after consultation in the field with the Washington Department of Fish and Wildlife (WDFW) that are designed to meet the following objectives:

- Reduce fragmentation and disturbance of shrub-steppe habitat
- Avoid disturbance to Oregon white oak habitat
- Avoid disturbance of Juniper Savannah habitat
- Where practical and feasible, route powerline and roads in common corridors to reduce the overall amount of site disturbance.
- Minimize or avoid, to the maximum extent feasible, disturbance to areas of high-quality Douglas' buckwheat/Sandberg's bluegrass plant community.

Additional Cultural Resources Surveys

Conduct additional Cultural Resources Surveys prior to construction, including:

- Precisely locate cultural sites and isolates on the Project site using property surveys or other means so that the final design of roads and the placement of the turbines and construction staging areas can avoid the identified sites and isolates where feasible. The cultural sites and isolates occupy a limited area and avoidance during construction appears to be feasible.
- Conduct additional cultural resources surveys of the off-site Project 115-kv powerline once the route is more precisely identified, and adjust locations to avoid any cultural sites potentially eligible for the National Register of Historic Places where feasible.
- Complete further testing of any sites potentially eligible for the National Register of Historic Places that prove to be unavoidable during final design, by a qualified archaeologist in consultation with the State Office of Archaeology and Historic Preservation (SHPO), to determine their eligibility for listing in the National Register of Historic Places and, if eligible, to identify appropriate mitigation measures such as avoidance or scientific data recovery consistent with the National Historic Preservation Act.

Hoctor Road Survey

Provide for a detailed assessment of the Hoctor Road roadway condition prior to construction. Determine the amount of road damage, if any, caused by construction vehicles and allocate the appropriate costs to the Applicant.

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 and the Klickitat County Noxious Weed Control Board that shall become a condition of building permits and that, at a minimum, addresses the following:

- Stockpiling topsoils separately from other soils.
- Specifications for reseeding any areas disturbed during construction with seed 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 be incorporated into the Erosion and Sediment Control Plan discussed in Section 2.1.2 of the Draft EIS.
- Timing and application rates for seed mixes.
- Specifications for reseeding disturbed Bluebunch wheatgrass-Idaho fescue communities with seed mixes that include species native to those communities, especially dominant species.
- Coordination with Kenetech's Washington Windplant #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 activities to control noxious weeds, until restoration vegetation is reasonably established.
- Measures for addressing requests of the Klickitat County Weed Control Board Coordinator.
- Adequate facilities for cleaning of construction vehicles and equipment entering the Project site to control the entry of noxious weeds.

Construction Environmental Protection and Monitoring Plan

Prior to construction, develop a Construction Environmental Protection and Monitoring Plan in consultation with the 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 where feasible and appropriate, consistent with the provisions of Parts 1.2.1 and 1.2.2 of this document. Environmentally sensitive areas include:
  - High-quality native plant communities and priority habitats as described in Part 1.2.1 of this document.
  - Areas within 122 meters (400 feet) of any occupied western gray squirrel nest between May 15 and September 30 for general construction and

within 400 meters (1300 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.
  - Areas within 400 meters (1,300 feet) of occupied red-tailed hawk nests from April through July.
  - Cultural sites and isolates potentially eligible for the National Register of Historic Places if final Project design confirms that they can be avoided.
  - Other cultural resources identified during the studies outlined in Part 1.2.2 of this document.

- Provisions for independent environmental monitoring during construction using Agency-approved environmental monitors, including a tribal monitor appointed by the Yakama Indian Nation, to ensure that identified environmentally and culturally-sensitive areas are avoided.
- Provisions for training construction workers on the importance of cultural properties to Native Americans, how to identify cultural properties, 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 Construction, and measures for protection of sensitive shrub-steppe habitats from encroachment from sidecast materials.
- Livestock exclusion, as necessary, from reseeded native grasslands in shrub-steppe habitat following consultation with the property owner.

Operations Monitoring Plan

Prior to commercial operation, develop an Operations Monitoring Plan in consultation with WDFW, with results reported as part of the annual Conditional Use Permit review for the Project, that includes the following:

- Ongoing erosion monitoring of Project facilities, including roads, on a weekly basis and after substantial rainfall or snowmelt events.
- Visual inspection of all fluid-bearing equipment on at least a weekly basis to detect and correct any leakage.
- Monitoring the Project site for evidence of unauthorized use and access and provide additional security as appropriate.

Avian Injury and Mortality Monitoring Plan

Prior to commercial operation, develop an Avian Injury and Mortality Monitoring Plan in consultation with the USFWS, BPA, Klickitat County Planning Department, and WDFW. The goals of the Avian Injury and Mortality Monitoring Plan would include:

- standardized protocols for assessing avian mortality and promptly responding to the discovery of injured birds in order to improve their chances for survival;
- procedures for training personnel in reporting and providing timely incident reports to the USFWS, WDFW, BPA, and Klickitat County Planning Department; and
- procedures for evaluating incident report data on a periodic basis and reporting findings to the USFWS, WDFW, BPA, and Klickitat County Planning Department.

Decommissioning Plan

Prior to start of construction, provide a Decommissioning Plan for approval by the Klickitat County Planning Department detailing the circumstances and schedules under which individual turbines and associated equipment will be removed from the site, methods used to restore areas previously containing turbines, and a detailed budget for decommissioning the Project and restoring the overall Project site to a natural condition.

S.4.3.2 Additional Mitigation Measures

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

Design

- 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.
- Provide a minimum 15-cm (6-inch) gravel surface on Project roads to reduce erosion.
- Provide design measures, to be approved by the Klickitat County Department of Public Services and WDFW, to prevent small mammals from burrowing under foundations wherever foundations are less than 2 feet deep. All conduits would be sealed to prevent rodents from entering any equipment or facilities.
- Foundations for equipment and components of individual turbines should be consolidated where feasible for the purpose of minimizing aesthetic impacts and minimizing the amount of area that may be involved in decommissioning.
- Design road and turbine foundations and cut slopes in consultation with a professional geotechnical engineer. Avoid construction in areas determined by

geotechnical studies and final design to contain unstable slopes that could not be adequately stabilized during construction or within one year of completion of the Project.

- 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.
- Design and install turbine structures to fall below the 61-meter (200 foot) requirement for lighting established by the Federal Aviation Administration. Design other limited site lighting, if any, to conform with requirements of the Klickitat County Illumination Control overlay zone.
- Locate turbines in strings to provide a more uniform looking development and to minimize aesthetic impacts.
- Precisely determine the location and frequency of potentially impacted communications transmitters and receivers when siting individual turbines to minimize potential signal interference. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.
- Coordinate turbine paint colors to be compatible with those proposed for Kenetech's Washington Windplant #1 Project. Turbine blade colors should be black or neutral except to the extent that colors and patterns may be required through consultation with the USFWS or WDFW.
- Use non-reflective paints to reduce glare.
- Design all overhead powerlines with raptor protection measures in accordance with the best practices contained in "*Suggested Practices for Raptor Protection on Powerlines*" (APLIC, draft 1995), and "*Mitigating Bird Collisions with Powerlines: The State of the Art, 1994*" (APLIC, 1994).
- Design turbine towers and foundations to survive the highest expected wind speeds on the site, plus an adequate safety margin.
- Design slab foundations with berms to reduce the potential for leakage of hydraulic fluids and fuels to enter soil and water resources.

Construction

- Limit clearing and grading activities to the late spring through early fall period, subject to review and approval of the Klickitat County Building Official, to minimize erosion during construction. During all other periods, open soil areas must be stabilized through best management practices defined in the Erosion and Sediment Control Plan.
- Minimize grading disturbance to the maximum extent feasible considering the need to minimize disturbance to Priority Habitats and to 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 western gray squirrel 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 sites 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.
- 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 equipment.
  - Select the quietest effective setting for back-up alarms.
  - Confine construction activities to daytime hours in proximity to residences.
- Coordinate routing of Project construction traffic and travel times with the Klickitat County Public Services Department and with Kenetech's Washington Windplant #1 Project to reduce conflicts with construction work on Hoctor Road.
- To the extent economically feasible, schedule Project construction activities to avoid use of Hoctor Road during likely periods of freeze/thaw cycles.
- 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 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 District 7 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 and vehicles with gate keys or controls to electronic gates.
- Provide fire extinguishers and approved fire tools on vehicles and equipment used during construction.
- Restore temporary roads and staging areas to preconstruction grades within one month of their discontinuance of use
- Restore all disturbed areas consistent with the Reseeding/Restoration/and Weed Management Plan developed for the Project.
- Prohibit use of pesticides and rodenticides. Avoid the use of herbicides except as reasonably necessary for weed control.
- Construct storage buildings containing petroleum-based lubricants above-ground with double walled containers and spill containment basins.

Operation

- Consult 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 interpretive signs at these facilities as allowed by the facilities' management.
- Provide liquid-absorbing pads under turbines, associated equipment and fluid vessels to contain or collect fluid spills during turbine servicing. Fluids that are spilled shall be cleaned immediately.
- Provide a clean looking facility free of debris and unused or broken down equipment by:
  - 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 operations consistent with the Operations Environmental Monitoring program developed for the Project.
- Monitor bird injuries and mortality and comply with response and reporting procedures consistent with the Avian Injury and Mortality Monitoring Plan.
- 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 are being exceeded due to Project equipment, Applicant shall, as requested by the County, be required to provide appropriate sound level measurements on the complainant's

property, at Applicant's expense. In the event that Applicant does not respond within 48 hours of County request, County costs incurred in responding to complaints and monitoring/measuring sound levels shall be reimbursed by Applicant.

- During welding operations, have a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.
- Develop and implement a fire fighting plan in consultation with Fire District 7 that includes consideration of an annual fire drill, storage of fire fighting material on-site, and evacuation plans.
- 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 as approved by the SW Washington Health District.
- Provide for designated smoking areas on the Project area.
- Develop a safety plan for construction workers and employees, that includes procedures for responding to natural and medical emergencies, handling/storage/transportation of hazardous materials, etc.
- Mark guy wires on turbine towers with bird flight diverters.
- Prepare a Spill Prevention Control and Countermeasures Plan ("SPCCP") pursuant to U.S. Environmental Protection Agency regulations at 40 C.F.R. Part 112 within six months of commercial operation and implement the SPCCP within 12 months of commercial operation.
- Provide all County emergency departments and vehicles with gate keys or controls to electronic gates.

S.4.3.3 Mitigation Proposed by the Applicant

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

- Reduce perching opportunities for raptors by using tubular rather than lattice towers.
- Minimize the potential for avian electrocution and collisions by designing all overhead powerlines with raptor protection measures in accordance with the best practices contained in Suggested Practices for Raptor Protection on Powerlines (APLIC, draft 1995), and Mitigating Bird Collisions with Powerlines: The State of the Art, 1994 (APLIC, 1994).
- Installing turbines designed with a fail-safe redundant braking system to protect against loss of control due to excessive speed.
- Designing turbine towers and foundations to survive wind speeds of 55 m/s at 9 meters (123 mph at 30 feet) above the ground surface.
- Enclosing gears and moving parts to contain sparks.

- Designing and installing all electrical equipment 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).
- Providing locks and high voltage warning labels on all control cabinets and transformer cabinets.
- Fencing and locking the Project substation and providing warning signs about the presence of high voltage equipment. A sign at the substation entrance shall indicate emergency contact information.
- Provide locked gates onto the Project site. Sign to warn of high voltage equipment and buried cable. Signs shall be placed at locked gates indicating emergency contact information.
- Locating the 115-kv overhead powerline at least 61 meter (200 feet) from the turbines so that cranes working on the turbines will be a safe distance from the powerlines.
- Researching the use of non-reflective paints and using best efforts to install blades that reduce glare.
- Installing underground communication and transmission lines where economical and feasible.
- Revegetating disturbed areas not permanently occupied by Project features.
- Locating turbines in strings to provide a more uniform-looking development.
- Develop a Hazardous Materials Response plan.

S.4.4 Alternatives Considered but Eliminated from Detailed Study

S.4.4.1 Alternative Energy Resources

BPA's RP EIS compared alternative energy resources such as conservation, renewable resources, efficiency improvements, cogeneration, combustion turbines, nuclear power, and coal. The RP EIS evaluated the environmental trade-offs among generic resource types and the cumulative effects of adding various combinations of these resources to BPA's generating system.

The Project would implement BPA's decision to test wind energy in the region. Accordingly, it focuses on a specific wind energy demonstration project and does not duplicate the RP EIS's analysis of alternative resource types.

S.4.4.2 Alternative Sites/Proposals Submitted in Response to the BPA *RFP*

BPA is prevented by law from owning any generating resources and uses a variety of approaches, such as competitive solicitations, to facilitate development of a project. Since experience has shown that competitive solicitations usually result in offers totaling many more proposals than needed to satisfy the request, BPA developed a multi-stage

evaluation process, documented in BPA's RP EIS. BPA prepares site specific environmental review of a proposed project prior to executing a PPA. Such review is limited to analysis of reasonable alternatives.

As discussed in S.1 of this summary, BPA received and evaluated six separate proposals for wind energy demonstration projects under the *RFP* solicitation. The environmental data obtained from the project proponents furnished BPA with background information about potential impacts to natural resources, recreation resources, cultural and historical resources, aesthetics and noise, public lands, public health and safety, and consistency and compatibility with existing land uses and land use plans. BPA rated each proposal based on the evaluation of the responses to the checklist. The environmental rating was incorporated into the demonstration value rating and, together with ratings for system cost and project feasibility, determined the overall project score.

Based on the overall project scores, the combination of the Columbia Wind Farm #1 and the Wyoming Windplant #1, located in Carbon County, Wyoming, offered the best demonstration value to BPA. BPA chose these two projects for further consideration in a negotiation group. BPA identified a third proposal, Kenetech's Benton County Washington Windplant™ #1 located in the Rattlesnake Hills area as an alternate in the event negotiations were unsuccessful for the other two proposals. Since then, Kenetech abandoned the Benton County, Washington site as an unfeasible project, and the lead agencies determined that it is not a reasonable or feasible alternative to the Columbia Wind Farm #1.

Because of their limited demonstration value, the BPA Administrator did not consider acquiring any of the four proposals not designated for the negotiation group. They are not reasonable alternatives to meet BPA's objective to test wind energy and therefore, collective consideration of all proposals is not practical or reasonable.

To meet the objectives of NEPA and SEPA to inform the public and agency decisionmakers regarding the environmental consequences of the proposed action, Section 1.3.2.1 of the Draft EIS includes a discussion of the potential environmental consequences of the Benton County Washington Windplant™ project proposed under the BPA *RFP*. 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 the 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, Kenetech 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. Although the Benton County Washington

Windplant™ is not a reasonable alternative, the environmental information will be used to provide a comparative analysis with the potential environmental consequences from the Project.

S.4.5 No Action Alternative

EIS's must consider the alternative of not implementing the Proposed Action. In this Project, the No Action Alternative would limit BPA's ability to diversify the long term power supply prospects in the region. BPA has not purchased wind-generated power before. If BPA does not purchase the energy output associated with this Project, then BPA would forego the opportunity to address regional barriers to cost effective wind development and to gain experience with the operation and integration of commercial wind farms. BPA is not likely to pursue another wind demonstration project in the Pacific Northwest given it's current financial situation and it is unlikely the Project would be otherwise implemented without a commitment from another party to acquire the energy output. If Klickitat County does not issue the permits required for construction and operation of the Project, it can not be constructed on the Project site. In either case, none of the environmental impacts or benefits associated with the Project would occur.

The lack of a suitable wind energy demonstration project in the region could lead to delayed implementation of BPA's and the Council's renewable energy development objectives and could, in the future, prompt the increased development of other energy resource alternatives. Without the knowledge and experience gained through a demonstration project, proposed wind energy projects could continue to be too costly to qualify for selection through a competitive acquisition process. This could lead to future development of more competitively priced energy resources, most notably gas-fired combustion turbines, which could result in greater air quality impacts and potentially greater land use, habitat, and wildlife impacts in areas where natural gas is produced and transported.

S.5. 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 issues to be resolved, including the environmental choices to be made among alternative courses of action and the effectiveness of mitigation measures. Based on the environmental review conducted for this 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.
- Impacts to special-status raptors from collision with Project facilities.
- Disturbance of cultural sites that are potentially eligible for listing in the National Register of Historic Places.
- 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 night time noise standard (50 dba[1]) at some residential locations.
- Potential schedule conflicts with repairs planned for Hoctor Road.
- Potential for obstruction of line-of-sight microwave signal transmission at certain turbine locations.

These impacts can largely be avoided, minimized, and/or otherwise mitigated as shown in Table S.2.

Table S.2 Summary of Impacts and Mitigation

Impact	Mitigation
Erosion and sedimentation	Employ Best Management Practices to stabilize soils and control runoff, and remove sediments prior to discharging runoff into intermittent streams and drainages.
Disturbance to shrub-steppe habitat	Alter the location of Project transmission lines. Flag construction limits. Apply intensive reseeding, restoration, and ongoing weed control efforts. Replacement of priority habitat acreage permanently occupied by Project facilities on a 1:1 basis through a Habitat Replacement/Mitigation Plan, as discussed in the Preferred Alternative.
Western Gray Squirrel	Retain oak vegetation Restrict construction activity near nest sites during the breeding season.
Potentially eligible cultural sites	Flag the sites and restrict construction activities from flagged area.
Noise	Modify the turbine layout.
Conflicts with Hoctor Rd. repair schedule	Coordinate construction activities with County Department of Public Services. Time construction in areas that do not have to be accessed from Hoctor Rd. to coincide with the time-critical construction activities that may occur on Hoctor Rd.
Line-of-sight microwave transmissions	Relocate individual turbines to avoid signal paths.

[1] dBA = A-weighted decibels.

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 the EIS 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 on the Project site. This community exists across a narrow, natural range in Washington 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. Efforts to restore this community have not been documented and therefore may not be successful. Increased erosion and potential for establishment of invasive weeds could result if restoration efforts prove unsuccessful. This impact can be reduced to a level of non-significance, however, by implementation of the Habitat Replacement/Mitigation Plan, as discussed in the Preferred Alternative in Part 1 of this document, by replacement of similar habitat through on-site or off-site preservation and enhancement.

2) **Avian Impacts.** Year-long 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 a major migratory flyway. The Project proposal includes installation of raptor protection measures on powerlines and power poles and the use of tubular rather than lattice towers to minimize avian impacts. However, some incidental raptor mortality may be unavoidable. 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 even if collisions do occur, although the local population may be reduced.

3) **Aesthetics.** With mitigation, the Project would continue to 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 by ensuring that the site is free from clutter and removal of inoperative turbines, research suggests that some viewers would find the Project visually displeasing while others would view it favorably.

4) **Traditional Cultural Properties.** Review of oral history interviews with certain Yakama elders and comments from the Yakama Indian Nation (YIN) on the Draft EIS indicate that Juniper Point, located on the Project Site, is eligible for listing in the National Register of Historic Places as a traditional cultural property (TCP). 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 Project proposes development of turbine strings in proximity to Juniper Point, and thus Project turbines would be visible to the west, north and east of the Juniper Point TCP and sound from their operation would be heard from the Juniper Point TCP. 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 YIN's perspective. The Yakama believe that the spirituality of the place would be also significantly affected. They also believe that both the CARES and the KENETECH projects would alter the traditional cultural value of the Columbia Hills in general.

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 numerous communications transmission facilities have altered the landscape of the Juniper Point TCP and its suitability as a vision questing area. In addition, the Yakama currently do not have access to Juniper Point, which is privately owned land and therefore not within the definition of "open and unclaimed land" protected by the Treaty of 1855. The Project has a finite lifetime and mitigation identified in the Preferred Alternative would require that the Project be totally decommissioned at the end of its useful life. Although the Yakama do not currently practice spiritual activities at the Juniper Point TCP, consultation and review of oral history tapes indicate the Yakama will view the Project as having a significant adverse effect on its traditional cultural value to them.

Mitigation considered in this EIS would reduce Project impacts and address these uncertainties to varying degrees.

The Preferred Alternative would reduce impacts to Priority Habitats, cultural resources, birds, wildlife, and noise by requiring a number of mitigation plans and measures to further reduce Project impacts. Impacts to Douglas' buckwheat/Sandberg's bluegrass communities would be reduced by the Habitat Replacement/Mitigation Plan. Impacts to birds would be reduced by marking guy wires and powerlines and applying the best practices contained in APLIC reference materials. Impacts to aesthetics would be reduced by the Decommissioning Plan. Impacts to cultural resources would be reduced by additional cultural resource surveys, the Decommissioning Plan and the Construction Environmental Protection and Monitoring Plan.

The No Action Alternative would avoid impacts associated with the development of the Project. However, impacts caused by ongoing grazing activities and communication facilities would continue. In addition, the No Action Alternative 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.6. 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 CFR §1502.19).

The Project would negligibly reduce the amount of land available for grazing, but would provide a source of additional income to the site owner, Columbia Aluminum, Inc. 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 if the Project were decommissioned.

Implementing the Proposed Action will not foreclose future consideration of other potential BPA energy resource actions by this or other resource demonstration mechanisms.

Deferring approval would provide time for additional studies of avian use, but could result in cancellation of Project consideration due to the changing competitive utility market which may affect BPA's operations. If deferred, BPA and CARES would not have the opportunity to test the ability of wind energy to provide a reliable, economical, and environmentally acceptable energy resource in the region. If BPA misses this opportunity to develop experience with wind energy, future energy resource acquisitions may favor fossil fuel generating resources as discussed in S.4.5 (No Action Alternative) with comparatively greater environmental impacts on a per-MW basis. The CARES' member utilities would also miss the opportunity to gain experience with wind as a generating resource. Given the relatively low level of expected impacts that may result from construction and operation of the Project with the mitigation measures identified in Part 1 of this document, deferring Project approval until additional avian studies are conducted does not seem warranted.

Table S-1 Summary of Impacts and Mitigation

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
EARTH AND GEOLOGY:			
Affected Environment	• Site extends along a portion of Columbia Hills ridge. • Elevation ranges from about 670 meters (2,200 feet) to about 950 meters (3,120 feet). Juniper Point, located in the center of the Project site is the highest elevation in the immediate vicinity of the site. • Steep slopes along south edge. • Silt loam soils	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Clearing and grading on silt loam soils susceptible to wind and water erosion. • Roads constructed on silt loam soils susceptible to rutting and sloughing. • Unstable slopes; potential for localized slides.	Less than Proposed Action	Less than Proposed Action
Mitigation Measures	• Use and upgrade existing roads where feasible. • Where practical and feasible, route powerline and roads in common corridors to reduce the overall amount of site disturbance. • Design roads with ditches and culverts sized to accommodate a 100 year storm. • Locate roads to reduce the amount of cut and fill (grading) required. • Revegetate any disturbed areas that are not permanently occupied. • Develop and implement an Erosion and Sediment Control Plan that specifies the stabilization and structural BMPs that would be used to reduce soil loss from areas disturbed during construction. • Limit clearing and grading activities during the wet season. • Design road and turbine foundations and cut slopes in consultation with a professional geotechnical engineer • Avoid construction in unstable areas that can not be stabilized. • Design structural foundations and buildings in accordance with UBC requirements for seismic zone 2B. • Design drainage ditches and culverts for periods of snowmelt. • Include channel protection in steeper drainage ditches and channels.	*Additional Measures.* • Construct roads with 4 to 6 inch gravel surfacing where appropriate.	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Regularly monitor for erosion after construction, especially after a large rainfall or snowmelt event and take corrective action if needed.		
Significant Unavoidable Adverse Impacts	None expected	None expected	None expected
BOTANICAL RESOURCES:			
Affected Environment	• High-quality native bunchgrass communities dominate the Project site. • Relatively undisturbed by development or grazing activities. • No special status plants identified on site. • Relatively undisturbed cryptogram crust on the soil surface.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Intrusion of non-native vegetation. • Fragmentation of high-quality native bunchgrass communities. • Temporary disturbance of 6 hectares (15 acres) of rangeland pasture. • Temporary disturbance of 32 hectares (80 acres) of high-quality native, natural plant communities. • Permanent loss of 2 hectares (4 acres) of rangeland pasture. • Permanent loss of 18 hectares (44 acres) of high-quality native, natural plant communities. • Disturbance of cryptogram crust on soil surface.	Less than Proposed Action	Less than Proposed Action; on-going grazing and cultivation could result in loss of native plant communities.
Mitigation Measures	• Use and upgrade existing roads where feasible. • Route powerline and roads in common corridors where practical and feasible. • Locate construction staging areas to minimize disturbance to native bunchgrass communities. • Require preparation and use of a site access plan that limits traffic to pre-identified locations. • Limit the level of livestock use until disturbed areas have been revegetated and reestablished. • Prepare and implement a revegetation plan for temporarily disturbed areas. Implement immediately after impacts have occurred. • Limit clearing and grading activities during the wet season.	*Additional measures:* • Consolidate turbine and equipment foundations where feasible. • Flag environmentally sensitive areas and conduct ongoing monitoring during construction. • To the maximum extent feasible and in consultation with the WDFW, adjust Project design and powerline route to reduce fragmentation and avoid disturbance of high quality,	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Restore onsite rangeland areas with native, natural bunchgrass in coordination with appropriate agencies and restoration ecologists. • Implement a weed monitoring plan after completion of construction.	native natural plant communities. • Implement on-site or off-site preservation of native plant communities. • Revegetate disturbed soils with native plants, especially dominant species. • Revegetate with seed mixes free of noxious weeds and annually monitor until vegetation is reasonably established. • Avoid use of herbicides, except as reasonably necessary for weed control.	
Significant Unavoidable Adverse Impacts	• No evidence of successful restoration of native bunchgrass communities results in uncertainty regarding the effectiveness of restoration efforts. However, onsite or off-site preservation would mitigate the impacts.	Less than Proposed Action	None
HYDROLOGICAL RESOURCES:			
Affected Environment	• Moderately dry climate. • 5 seasonally flowing streams. • 6 stock watering ponds. • 14 swales draining into streams. • Some erosion along steep banks and where vegetation trampled by cattle.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Minor and temporary erosion and sedimentation to streams and ponds. • Increased stormwater runoff. • Potential contamination from leaks of lubricating and hydraulic fluids.	Less than Proposed Action	None
Mitigation Measures	• Provide roads with ditches and culverts sized to accommodate a 100-year storm. • Use and upgrade existing roads where feasible.	*Additional Measures:* • Design slab foundations with berms to reduce the potential	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Locate roads to reduce the amount of cut and fill required. • Revegetate all disturbed soils with native plants after construction. • Limit movement of equipment across stream channels and swales. • Implement and maintain erosion and sedimentation techniques throughout the construction period. • Revegetate all disturbed soils with native plants upon completion of construction. • Relocate substation outside of swale 9 or engineer erosion and sedimentation control methods to prevent erosion from impacting the downslope stream. • Locate construction staging areas, operations and maintenance building, and substation away from streams or swales. • Provide for lubrication and maintenance of construction equipment in contained areas with liquid-absorbing materials. • Provide liquid-absorbing pads under turbines. • Regularly inspect turbines for leakage and contain or cleanup any spills as necessary. • Prior to construction, develop an Erosion and Sediment Control Plan to comply with the requirements of the Dept. of Ecology's Baseline General Permit for Stormwater Discharge Associated with Construction.	for leakage of fluids and fuels to enter soil and water resources. • Regularly inspect fluid bearing equipment to detect and correct any leakage. • Restore temporary roads and staging areas to preconstruction grades within 1 month of their discontinuance of use.	
Significant Unavoidable Adverse Impacts	None expected.	None expected.	None expected
CULTURAL AND HISTORICAL:			
Affected Environment	• Columbia Hills cultural resources include sites from pre-historic Indian tribes to the early settlers of the 19th century. • Juniper Point qualifies for listing as a Traditional Cultural Property. • Ethnobotanical plant resources exist on site. • Survey discovered 75 isolated artifacts and 9 cultural or historical sites.	Same as Proposed Action	None expected
Environmental Consequences	• Temporary and permanent disturbance to ethnobotanical plants. • Reduced suitability of Juniper Point as a vision-questing site. • Potential disturbance of historical and cultural artifacts.	Less than Proposed Action	None
Mitigation Measures	• Monitor construction activities to ensure that flagged cultural	*Additional Measures:*	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	properties and other sensitive environmental resources are avoided. • Cease construction activities in the immediate vicinity of a site if any previously unidentified cultural resource properties are encountered during construction. • Ensure potentially eligible archaeological sites and isolates are identified, flagged, and avoided to the extent possible. • Determine eligibility for listing in NRHP of unavoidable sites. • Design and implement scientific data recovery when testing confirms an unavoidable site's NRHP eligibility.	• Provide for tribal appointed monitor during construction. • Locate construction staging areas to avoid archaeological sites potentially eligible for NRHP. • Provide cultural resource training to construction workers. • Required on-site or off-site preservation of native plant communities. • Revegetate all disturbed soils with native plants after construction. • Negotiate agreement with property owner to provide access to Yakama. • Develop Memorandum of Agreement with BPA, Yakama, SHPO, and ACHP. • Conduct additional cultural resources surveys of the off-site Project 115-kv powerline, and adjust location where feasible to avoid cultural sites potentially eligible for the NRHP.	
Significant Unavoidable Adverse Impacts	• None expected on archaeological resources if all mitigation is implemented. • Yakama likely to consider significant the unavoidable impacts to Juniper Point as a traditional cultural property.	Same as Proposed Action	None
AVIAN RESOURCES:			
Affected Environment	• Potential for 22 special-status species that could use or fly over the Project site.	Same as Proposed Action	Same as Proposed

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Bald Eagle (ESA and state threatened) • Peregrine Falcon (ESA and state endangered) • State endangered species (sandhill crane) • State candidate species (golden eagle, swainson's hawk, western bluebird, Lewis' woodpecker) • State monitor species (prairie falcon, turkey vulture) • Other raptors, waterfowl, and passerines.		Action
Environmental Consequences	• Potential for collision with wind turbines and overhead lines • Potential for electrocution. • Habitat loss. • Disturbance to foraging and breeding behavior. • Potential to alter avian use and behavior.	Less than Proposed Action	None
Mitigation Measures	• Use tubular towers to reduce raptor perching opportunities. • Reduce the potential for electrocution by designing the 24-kv and 115-kv transmission lines with raptor protection measures. • Conduct post-construction monitoring of avian impacts in consultation with the USFWS. • Implement accepted industry measures to reduce raptor electrocution and collision potential. • Increase wire visibility by using a minimum conductor wire size of 4/0. • Do not site above-ground powerline wires near wetlands or other waterfowl feeding or resting habitat.	*Additional Measures:* • Prior to commercial operation, develop and implement an Avian Injury and Mortality Plan with WDFW, USFWS, BPA, and Klickitat County. • Discontinue livestock grazing on site in consultation with property owner. • Mark guy wires with bird flight diverters. • Consolidate foundations for equipment and components of turbines. • Include design measures that would prevent small mammals from burrowing under foundations that are less than 2' deep. • Seal all conduits to prevent rodents from entering any equipment or facilities. • Implement a 1/2-mile no activity	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
		buffer around documented golden eagle nests, and no construction within one mile of active golden eagle nests from March 15 to July 15.	
Significant Unavoidable Adverse Impacts	• Some incidental avian mortality unavoidable. • Project would not jeopardize the continued existence of local avian populations.	Same as Proposed Action	None
WILDLIFE (NON-AVIAN):			
Affected Environment	• Transitional area supporting habitat and wildlife species from several regions. • WDFW designated Priority Habitats on site. • Site provides a diverse array of habitats and associated species. • Federal candidate species (bats, northern sagebrush lizard). • 9 state listed species assumed to be located on the site based on habitat associations, including the western gray squirrel. • Recreational species (upland game birds, Columbian blacktailed deer, other).	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Temporary disturbance during construction. • Permanent loss of nominal amount of habitat (approximately 5 percent of site). • Reduction in wildlife abundance. • Potential impacts to wildlife behavior during construction and operation.	Less than Proposed Action	None
Mitigation Measures	• Use and upgrade existing roads where feasible. • Locate roads to reduce the amount of cut and fill (grading) required. • Revegetate any disturbed areas that are not permanently occupied by Project features. • Route powerline and roads in common corridors where practical and feasible. • Mitigations identified in Botanical Resources also apply. • Where feasible, adjust road and powerline routes to avoid Oregon white oak habitat.	*Additional Measures:* • Retain mixed oak/conifer stands with mast producing trees and shrubs. • To the extent possible, avoid new road construction within 244 meters (800 feet) of occupied western gray squirrel nests. • Avoid general construction	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• 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-meter (400 foot) radius of known western gray squirrel nests. • To the extent feasible, retain conifers for 25 percent of the remaining canopy cover. • Avoid construction activity within 90 meters (300 feet) of any known western gray squirrel nest between May 15 and September 30.	activity within 122 meters (400 feet) of any occupied western gray squirrel nest between May 15 and September 30. • Avoid blasting or activities with similar noise levels within 396 meters (1,300 feet) between May 15 and September 30. • Include design measures that would prevent small mammals from burrowing under foundations that are less than 2' deep. • Seal all conduits to prevent rodents from entering any equipment or facilities. • Prohibit the use of rodenticides and pesticides.	
Significant Unavoidable Adverse Impacts	None expected.	None expected.	None
VISUAL QUALITY & AESTHETICS:			
Affected Environment	• Highly scenic, rural, and natural landscape. • Rugged and rolling terrain with views of distinctive mountains. • Columbia River Gorge, Columbia Aluminum smelter, John Day dam and bridge, railway facilities within viewshed. • Juniper Point is higher than most surrounding hills. • Communication facilities (microwaves, transmitters, etc.) on site.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Travelers can view site from SR-14, I-84, US-97. • Site visible from Stonehenge, Maryhill Museum, Maryhill State Park, Giles French Park. • Site visible from small communities in Oregon, Hoctor Rd., eastern end of Columbia River Gorge National Scenic Area. • Introduction of a distinct visual landmark to the region. • Visual resources of Project area would be industrial rather than	Less than Proposed Action	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	natural. • Visual impacts from wind facilities, buildings, and roads, primarily from closer ranges.		
Mitigation Measures	• Revegetate disturbed areas not permanently occupied by Project features. • Use and upgrade existing roads where feasible. • Locate roads to reduce the amount of cut and fill (grading) required. • Use similar types, sizes, and shapes of wind turbines. • Use moderately sized turbines. • Continue researching the use of non-reflective gel coats and use best efforts to install blades that are non-reflective. • Place wind turbines in orderly rows respective of land contours. • Evenly space turbines. • Use a consistent and neutral turbine color. • Return temporarily disturbed areas to preconstruction grades and reestablish native vegetation. • Store equipment and supplies in designated areas. • Fence and landscape around storage area. • Immediately repair, replace, or remove inoperative turbines. • Install underground transmission lines to and from the turbines. • Prepare and implement a Decommissioning Plan.	*Additional Measures:* • Coordinate turbine paint colors to be compatible with those proposed for the Washington Windplant #1. Turbine blade colors should be neutral unless otherwise required through consultation with the USFWS. • Consolidate foundations for equipment and components of turbines. • Locate construction staging areas to avoid areas that would be clearly visible from US-97, SR-14, and I-84. • Use non-reflective paints to reduce glare.	None
Significant Unavoidable Adverse Impacts	• Some viewers would find the Project visually displeasing.	Same as Proposed Action	None
LAND USE, RECREATION, SOCIOECONOMICS:			
Affected Environment	• Project site zoned Extensive Agriculture with Illumination Control Overlay. • Project site owned by Columbia Aluminum. • Current uses include limited grazing, microwave and radio communication facilities, and a natural gas pipeline. • Some recreation sites and resources in general vicinity of Project site.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Addition of wind facilities to existing land use. • 5% reduction in agricultural lands during the life of the Project.	Same as Proposed Action	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Conflicts with existing limited agricultural activities during construction; potential reduction in site's availability for grazing if restrictions are imposed to reduce likelihood of avian impacts (see Avian Resources). • Minor increase in local employment and purchase of goods and services during construction. • Minor increase in local personal income, payment of real estate and sales taxes, and payments to Columbia Aluminum. • Potential tourist attraction		
Mitigation Measures	• Mitigation measures for Botanical, Aesthetic, Noise, and Public Services also apply. • Flag guy wires to prevent conflicts with livestock grazing and agricultural activities. • Screen the Project substation. • Design and install turbine structures to fall below the 61-ineter (200 foot) requirement for lighting established by the FAA.	*Additional Measures:* • Coordinate with appropriate agencies and facilities 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. • Design any limited site lighting to conform with requirements of the Klickitat County Illumination Control Overlay Zone.	None
Significant Unavoidable Adverse Impacts	None expected	None expected	None
NOISE:			
Affected Environment	• Distant traffic noise from US-97, SR-14, I-84. • Intermittent man-made noise from trains, off road vehicles, farm equipment, & Hoctor Rd. traffic. • Wind is the dominant noise source and drowns out most background noises.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Construction noise. • Operational noise may exceed allowable nighttime levels at potential residential receptor adjacent to Project site.	Same as Proposed Action	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
Mitigation Measures	• Insulate nacelle and design gearbox to minimize noise. • Maintain sound levels at sensitive receptors that are less than the property's environmental designation for noise abatement. • If noise complaint received by the County, provide appropriate sound level measurements on the complainants property. • Reduce construction noise levels by turning off idling equipment, selecting the quietest effective setting for back-up alarms, confining construction activities to daytime hours in proximity to residences.	Same as Proposed Action	None
Significant Unavoidable Adverse Impacts	None expected.	None expected	
AIR QUALITY	**Proposed Action**	**Preferred Alternative**	**No Action Alternative**
Affected Environment	• Most significant air contaminants in the area are particulate (dust) emissions.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Fugitive dust during construction and operation. • No air quality permits required.	Same as Proposed Action	Same as Proposed Action
Mitigation Measures	• Use and upgrade existing roads where feasible. • Revegetate any disturbed areas that are not permanently occupied by Project features. • Cover unpaved roads with gravel or slag. • Vegetate low volume roads and disturbed areas. • Apply dust suppressants to unpaved road surfaces and disturbed areas. • Construct temporary wind fences around construction sites.	Same as Proposed Action	None
Significant Unavoidable Adverse Impacts	None expected	None expected	None
TRANSPORTATION:			
Affected Environment	• Regional transportation network is US-97, SR-14, and I-84. • Site access from Hoctor Road. • Existing network of paved and gravel roads serve site.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Temporary construction traffic volume increases:	Less than Proposed Action	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	US-97, south of Hoctor Rd. - 2% Hoctor Rd., east of US-97 - 39% Hoctor Rd., west of Willis Rd. 64% • Potential roadway damage to Hoctor Rd. • Potential conflict with scheduled Hoctor Rd. repair. • Potential traffic safety conflicts.		
Mitigation Measures	• Conduct a detailed assessment of the Hoctor Rd. roadway condition prior to commencement of construction. Following completion of construction, conduct a similar assessment to determine the amount of road damage caused by the construction vehicles and allocate costs as appropriate. • Schedule Project construction to avoid use of Hoctor Rd. during freeze/thaw cycles. • Coordinate routing of construction traffic and times with the Klickitat County Dept. of Public Services to reduce conflict with scheduled Hoctor Rd. repair. • Employ traffic safety precautions to warn of construction activity and merging traffic.	Same as Proposed Action	None
Significant Unavoidable Adverse Impacts	None expected	None expected	None
PUBLIC SERVICES & UTILITIES:			
Affected Environment	• Fire and medical aid, police service, communication services are available to site. • No existing utility corridors to the site.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Increased fire risk due to welding activities, equipment failure, smokers, etc. • High risk nature of heavy construction may increase the medical services required at the Project site. • Project security measures may delay emergency access to site. • Project may attract unauthorized visitors and create increased demand for police services to the site. • Potential interference with communication systems.	Same as Proposed Action	None
Mitigation Measures	• Provide locked gates onto the Project site and warning signs of high voltage equipment and buried cable..	Same as Proposed Action	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Enclose gears and moving parts to contain sparks. • Monitor operation of communications facilities and take corrective action as necessary. • Require water truck and chemical fire suppression materials on site during Project construction and welding operations. • Minimize or restrict high fire-risk activities during periods of high fire danger. • Provide Project staff with cellular phones to enable timely communication with emergency services. • Limit smoking to designated area. • Equip emergency service departments and vehicles with access to gates. • Provide fire extinguishers and shovels on construction vehicles and equipment. • Locate and flag the natural gas pipeline and limit construction in the immediate vicinity. • Locate turbines outside the line of site used by existing communications transmitters and receivers. • Remove all turbine structures and associated equipment that are permanently out of operation. • Restore lands in accordance with the County Decommissioning Plan. • Monitor the Project site for unauthorized use and provide additional security as appropriate.		
Significant Unavoidable Adverse Impacts	None expected.	None expected.	None
HEALTH & SAFETY RISKS:			
Affected Environment	• Underground natural gas pipeline.	Same as Proposed Action	Same as Proposed Action
Environmental Consequences	• Potential for worker injury during construction and operation. • Potential for electrical shock and fires. • Potential effects from electric and magnetic fields.	Less than Proposed Action	None
Mitigation Measures	• Install turbines designed with a fail-safe redundant braking system.	*Additional Measures:*	None

ELEMENT	Proposed Action	Preferred Alternative	No Action Alternative
	• Design turbine towers and foundations to survive wind speeds of 55 m/s at 9 meters (123 mph at 30 feet) above the ground surface. • Design and install all electrical equipment in compliance with national electrical safety codes and standards. • Equip the main access gates with locks and provide fencing and locks around the substation. • Post warning signs near high voltage equipment. • Locate the 115-kv overhead powerline at least 61 meters (200 feet) from the turbines. • Develop a Hazardous Materials Response Plan. • Maintain existing fencing and access gates around the Project site. • Develop and maintain an on-site health and safety plan. • Offer safety training to employees. • Assign safety officers to each shift to monitor construction activities and methods. • Ensure workers on each shift are first aid certified. • Provide an accessible onsite well stocked first aid kit and inform each worker of its location. • Conduct periodic safety meetings for construction and maintenance staff. • Follow specified fire hazard precautions.	• Provide locks and high voltage warning labels on all control cabinets and transformer cabinets.	
Significant Unavoidable Adverse Impacts	None expected.	None expected.	None

PART 1: PREFERRED ALTERNATIVE

Part 1 Preferred Alternative

1.1 Introduction

The Draft EIS evaluated the Proposed Action, the No Action Alternative, Alternative Energy Resources, and Alternative Sites/Proposals Submitted in Response to the BPA *RFP*. Klickitat County and BPA did not have a Preferred Alternative at the Draft EIS stage and therefore did not identify one in the statement. Based on comments received regarding impacts and mitigation measures, Klickitat County and BPA have now identified the Preferred Alternative as the Proposed Action along with incorporation of certain mitigation measures identified in the Draft EIS and Part 1 of this document. The following discussion describes the Preferred Alternative and significant unavoidable adverse impacts that could result from its implementation.

1.2 Description

1.2.1 Location of Project Features

To the maximum extent feasible given site topography, Project boundaries, the status of easements, Project economics, and safety considerations make adjustments to Project design and to the proposed powerline route after consultation in the field with the Washington Department of Fish and Wildlife (WDFW) that are designed to meet the following objectives:

- Reduce fragmentation and disturbance of shrub-steppe habitat
- Avoid disturbance to Oregon white oak habitat
- Avoid disturbance of Juniper Savannah habitat
- Where practical and feasible, route powerline and roads in common corridors to reduce the overall amount of site disturbance.
- Minimize or avoid, to the maximum extent feasible, disturbance to areas of high-quality Douglas' buckwheat/Sandberg's bluegrass plant community.

1.2.2 Additional Cultural Resources Surveys

Conduct additional Cultural Resources Surveys prior to construction, including:

- Precisely locate cultural sites and isolates on the Project site using property surveys or other means so that the final design of roads and the placement of the turbines and construction staging areas can avoid the identified sites and isolates where feasible. The cultural sites and isolates occupy a limited area and avoidance during construction appears to be feasible.
- Conduct additional cultural resources surveys of the off-site Project 115-kv powerline once the route is more precisely identified, and adjust locations to avoid any cultural sites potentially eligible for the National Register of Historic Places where feasible.

- Complete further testing of any sites potentially eligible for the National Register of Historic Places that prove to be unavoidable during final design, by a qualified archaeologist in consultation with the State Office of Archaeology and Historic Preservation (SHPO), to determine their eligibility for listing in the National Register of Historic Places and, if eligible, to identify appropriate mitigation measures such as avoidance or scientific data recovery consistent with the National Historic Preservation Act.

1.2.3 Hoctor Road Survey

Provide for a detailed assessment of the Hoctor Road roadway condition prior to construction. Determine the amount of road damage, if any, caused by construction vehicles and allocate the appropriate costs to the Applicant.

1.2.4 Environmental Protection Plans

1.2.4.1 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 and the Klickitat County Noxious Weed Control Board that shall become a condition of building permits and that, at a minimum, addresses the following:

- Stockpiling topsoils separately from other soils.
- Specifications for reseeding any areas disturbed during construction with seed 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 be incorporated into the Erosion and Sediment Control Plan discussed in Section 2.1.2 of the Draft EIS.
- Timing and application rates for seed mixes.
- Specifications for reseeding disturbed Bluebunch wheatgrass-Idaho fescue communities with seed mixes that include species native to those communities, especially dominant species.
- Coordination with KENETECH's Washington Windplant #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 activities to control noxious weeds, until restoration vegetation is reasonably established.
- Measures for addressing requests of the Klickitat County Weed Control Board Coordinator.
- Adequate facilities for cleaning of construction vehicles and equipment entering the Project site to control the entry of noxious weeds.

1.2.4.2 Construction Environmental Protection and Monitoring Plan

Prior to construction, develop a Construction Environmental Protection and Monitoring Plan in consultation with the 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 where feasible and appropriate, consistent with the provisions of Parts 1.2.1 and 1.2.2 of this document. Environmentally sensitive areas include:
  - High-quality native plant communities and priority habitats as described in Part 1.2.1 of this document.
  - Areas within 122 meters (400 feet) of any occupied western gray squirrel nest between May 15 and September 30 for general construction and within 400 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.
  - Areas within 400 meters (1,300 feet) of occupied red-tailed hawk nests from April through July.
  - Cultural sites and isolates potentially eligible for the National Register of Historic Places if final Project design confirms that they can be avoided.
  - Other cultural resources identified during the studies outlined in Part 1.2.2 of this document.
- Provisions for independent environmental monitoring during construction using Agency-approved environmental monitors, including a tribal monitor appointed by the Yakama Indian Nation, to ensure that identified environmentally and culturally-sensitive areas are avoided.
- Provisions for training construction workers on the importance of cultural properties to Native Americans, how to identify cultural properties, 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 Construction, and measures for protection of sensitive shrub-steppe habitats from encroachment from sidecast materials.
- Livestock exclusion, as necessary, from reseeded native grasslands in shrub-steppe habitat.

1.2.4.3 Operations Monitoring Plan

Prior to commercial operation, develop an Operations Monitoring Plan in consultation with WDFW, with results reported as part of the annual Conditional Use Permit review for the Project, that includes the following:

- Ongoing erosion monitoring of Project facilities, including roads, on a weekly basis and after substantial rainfall or snowmelt events.
- Visual inspection of all fluid-bearing equipment on at least a weekly basis to detect and correct any leakage.
- Monitoring the Project site for evidence of unauthorized use and access and provide additional security as appropriate.

1.2.4.4 Habitat Replacement/Mitigation Plan

Prior to commencement of commercial operations, develop a Habitat Replacement/Mitigation Plan in consultation with the WDFW addressing replacement through on-site or off-site preservation/enhancement of oak/oak-pine woodland and Douglas' buckwheat/Sandberg's bluegrass communities, with the goal of preserving similar quality and quantity (1:1) of those habitats lost through Project development.

1.2.4.5 Avian Injury and Mortality Monitoring Plan

Prior to commercial operation, develop an Avian Injury and Mortality Monitoring Plan in consultation with the USFWS, BPA, Klickitat County Planning Department, and WDFW. The goals of the Avian Injury and Mortality Monitoring Plan would include:

- standardized protocols for assessing avian mortality and promptly responding to the discovery of injured birds in order to improve their chances for survival;
- procedures for training personnel in reporting and providing timely incident reports to the USFWS, WDFW, BPA, and Klickitat County Planning Department; and
- procedures for evaluating incident report data on a periodic basis and reporting findings to the USFWS, WDFW, BPA, and Klickitat County Planning Department.

1.2.4.6 Decommissioning Plan

Prior to start of construction, provide a Decommissioning Plan for approval by the Klickitat County Planning Department detailing the circumstances and schedules under which individual turbines and associated equipment will be removed from the site, methods used to restore areas previously containing turbines, and a detailed budget for decommissioning the Project and restoring the overall Project site to a natural condition.

1.2.5 Additional Mitigation Measures

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

1.2.5.1 Design

- Upgrade and use existing roads where feasible rather than building new roads.
- Design roads with ditches and culverts sized to accommodate a 100-year storm.
- Locate roads along ridgelines, where feasible, to reduce the amount of cut and fill (grading) required.
- Provide a minimum 10 to 15-cm (4 to 6 inch) gravel surface on Project roads to reduce erosion.
- Provide design measures, to be approved by the Klickitat County Department of Public Services and WDFW, to prevent small mammals from burrowing under foundations wherever foundations are less than 2 feet deep. All conduits would be sealed to prevent rodents from entering any equipment or facilities.
- Where feasible, consolidated foundations for equipment and components of individual turbines to minimize aesthetic impacts and the amount of area potentially requiring decommissioning.
- Design road and turbine foundations and cut slopes in consultation with a professional geotechnical engineer. Avoid construction in areas determined by geotechnical studies and final design to contain unstable slopes that could not be adequately stabilized during construction or within one year of completion of the Project.
- 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.
- Design and install turbine structures to fall below the 61-meter (200 foot) requirement for lighting established by the Federal Aviation Administration. Design other limited site lighting, if any, to conform with requirements of the Klickitat County Illumination Control overlay zone.
- Locate turbines in strings to provide a more uniform looking development and to minimize aesthetic impacts.
- Precisely determine the location and frequency of potentially impacted communications transmitters and receivers when siting individual turbines to minimize potential signal interference. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.
- Coordinate turbine paint colors to be compatible with those proposed for Kenetech's Washington Windplant #1 Project. Turbine blade colors should be black or neutral except to the extent that colors and patterns may be required through consultation with the USFWS or WDFW.

- Use non-reflective paints to reduce glare.
- Design all overhead powerlines with raptor protection measures in accordance with the best practices contained in "Suggested Practices for Raptor Protection on Powerlines" (APLIC, draft 1995), and "Mitigating Bird Collisions with Powerlines: The State of the Art, 1994" (APLIC, 1994).
- Design turbine towers and foundations to survive the highest expected wind speeds on the site, plus an adequate safety margin.
- Design slab foundations with berms to reduce the potential for leakage of hydraulic fluids and fuels to enter soil and water resources.

.1.2.5.2 Construction

- Limit clearing and grading activities to the late spring through early fall period, subject to review and approval of the Klickitat County Building Official, to minimize erosion during construction. During all other periods, open soil areas must be stabilized through best management practices defined in the Erosion and Sediment Control Plan.
- Minimize grading disturbance to the maximum extent feasible considering the need to minimize disturbance to Priority Habitats and to 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 western gray squirrel 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 sites 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.
- 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 equipment.
  - Select the quietest effective setting for back-up alarms.
  - Confine construction activities to daytime hours in proximity to residences.

- Coordinate routing of Project construction traffic and travel times with the Klickitat County Public Services Department and with KENETECH's Washington Windplant #1 Project to reduce conflicts with construction work on Hoctor Road.
- To the extent economically feasible, schedule Project construction activities to avoid use of Hoctor Road during likely periods of freeze/thaw cycles.
- 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 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 District 7 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 and vehicles with gate keys or controls to electronic gates.
- Provide fire extinguishers and approved fire tools on vehicles and equipment used during construction.
- Restore temporary roads and staging areas to preconstruction grades within one month of their discontinuance of use.
- Restore all disturbed areas consistent with the Reseeding/Restoration/and Weed Management Plan developed for the Project.
- Prohibit use of pesticides and rodenticides. Avoid the use of herbicides except as reasonably necessary for weed control.
- Construct storage buildings containing petroleum-based lubricants above-ground with double walled containers and spill containment basins.[kpfl]

1.2.5.3 Operation

- Consult 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 interpretive signs at these facilities as allowed by the facilities' management.
- Provide liquid-absorbing pads under turbines, associated equipment and fluid vessels to contain or collect fluid spills during turbine servicing. Fluids that are spilled shall be cleaned immediately.
- Provide a clean looking facility free of debris and unused or broken down equipment by:
  - 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 operations consistent with the Operations Environmental Monitoring program developed for the Project.
- Monitor bird injuries and mortality and comply with response and reporting procedures consistent with the Avian Injury and Mortality Monitoring Plan.
- 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 are being exceeded due to Project equipment, Applicant shall, as requested by the County, be required to provide appropriate sound level measurements on the complainant's property, at Applicant's expense. In the event that Applicant does not respond within 48 hours of County request, County costs incurred in responding to complaints and monitoring/measuring sound levels shall be reimbursed by Applicant.
- During welding operations, have a readily accessible water truck and chemical fire suppression materials available on site to allow immediate fire response.
- Develop and implement a fire fighting plan in consultation with Fire District 7 that includes consideration of an annual fire drill, storage of fire fighting material on-site, and evacuation plans.
- 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 as approved by the SW Washington Health District.
- Provide for designated smoking areas on the Project area.
- Develop a safety plan for construction workers and employees, that includes procedures for responding to natural and medical emergencies and the handling, storage, or transportation of hazardous materials.
- Mark guy wires on turbine towers with bird flight diverters.
- Prepare a Spill Prevention Control and Countermeasures Plan ("SPCCP") pursuant to U.S. Environmental Protection Agency regulations at 40 C.F.R. Part 112 within six months of commercial operation and implement the SPCCP within 12 months of commercial operation.
- Provide all County emergency departments and vehicles with gate keys or controls to electronic gates.

1.2.6 Mitigation Proposed by the Applicant

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

- Reduce perching opportunities for raptors by using tubular rather than lattice towers.
- Minimize the potential for avian electrocution and collisions by designing all overhead powerlines with raptor protection measures in accordance with the best

practices contained in Suggested Practices for Raptor Protection on Powerlines (APLIC, draft 1995), and Mitigating Bird Collisions with Powerlines: The State of the Art, 1994 (APLIC, 1994).

- Installing turbines designed with a fail-safe redundant braking system to protect against loss of control due to excessive speed.
- Designing turbine towers and foundations to survive wind speeds of 55 m/s at 9 meters (123 mph at 30 feet) above the ground surface.
- Enclosing gears and moving parts to contain sparks.
- Designing and installing all electrical equipment 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).
- Providing locks and high voltage warning labels on all control cabinets and transformer cabinets.
- Fencing and locking the Project substation and providing warning signs about the presence of high voltage equipment. A sign at the substation entrance shall indicate emergency contact information.
- Provide locked gates onto the Project site. Sign to warn of high voltage equipment and buried cable. Signs shall be placed at locked gates indicating emergency contact information.
- Locating the 115-kv overhead powerline at least 61 meters (200 feet) from the turbines so that cranes working on the turbines will be a safe distance from the powerlines.
- Installing underground communication and transmission lines where economical and feasible.
- Revegetating disturbed areas not permanently occupied by Project features.
- Locating turbines in strings to provide a more uniform-looking development.
- Continue researching the use of non-reflective gel coats and use best efforts to install turbine blades that are non-reflective.
- Use neutral colored paint to blend with the landscape background.
- Reduce the amount of road construction by using existing roads where feasible.
- Locate roads to reduce the amount of cut and fill (grading) required.

PART 2: CORRECTION AND MODIFICATIONS TO THE DRAFT EIS

Part 2 Corrections and Modifications to the Draft EIS

2.1 Introduction

This part of the Final EIS corrects and modifies the text of the Draft EIS based on comments received. Deletions are shown in "strikeout" while additions are indicated by a double underline.

2.2 Corrections and Modifications

2.2.1 Changes to Summary

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

2.2.2 Changes to Chapter 1 Alternatives Including the Proposed Action

Add the following item to Section 1.2.6, Mitigation Included in the Project Proposal - Bird Protection:

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

Modify Section 1.2.6.2, Mitigation Included in the Project Proposal - Safety Measures, final bulleted item as follows:

- Locating the 115-kv 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.

Replace Section 1.2.6.3, Mitigation Included in the Project Proposal - Aesthetics, first bulleted item with the following:

- Continue researching the use of non-reflective gel coats and use best efforts to install turbine blades that are non-reflective.

Insert the following section after Section 1.6 at the end of Chapter 1 -- Alternatives Including the Proposed Action:

1.7 Timing of Possible Approval (Short-term Uses vs. Long-term Productivity/Irreversible/Irretrievable Commitments of Resources)

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 CFR §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 the landowner. The Project would utilize wind, a renewable resource, for power generation and would not result in the irreversible or irretrievable commitment of resources because 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 Project consideration due to the changing competitive utility market which may affect BPA's operations. If deferred, BPA and CARES would not have the opportunity to test the ability of wind energy to provide a reliable, economical, and environmentally acceptable energy resource in the region. If BPA misses this opportunity to develop experience with wind energy, future energy resource acquisitions may favor fossil fuel generating resources with comparatively greater environmental impacts on a per-MW basis. The CARES' member utilities would also miss the opportunity to gain experience with wind as a generating resource. Given the relatively low level of expected impacts that may result from construction and operation of the Project along with the mitigation measures identified in Part 1 of this document, deferring Project approval until additional avian studies are conducted does not seem warranted.

2.2.3 Changes to Chapter 2 Affected Environment, Environmental Consequences, and Mitigation Measures

2.1 Earth and Geology

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

There are currently 32 rock, 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 from 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.

Make the following modifications to Section 2.1.4.2, No Action, third and fourth sentences:

However, impacts on earth resources associated with ongoing grazing and farming activities would continue. These impacts would include wind and water erosion associated with working soil for cultivation and with loss of vegetation on areas that have historically been heavily grazed.

2.2 Botanical

Add the following mitigation measures at Section 2.2.4., Proposed Action - Mitigation Measures, following the seventh bulleted item:

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

9. To the extent feasible, design the Project to combine foundation pads of the various structures to reduce the total area of the Project footprint.

10. Coordinate with the WDFW to delineate and flag high-quality shrub-steppe habitat on the Project site, disallowing use for construction staging.

11. Develop an erosion and sediment control plan to protect shrub-steppe habitat from encroachment from sidecast materials.

12. Develop measures for addressing requirements of the Klickitat County weed coordinator.

13. A noxious weed management plan would be developed for the Project site and reviewed by the Washington Noxious Weed Control Board and the Klickitat County Noxious Weed Control Board. The Noxious Weed Control Board would be consulted and involved to make sure that all feasible measures are taken to control the introduction and spread of noxious weeds or other potentially hazardous plants on the Project site by construction equipment.

2.3 Hydrological Resources

Make the following modifications to Section 2.3.3.1, Proposed Action - Environmental Consequences, last paragraph:

The proposed Project would not result in significant depletion or changes to recharge of the groundwater supply. No significant environmental impacts are anticipated to groundwater due to operation of the Project. However, there is some chance that lubricating and hydraulic fluids could leak from the turbine nacelle during certain types of equipment failure. Any spills of lubricating or hydraulic fluids from the nacelle would likely pool on top of the turbine's concrete slab foundation and generally would not be expected to contaminate soils, surface water, or groundwater resources.

Make the following modifications to Section 2.3.3.2, 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 could also continue under the Proposed Action and alternatives, although one potential mitigation measure to reduce avian impacts would involve discontinuing grazing. See Section 2.5.

2.4 Cultural and Historical Resources

Make the following modification to Section 2.4.1, Cultural Resources - Studies and Coordination, fifth 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 2.4.3, Affected Environment - Ethnography, first paragraph, first and third sentences:

Ethnographic bands that utilized the Columbia Hills ~~spoke the Sahaptin language~~ may have included ~~individual~~ Sk+in, 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.

Modify the discussion of Traditional Cultural Properties in Section 2.4.3 with the following:

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 provided notification of the proposed Project to potentially affected Tribes and requested scoping comments. No scoping comments were received. However, BPA and the County provided an extended comment period to accommodate the needs of the YIN. The County and BPA have sought oral history information from the YIN to determine if any National Register-eligible traditional cultural properties might be present in the Columbia Hills area. (Such information includes site location, type of use, and its cultural importance.) ~~As of January 11, 1995,~~ YIN staff ~~had~~ conducted and taped oral history interviews with ~~eight~~ nine tribal elders who have ties to and knowledge of the Columbia Hills area. These

interviews were conducted partially in English and partially in native language. Although translated transcriptions are not yet available, a portion of the tapes were reviewed as part of the studies conducted for this Project. YIN staff do not know when translations of taped information will be available, although they stated that they would produce a report on their study by June 30, 1995. The protocol for collecting the data from which the following information is derived accords with Yakama cultural practice.

Information on the Columbia Hills area available from consultation with the YIN ~~to date~~ and from review of oral history tapes indicates the area's ethnographic use included plant gathering ~~and,~~ hunting, travel, ~~and~~ camping, and vision questing. Because of this use, YIN staff have indicated that burial sites may be located in the Columbia Hills area. Landforms in the Columbia Hills form part of the tribal landscape with importance to Yakama Indians. The Columbia Hills area includes habitat for eagles which are part of the native religion. Elders stated that the ridge connects the area of the Rock Creek longhouse on the east to the Lyle area on the west. YIN staff have indicated that Juniper Point is associated with legend and vision quest use in the past. They have also indicated that Skinpum Point, located west of the Project site and US-97, is a legend-associated area with traditional cultural value for ceremonial activities. The Yakama say that when a mythical flood killed almost all of the animals and people, Skinpum Point formed a small island where some animals and people could shelter. Elders say they have seen the remains of logs that washed up on the high slopes of the ridge. 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-Eve" lies to the north of the Columbia Hills. 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 YIN The original Rock Creek Village site is considered sacred by the YIN because it was associated with an Indian prophet. The long house at Rock Creek is currently used for religious practices.

YIN members have stated that their 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~~ would 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 Project that has been specifically and consistently identified by the Yakama elders interviewed. ~~Skinpum Point and Juniper Point do not appear~~

~~to be linked by Yakama legend. Thus,~~ The information ~~gathered~~ reviewed to date does not suggest a distinct cultural landscape that would include the Project site and that would be eligible for listing in the National Register. The YIN, however, likely consider all of the aboriginal territory as a cultural landscape.

Make the following modification to Section 2.4.3, 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 2.4.3, Affected Environment - Ethnobotany, last sentence of the first paragraph:

The property owner has indicated that they do not have arrangements or agreements with Native American individuals or groups to allow access to private lands for the gathering of plants, and have not observed root digging on their lands in recent years.

Add the following paragraph to Section 2.4.3, 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.

Replace the last paragraph of Section 2.4.4.1, Proposed Action - Environmental Consequences - Proposed Action with:

Traditional Cultural Properties

As discussed in Section 2.4.3, Juniper Point 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. Juniper Point's character-defining features as a traditional cultural property include use as a spirit-questing site, where

seeing views in all directions and receiving messages from the spirits were important, and the elders' have stated their opposition to the Project. Construction and operation of the proposed Columbia Wind Farm #1 would result in changes to Juniper Point and would alter views from the point. 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 adversely impact the traditional cultural value of Juniper Point to the Yakama by altering its potential suitability as a vision-questing site.

Replace the first paragraph of Section 2.4.5, Mitigation Measures, with:

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 because archaeological properties are fragile and cannot be replaced. For archaeological deposits, avoidance is preferred over scientific data recovery because it is impractical to recover all possible data from such sites. While no direct mitigation measures for adverse Project effects on the Juniper Point Traditional Cultural Property appear feasible or acceptable to the Yakama elders, some compensatory measures might be appropriate. Although the Yakama do not have access to Project land for traditional activities, they desire such access. The negotiation of access agreements on some part of Project land might facilitate the preservation of traditional cultural activities. Depending upon the condition of the land, some restoration of a wetland area or native vegetation also might be desirable. In addition, the provision of some funding to the Yakama Cultural Resources Program might assist its work preserving and documenting traditional activities associated with the Rock Creek longhouse and Columbia Hills area.

Add the following mitigation measures to Section 2.4.5, Mitigation Measures, following item 5:

- Condition building permits upon appointment of County-approved environmental monitor during construction and a tribal monitor appointed by the Yakama Indian Nation to ensure that identified archaeological sites are flagged and avoided.

- Condition building permits to require training of construction workers on the importance of cultural properties to Native Americans, how to identify cultural properties, the need to avoid cultural properties and procedures to follow if previously unidentified cultural properties, including Indian graves, are encountered during construction.

- Continue consultation with the Yakama Indian Nation to identify any reasonable and feasible measures that are acceptable to them to minimize or mitigate adverse effects on Juniper Point as a traditional cultural property.

- Coordinate development of a Memorandum of Agreement with the National Historic Preservation Advisory Council.

Add the following discussion as Section 2.4.6, Cultural Resources - Significant Unavoidable Adverse Impacts:

Significant unavoidable adverse impacts on archaeological resources would not be expected to result from development of the Proposed Action if the mitigation identified above (avoidance, monitoring, training, further testing, and scientific data recovery) was implemented. Impacts on Juniper Point as a traditional cultural property would likely be considered significant by the Yakama Indian Nation.

2.5 Avian Resources

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

The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act contain prohibitions on taking individuals of protected species and 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.

The USFWS may recommend 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, 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, Affected Environment - 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, Affected Environment, before **Western Bluebirds**:*

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 to Section 2.5.4.1, Environmental Consequences - Proposed Action - Other Special Status Species, following the third paragraph:

Lewis' woodpeckers were observed to be fairly common within and near oak and oak/pine woodlands on the Project site and were also observed flying in rangeland and other open habitats. 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 and localized population impacts.

Add the following paragraph to Section 2.5.5, Mitigation Measures - Collision with Wind Turbines:

Implement a 1/2-mile no activity buffer around documented golden eagle nests, and no construction within one mile of active golden eagle nests from March 15 to July 15.

Add the following at the end of Section 2.5.5, Mitigation Measures:

General
Discontinue livestock grazing on site to allow greater vegetation cover for the raptor prey base in consultation with the property owner.

Provide reasonable and feasible design measures, to be approved by the Klickitat County Department of Public Services and WDFW, to prevent small mammals from burrowing under turbine foundations. All conduits must be sealed to prevent rodents from entering any equipment or facilities.

2.6 Wildlife (Non-Avian)

Add the following into Section 2.6.4.1, Environmental Consequences - Proposed Action - 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 2.6.4.1, Proposed Action - Environmental Consequences - Common Non-Avian Wildlife Species, following the last paragraph:

In addition, slab foundations may attract rodents and other small animals that are prone to burrow under such structures. 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 2.6.4.1, Environmental Consequences - Proposed Action - Special Status Species, first paragraph, first sentence:

The projected loss of less than 0.2 hectares (0.4 acres) of oak and oak/pine woodlands would cause a minor reduction in local on-site habitat for western gray squirrels, which is a state threatened species.

Add the following mitigation measures to Section 2.6.5, Mitigation Measures:

- Retain mixed oak/conifer stands with mast producing trees and shrubs.
- To the extent possible, avoid new road construction within 244 meters (800 feet) of occupied western gray squirrel nests.
- Avoid general construction activity within 122 meters (400 feet) of any occupied western gray squirrel nest between May 15 and September 30, and avoid blasting or activities with similar noise levels within 400 meters (1,300 feet) between May 15 and September 30.

2.7 Visual Quality and Aesthetics

Make the following to modification to Section 2.7.4.1, Environmental Consequences, Proposed Action - Impacts to Visual Resources of the Project Area, third paragraph:

The overall visual character of the Project site would change dramatically due to the intermingling of manmade elements into the natural vegetation on the site. Onsite views become mixed in character as wind turbines are placed into the rural rangeland setting. It should be noted that actual wind turbines may contrast more against the landscape than is depicted in the black and white reproductions included in this document. It should also be noted that movement of turbine blades would attract the eye and cause the turbines to stand out more in the overall landscape than can be depicted in the photosimulations. Small roads leading to individual turbines are not shown in these photosimulations but could be slightly visible from some locations. In addition, during the first few years following construction of new roads, road cuts and disturbed areas would be more visible than depicted until vegetation is reestablished over disturbed areas.

Add the following to Section 2.7.4.2, 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.

2.8 Land Use, Recreation, and Socioeconomics

Add the following after the last paragraph of Section 2.8.4.1, Environmental Consequences - Socioeconomics:

Because renewables use indigenous resources, labor and supplies, much of the investment remains in the regional economy.

Make the following modification to the next to the last sentence of Section 2.8.5, 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 site lighting must conform to the Klickitat County Illumination Control Overlay Zone.

2.12 Public Services and Utilities

Replace Table 2.24, Communication Systems On Juniper Point with the following Table:

TABLE 2.24
Communication Systems on or near Juniper Point

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 2.25:

TABLE 2.25
Potentially Affected Communication Systems

Owner/Operator	Location
Klickitat County Rural Fire District #7	Juniper Point
Klickitat County Sheriff's Department	Juniper Point
Klickitat County Public Utility District	Juniper Point
BATS Towing	Juniper Point
Cellular One	Luna Point and Haystack Butte

Add the following paragraph to Section 2.12.3.1, Environmental Consequences - Communication System, following Table 2.25:

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 2.12.4, Mitigation Measures, fifth bulleted item:

- Equip all emergency service departments and vehicles with access to ~~electronic~~ gates.

Make the following modifications to Section 2.12.4, Mitigation Measures, eighth bulleted item:

- Precisely determine the location and frequency of potentially impacted communications transmitter and receivers when siting individual turbines in turbine strings to guard against potential signal line-of-sight interference. Required clearances between turbines and signals should be determined using methods generally accepted by the communications industry.

2.2.4 Changes to Chapter 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

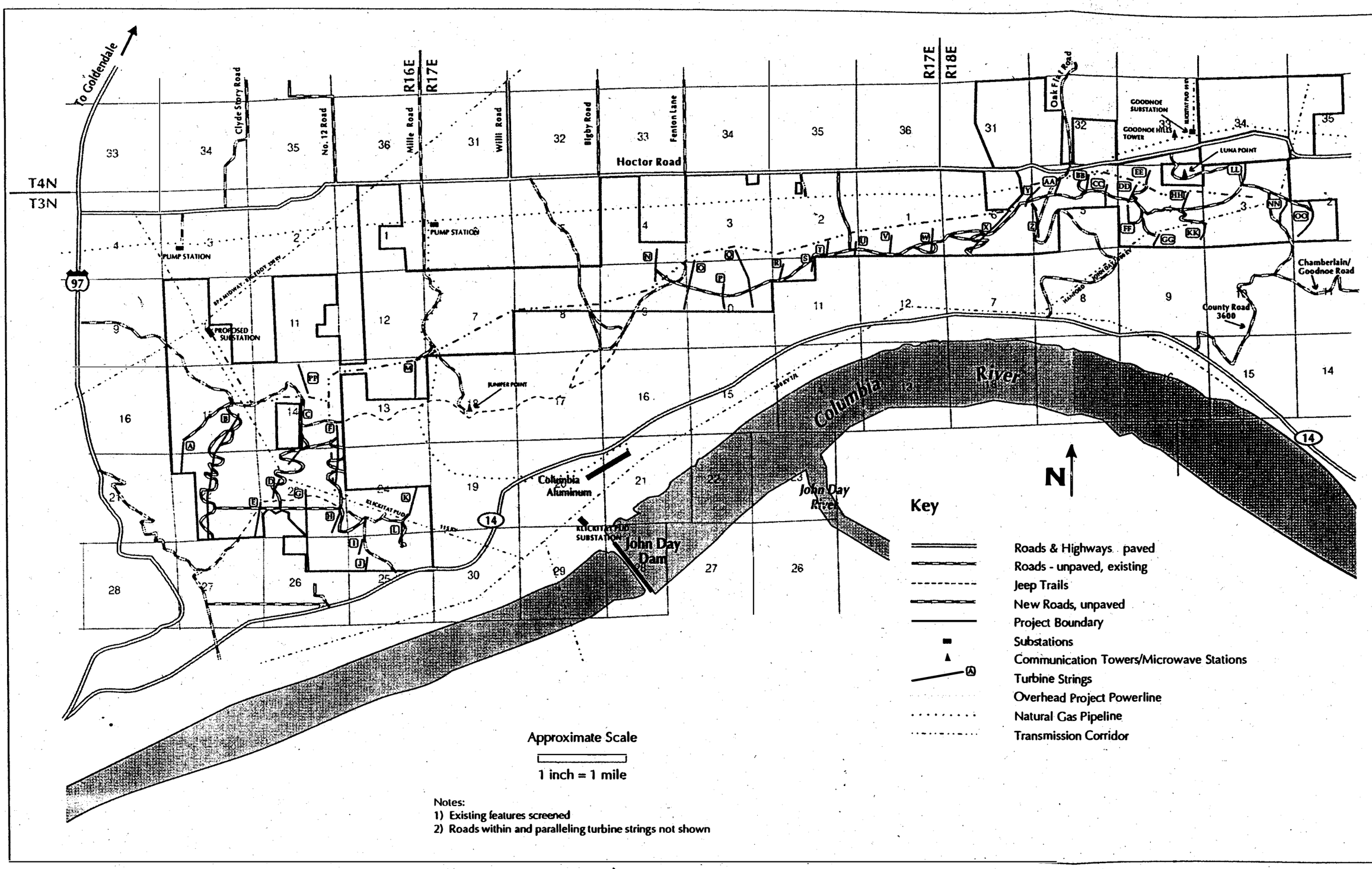
1 Assumes 30-meter (100-foot) disturbance corridor along turbine strings except where steep terrain dictates the use of road switchbacks. Secondary roads along turbine strings are about 4 meters (12 feet) wide plus associated drainage ditches.

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

Replace Figure 3.1 with Figure F.1 to show the modified Kenetech 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.



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

Figure F.1 — Proposed Site Development

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 the 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 (5 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.

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-two 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. These sites could potentially be adversely impacted by the proposed projects. Six cairns could also be potentially affected.

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

It appears that nine of the 11 cultural resource sites located on the KENETECH Project site could be avoided through minor adjustments to features locations within turbine strings. Cairns could also be avoided.

Consultation with the Yakama Indian Nation indicates that Juniper Point, on the CARES site, ~~might qualify~~ qualifies for listing as a traditional cultural property due to its importance to the Yakama for plant gathering, wildlife, and vision questing. The CARES Project would directly impact Juniper Point as a traditional cultural property by placing Project facilities 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. This would affect its potential suitability, in the view of the Yakama, for vision quests. It should be noted, however, that the Yakama do not now have access to Juniper Point. ~~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.~~ Consultation to date has revealed no other potentially eligible 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.

2.2.5 Changes to Chapter 5 References

Add the following reference:

Renewable Northwest Project, (draft April 7, 1995), "A Summary of 1991 US Electric Utility Air Emissions from Fossil-Fuel Combustion."

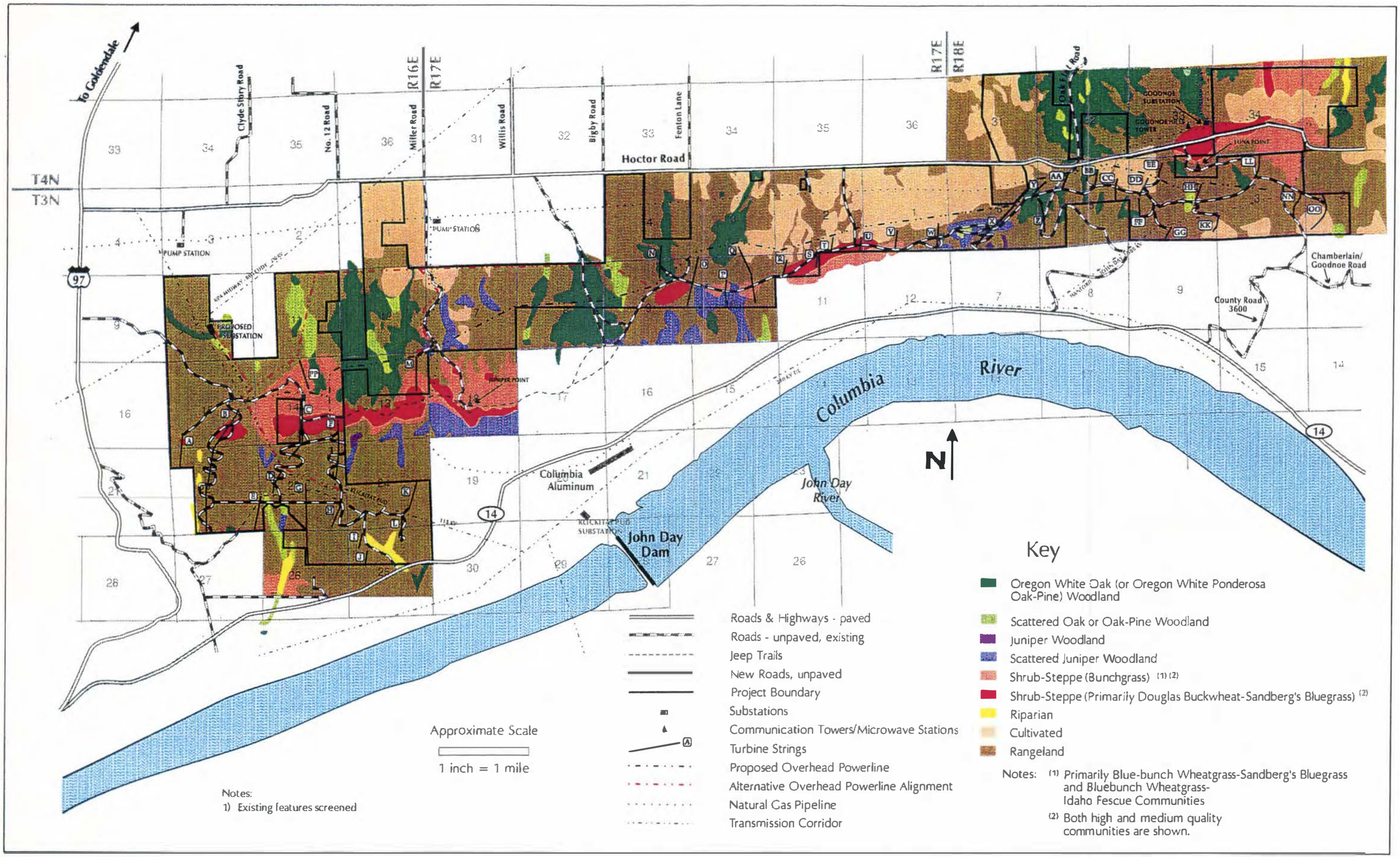


Figure F.4 — Plant Communities/Habitat Map

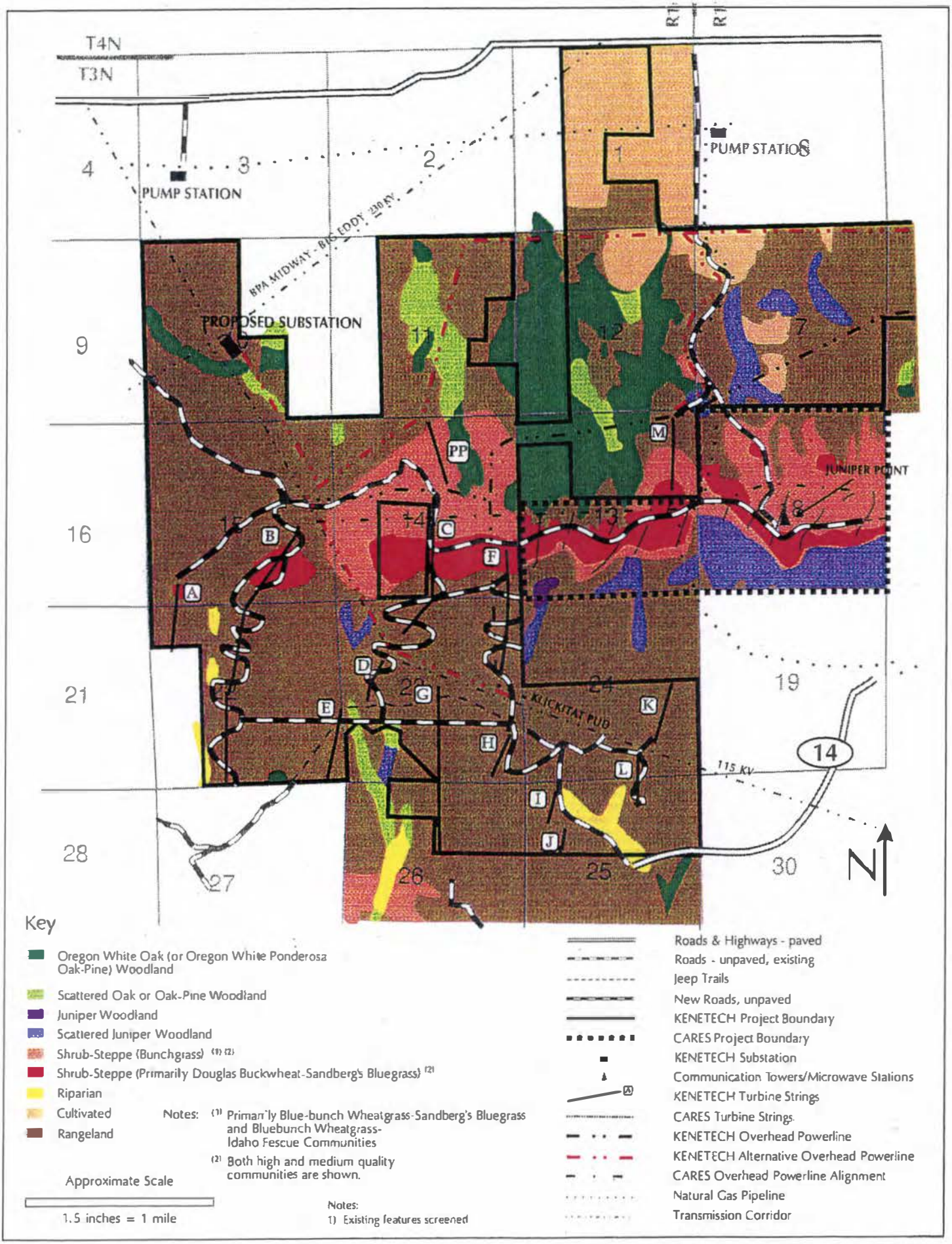


Figure F.5 — Cumulative Impacts to Western Habitat Complex

PART 3: COMMENTS AND RESPONSES

Part 3 Comments and Responses

3.1 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; 3) the testimony transcript and specific responses to that testimony; and 4) meeting notes from a field trip with Yakama Indian Nation representatives and responses to comments made during that trip. General responses address issues that were raised by several commentors. In some cases, responses to specific comments cross-reference the general responses.

3.2 General Responses

3.2.1 General Response No. 1 - "Fast Tracking"

Some commentors asserted or suggested that approvals (Conditional Use Permit from Klickitat County and Power Purchase Agreement from BPA) for the proposed Columbia Wind Farm 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 preliminary environmental review and reconnaissance and continuing through over a year's worth of detailed site-specific studies of avian use. These studies were designed to provide sufficient information for the permitting agencies to decide whether to issue and, if so, how to condition the permits and approvals required for Project construction. The lead agencies believe that the studies conducted to date provide adequate information to (1) evaluate and, (2) where appropriate, mitigate adverse environmental effects. The Preferred Alternative, described in Part 1 of this document, would require all reasonable and appropriate mitigation measures be applied to the Project. (See also General Response Nos. 2 and 10.)

3.2.2 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 wind energy development throughout the lower Columbia River region or the Pacific Northwest and/or to develop and evaluate siting criteria before permitting the Project 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.

The lead agencies agree that there may be substantial regional benefits to evaluating and adopting wind energy siting standards on a regional basis. The Project 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 Project 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 wind energy facilities, particularly on birds, was needed as part of the environmental review of the Proposed Action. Commentors differed in the recommended scope and geographic extent of a regional study, but most were concerned that development of the Project would induce similar wind energy 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 wind energy projects in addition to the Columbia Wind Farm No. 1 and the KENETECH Washington Windplant 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.

There is no reason given for the belief by several commentors that the CARES Columbia Wind Farm No. 1 and the KENETECH Washington Windplant 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 Project.

The environmental review of the Columbia Wind Farm No. 1 has been site-specific, including extensive on-site surveys of avian use and migrations, cultural resources, soils and riparian areas, plants and wildlife habitat, and aesthetics. Off-site studies were included where appropriate. For example, Project avian studies included off-site evaluations of certain breeding raptors to determine whether the site is within the home range of nest sites. Evaluation of aesthetics from off-site locations were also included. Finally, this EIS also considered available environmental information on Rattlesnake Mountain, another site previously considered for wind energy development. Similar site-specific studies likely would be required for any other wind energy project with a similar or greater scope of potential environmental impacts. The NEPA/SEPA EISs for the Columbia Wind Farm No. 1 and the KENETECH Washington Windplant No. 1 proposals could not substitute for site-specific environmental review of other wind energy proposals.

In determining the appropriate scope for the study of cumulative impacts of the Columbia Wind Farm #1 and the KENETECH Washington Windplant #1, the lead agencies considered that no other applications for land use approvals for wind energy proposals were pending. Another wind

developer, Zond, does have a permit application for the 7-Mile Hill Wind Energy Project held in abeyance by Wasco County, Oregon. Zond has not initiated the avian studies required by Wasco County, 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 with any utilities that have solicited proposals in recent years. The lead agencies have determined that the 7-Mile Hill Wind Energy Project is too speculative to be considered in a cumulative impacts analysis with the Columbia Hills wind energy proposals. Furthermore, 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, other wind energy development proposals also are considered too speculative to be included in a cumulative impacts analysis with the Columbia Hills wind energy proposals.

The lead agencies believe it is not reasonable or feasible to study the potential impacts of wind energy proposals that are speculative or outside the influence area of the Project site. Despite the location of other areas in the region that may have sufficient wind resources to consider siting wind energy facilities, these areas have not been evaluated in this EIS because the development is considered too speculative or remote for the meaningful analysis of cumulative impacts.

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 energy resource types and the cumulative effects of adding these resources to the existing Federal 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.

BPA is not promoting a wind energy development program for the region that requires a regional programmatic study of avian use and migration. Only two demonstration projects are being considered by BPA -- 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 reviewing its generation and acquisition resource portfolio, including the wind energy demonstration projects, to ensure that they are cost effective and necessary. It is unlikely at this time that BPA would participate in any additional wind demonstration projects, and BPA is not actively pursuing the acquisition of any new generating resources.

The lead agencies agree that a regional avian study could be useful as a management tool for siting of wind energy facilities. A basic understanding of avian use and migration patterns throughout the

Columbia River basin or throughout the Pacific Northwest would generally benefit the public as well as provide valuable information to wind developers and siting agencies. The avian studies conducted for the Columbia Wind Farm #1 and the Kenetech Washington Windplant #1 could contribute data to a regional avian study if one is undertaken. State and federal wildlife and siting agencies, energy developers, and/or environmental organizations could work collaboratively to initiate and fund the appropriate studies.

3.2.3 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 to execute an agreement to purchase electricity from the Project. SEPA places a similar responsibility on Klickitat County in its evaluation of the Conditional Use Permit application. The lead agencies have used the environmental review process to identify appropriate measures to "restore and enhance environmental quality and avoid or minimize adverse environmental effects" and will fully consider all the information in the Final EIS prior to making decisions.

3.2.4 General Response No. 4 - Tradeoffs Between the Impacts and Benefits of Wind Energy 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 environmental 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 wind development at the Columbia Hills area be limited to only a portion of the total area proposed until further monitoring of avian usage and mortality is undertaken.

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 less competitive in the market for power resources. The ability of Northwest utilities to purchase wind energy in place of cheaper forms of power that have greater environmental impacts could be delayed or disabled.

3.2.5 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 (YIN) 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. BPA has submitted a draft Memorandum of Agreement for review and approval by the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and the YIN to negotiate Project stipulations that would take into account the effects of the Project on cultural resources.

The Columbia Wind Farm No. 1 would place development on Juniper Point itself and Kenetech's Washington Windplant No. 1 would develop lands adjacent to Juniper Point. From Juniper Point, turbine strings would be visible to the north, northeast, and southwest. Because vision questing involved views in the four cardinal directions, both proposed wind projects would adversely affect Juniper Point as a suitable site for vision quests from the YIN's perspective. The Yakama believe that the spiritual quality of the place would be degraded and that the wind energy projects would alter the traditional cultural value of Juniper Point. Thus, this document concludes that the Columbia Wind Farm No. 1 would have a significant unavoidable impact on Juniper Point as a traditional cultural property.

It should be noted, however, that development currently exists on Juniper Point and that views toward the Columbia River now include development features such as the John Day Dam and the Columbia Aluminum plant. Further, the Yakama currently do not have access to Juniper Point. The Project has a finite lifetime and mitigation identified in the EIS calls for the wind farm 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.

Consultation with the 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.

3.2.6 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.

Table 3.1 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 CARES and KENETECH 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.
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,	Enclose additional copy of cultural resources

Date of Contact	Type of Contact	Participants	Subject
		CTUIR	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.
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.
April 26, 1995	Field visit/meeting	Florence Aguilar, Russell Billy, Sharon Hill, Fred Ike, Sr., Sandy Kiona, Gordon	Discussing YIN traditional cultural uses of the Columbia Hills area and YIN concerns about

Date of Contact	Type of Contact	Participants	Subject
		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	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.

3.2.7 General Response No. 7 - Indian Treaty Reserved Rights

The YIN 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 YIN'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 YIN also claims sovereignty over plant and animal resources, water, minerals, and other things necessary to preserve and maintain a traditional way of life. The lead agencies recognize that the Proposed Action would involve uses of the Project site which are incompatible with some traditional uses of the Project area and that YIN elders regard this 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 Preferred Alternative and the No Action Alternative, denial of access to Native Americans could continue as a privilege of property ownership by non-Indians.

3.2.8 General Response No. 8 - Priority Habitats and Species

Several commentors to 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 considered Priority Habitats and Species in the environmental review process and field studies were conducted to identify the type and distribution of Priority Habitats and Species on the Project site. Mitigation measures to reduce impacts to Priority Habitats were developed and identified in Section 2.2.4 of the Draft EIS and amended in Part 2 of this document. Of the 345 hectare (852 acre) area being considered for development, approximately 82 percent (225 hectares, 556 acres) of the existing 275 hectares (680 acres) of Priority Habitats would be preserved. The Preferred Alternative, discussed in Part

1 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." Recommendations calling for complete protection are difficult to follow within the realities of project planning because some impacts are unavoidable. Losses of Priority Habitats, which are advisory and not protected by law, may be unavoidable but can often be minimized or reduced through the application of appropriate mitigation measures.

Oak woodlands are a relatively minor component of the area being considered for development. Of the 2.4 hectares (6 acres) present on the Project site (less than 1 percent of the site), 0.8 acres (13 percent) would be the maximum amount disturbed. Opportunities for avoiding more oak woodlands could be pursued in cooperation with the WDFW during the final siting stage of the Project.

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 juniper is present on portions of the Project site and some juniper woodlands were mapped east of the Project site as part of the KENETECH Washington Windplant # 1 EIS. No areas containing juniper woodland would be affected by the proposed Project.

Shrub-steppe habitats were identified and could be avoided to the extent practical through the application of appropriate mitigation measures. Of the 203 hectares (502 acres) of shrub-steppe present on the Project site, 153 hectares (379 acres) would not be altered by the Project (75 percent). Precisely locating the proposed powerline to avoid Priority Habitats would reduce the amount of shrub-steppe habitat disturbed by the Project.

No riparian habitat would be altered by the Project. Mitigation measures outlined under Section 2.1 (Earth and Geology) and Section 2.2 (Botanical Resources) of the Draft EIS and amended in Part 2 of this document would serve to further protect riparian areas.

Priority Species were identified in Tables 2.8 (page 2-44) and 2.13 (page 2-60) of the Draft EIS. Twelve non-avian wildlife species were found to be on the site, including western gray squirrel, a state-threatened species. The mitigation measures outlined in Section 2.6.5 of the Draft EIS and amended in Part 2 of this document describe the measures recommended by the WDFW during the consultations for this Project for protecting western gray squirrel.

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 and mitigation measures for these species are described in the Draft EIS, Sections 2.5.4

and 2.5.5, beginning on page 2-47. The Draft EIS concluded that the Project would not jeopardize the continued existence of the local bald eagle and peregrine falcon populations. The USFWS Biological Opinion is expected to concur with this conclusion.

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 primary study area (which includes both the CARES and KENETECH Project sites) 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 2 of this document, certain modifications and additions to these mitigation measures have been made in response to WDFW comments on the Draft EIS.

3.2.9 General Response No. 9 Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act and Their Relationship to the Proposed Action

The Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act contain provisions, enforceable by federal agencies including the USFWS prohibiting the taking or killing of individuals of protected species of birds, including eagles, peregrine falcons, and other migrating birds. Potential violations of one or more of these laws could be reported to the USFWS and could lead to an investigation and response from USFWS.

The Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act prohibit the taking of individuals of certain species and were enacted primarily 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. The USFWS issued an April 28, 1994 memorandum that focuses the inquiry in these circumstances on the wind energy developer's efforts to reduce the impacts on wildlife and to develop safer wind energy technology, rather than viewing individual collisions as violations of the law. The USFWS has not yet determined whether particular avian mortality permits will be required for wind energy facilities.

Whether or not a permit for limited taking of protected species is issued, the USFWS may recommend that the wind farm 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, locating facilities away from known avian concentration areas, and scheduling wind farm operations to avoid disturbing avian wildlife during 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.

3.2.10 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.

3.2.11 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". The avian studies found many avian resources present on the Project site and in nearby areas. Bald eagles, a threatened species, roost (three day roosts are 6.4 km [4 miles] east and three night roosts are 11.3 km [7 miles] east of the project site) and hunt in the area during winter. Peregrine falcons, an endangered species, were also observed on the primary study area

(though not on the Project site and 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.

However, based on comparison with other studies, the site is not within 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 vicinity, 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 and vicinity 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 and vicinity 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 vicinity was a migratory funnel then the level of observations in the area would be expected to be at least a "good." However, the level of raptors observed in the primary study area 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 primary study area and were not observed flying over the Project 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 and vicinity 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).

The peregrine falcon, a federally endangered species, was observed only twice during the 850 hours of surveys conducted at the primary study area. No nest sites were found. Until this study was conducted, almost all other records of peregrine falcons were 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 observed at such a level to be considered unusual. 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 area that contains both the CARES and KENETECH Project sites (0.34 nests per square mile). This represents a good resident population, but nothing particularly unusual. 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, which is greater than 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 primary study area (32-square miles) should have contained up to 28 red-tailed hawk nests. However, only 7 nests were found in this study, suggesting that the Project vicinity does not have a particularly high nesting density. On the Project site, no red-tailed hawk nests were found and only three were found within one-half to one mile of the site.

Of the diversity of species found in the vicinity of the Project site, many of the species were determined to be 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.

In summary, the Project site and vicinity are used by a diversity of raptors and other bird species. However, the area is not part of major migratory flyway, based on the level of observations collected over the one-year avian survey.

3.2.12 General Response No. 12 Do Tower Guy Wires Represent a potential significant impact to birds?

Several comments on the Draft EIS suggested that turbine towers using guy wires (cables in tension used to support the wind turbine tower) represented a particular threat of collision to birds in the Project area.

The Draft EIS's conclusions regarding avian impacts took the risk of such collisions into account by relying on the Project Avian Study, which analyzed the potential impact of guy wires (page 5-29 to 5-30). Because the Draft EIS concluded that guy wires would not significantly increase avian mortality, it did not provide detailed information on guy wires. This response adds such information to address general concerns about guy wires that were raised by commentors.

Based on the best available evidence, guy wires do not significantly increase avian mortality at wind resource areas. Evidence from studies conducted in 1993 and 1994 at Altamont Pass (Struzik, 1995) suggests that collisions with guy wires account for less than 2% of onsite mortality of all avian species. Another study (Orloff, 1992) notes no avian collisions associated with 45 meteorological towers (most employing guy wires) in the Altamont Pass Wind Resource Area. Data from the Orloff studies at Altamont Pass (1992, 1995) showed that of the five basic turbine types studied, the two with guy wires had the lowest avian mortality rates *(Ibis Environmental Services Aug. 1995).*

Although the impacts of guy wires appear insignificant, mitigation measures designed to increase visibility of guy wires can further diminish the likelihood of impacts. Avian collisions with wires have been studied extensively by the electric power industry (see *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994*). These studies indicate that marking wires with forms of various colors, shapes and spacing have reduced collisions by 57-90%. Accordingly, although guy wires are not expected to pose a significant threat to birds, the applicant has proposed an additional mitigation measure to mark guy wires to further reduce potential collisions. This measure is described in more detail in Part 1 of this document. These markers would further reduce the likelihood of avian collision with guy wires. *(Ibis Environmental Services Aug. 1995).*

Commentors may have been concerned that birds might try to perch on guy wires, and in so doing risk collision by flying through the area swept by turbine blades. The guy wires on the AWT-26, however, attach to the tower below the area swept by turbine blades. Any bird seeking to perch on the angled guy wires would not have to fly through the swept area to do so.

According to Ibis Environmental Services, Aug. 1995, (see Appendix C) the likelihood of birds colliding with blades on the AWT-26 in this manner is consequently very low.

Because the Project Avian Study did not identify guy wires as a significant concern, the draft EIS did not explain the factors affecting use of guy wires in project design. This general response identifies some of those considerations.

When originally selecting the tower design, the Applicant decided to avoid using lattice towers because of the higher raptor mortality associated with perching sites on lattice towers. The Applicant instead chose a tubular tower. Another decision involved the type of tubular tower to be used. The narrower-profile *guyed* towers were selected in part because the downwind configuration of the AWT-26 turbine requires that the size of the tower be minimized to meet engineering (e.g., nacelle/generator horizontal "teetering" requirements and blade design), power production (e.g., air flow), and economic-viability (e.g., cost of towers) parameters.

Other design advantages of guy wires play important roles in the project's overall success. The guy wires also help determine the height of the turbine within the overall Project design. It has long been known that wind speeds increase with height (e.g., "Wind Power," *Mark's Standard Handbook for Mechanical Engineers*, 8th edition, pg. 9-168). By placing the turbine higher where the wind is stronger, taller towers enable a smaller turbine to generate the same amount of electricity as a larger turbine operating closer to the ground. Guy wires help take advantage of this principle by enabling the use of taller towers. To illustrate, if the proposal were to use a shorter 80-foot unguyed tower, approximately 13 additional AWT-26 turbines would be needed to produce the energy output equivalent to that of the 140-foot towers in the Proposed Action. These additional turbines would increase the area swept by the turbine blades by approximately 6,900 square meters. In addition, significantly larger foundations are needed for non-guyed towers than guyed towers of a similar height. Larger foundations disturb more plants and ground surface. The larger unguyed towers are also more visible, and may cause greater aesthetic impacts. Finally, because the cost of the Project's equipment is fixed, the cost of the energy generated is a function of the amount of wind energy available to be converted to electricity. Increasing tower height increases the amount of wind energy available, and therefore lowers the cost of the energy generated. Since guyed towers are significantly less expensive to build than non-guyed towers, turbines placed on the relatively tall, guyed tubular towers are expected to produce energy at a lower cost than those on shorter towers. Guy wires were included in the Project design to take advantage of these benefits.

Removing guy wires from the Project design at this point would cause significant delays and costs, in addition to the loss of the design benefits described above. This is because all components of a wind energy system are designed to operate as an integrated whole. Any change in part of the system would require changes to all the interdependent parts. Guy wires are an example. Unless the proposed guyed tubular tower is replaced with a lattice tower, extensive re-engineering and testing would be necessary to place the proposed turbine on top of a non-guyed tower. This would involve approximately one year's delay to redesign the turbine and test it through one wind season, as well as approximately two million dollars to account for the

combined cost of using larger towers (to compensate for loss of guy wire support) and redesigning the tower and turbine unit.

Such measures could perhaps be justified if the avian impacts attributable to guy wires were significant. As discussed above, however, studies based on the use of guy wires at other wind resource areas show that the impacts are quite low and can be further reduced through use of the markers. The applicant has now incorporated use of markers into the proposal.

3.2.13 General Response No. 13 Factors Affecting Location of the Project

Several commenters suggested that another location for the project might have fewer environmental impacts than the selected site. This comment is similar to, but more specific than the suggestion that regional studies be undertaken for wind energy development (see General Response No. 2). This response provides additional information about selection of wind energy sites in general, as well as information affecting the selection of the location for the proposed Project.

The Project is small compared to most wind projects. The Project would include 91 turbines which would generate up to 25 mw of electricity. By comparison, there are over 7,000 turbines at California's Altamont Pass, over 4,000 at San Gorgonio Pass, over 600 at the Montezuma Hills area, and over 5,500 at the Tehachapi area.

The Project's small size is consistent with its purpose. The purpose is not to generate a large amount of power for a particular user, or to directly displace significant existing resources, or to produce profit. The purpose is instead to help determine the future viability of wind as a renewable resource for the region and to provide CARES' member utility districts and BPA experience in working with it. Due to current relatively low market price for the power, funding subsidies are necessary to supplement project revenues so that the Project can be built and its demonstration value realized. Because funding for such subsidies are increasingly scarce, there is strong economic pressure for project revenues to be maximized and for costs to be contained.

Economic factors weigh heavily in the selection of sites for wind resource development. Given the economics of competing fossil fuels, (combustion turbines powered by natural gas are being quoted as providing energy for 20-23 mills per kilowatt hour) an excellent wind resource is a prerequisite for an economically viable wind project. The Project site was selected in part due to its exceptionally good wind characteristics. According to the Wind Energy Resource Atlas of the United States, Pacific Northwest Laboratory, March 1987 and Pacific Northwest Wind Regional Energy Assessment Program; Bonneville Power Administration, October 1985, (incorporated by reference), of 100 reporting wind stations in Washington, only one (Augsberger Mountain, in the Columbia River Gorge National Scenic Area) had a greater wind resource. At 90 of the 100 reporting wind stations, the resource was less than 50% of that available at the proposed Project site.

Another important factor in site selection is site availability and control. Site control usually involves either ownership of or a leasehold interest in the land to be used for wind energy development. Although Public Utility Districts (such as the CARES member utilities) have the power of condemnation, that method of securing adequate land areas for wind energy development would be so expensive as to preclude its use in the context of a demonstration wind energy project. CARES therefore relied on obtaining control of the Project property through voluntary negotiations with the owner, and reached an arrangement without incurring the expenses associated with the condemnation process.

Additional considerations in wind energy site selection include appropriate local land use designation, proximity to electrical transmission, and available infrastructure such as transportation, communication, labor and materials. Just as these features must be present, viable wind energy sites must *not* involve any conflicting land uses or severe environmental impacts that are apparent from the outset, further restricting the potential number of feasible candidate sites.

At the time the Project site was identified for potential development, it was known to combine the necessary high quality wind resource, land availability and the infrastructure prerequisites for wind resource development. Although the site is not large, it is sufficient for the demonstration purpose of the Project. In addition, there were no apparent environmental features which suggested that environmental impacts would be serious. The lead agencies initially decided to focus environmental study on the site, to determine the potential for any adverse impacts that were not initially apparent. Comments from the public and agencies during the scoping process were consistent with that approach. This approach was also followed for the Wyoming Windplant No. 1 project in Carbon County, Wyoming. No other sites for this Project which met the criteria of high quality wind resources, land availability and infrastructure were identified by the lead agencies, consulted agencies or the public in the scoping process or comments on the Draft EIS.

Accordingly, this EIS contains the results of the in-depth analysis of the site's environmental characteristics and the likelihood of impacts from project development. In gauging the level of the anticipated environmental impacts, the reader may find it useful to compare and contrast the environmental analysis of the proposed Project with information on other wind energy sites. The EIS therefore includes information on the Rattlesnake Hills site, which was rejected for development prior to detailed study, and incorporates by reference the Draft EIS for the Kenetech/PacifiCorp Windpower Project, Bureau of Land Management, Rawlins District (January 1995).

3.3 Written Comments and Responses

This section includes written comments to the draft EIS and responses by the lead agencies to those comments. Some of the written comments were provided, but not addressed, to the lead agencies. However, the lead agencies decided to respond accordingly to those comments in this document. Table 4.2 is an index of the written comments received.

Table 3.2 Index to Written Comments on Columbia Wind Farm No. 1 Draft EIS

	Date
State Agencies	
State of Washington Department of Community, Trade and Economic Development	March 30, 1995
State of Washington Department of Fish and Wildlife-Olympia	May 22, 1995
State of Washington Parks and Recreation Commission	April 14, 1995
Tribes	
Confederated Tribes and Bands of the Yakama Indian Nation (including attachments)[1]	April 11, 1995
General Public	
Central Cascade Alliance	May 1, 1995
Columbia Gorge Audubon Society	April 17, 1995
Columbia Gorge Audubon Society Letter to Jan Beyea[1]	March 20, 1995
Columbia Gorge Audubon Society Letter to Bill Weiler[1]	March 30, 1995
James C. Gleason	April 10, 1995
Joe Heineck	April 15, 1995
Portland Audubon Society	April1 7, 1995
William J. Weiler	April 5, 1995
Northwest Environmental Advocates (including attachments)	April 28, 1995
Northwest Environmental Advocates	May 1, 1995
Porteous Mines	March 22, 1995
Ray Thayer	April 15, 1995
Terry Walker	Before Hearing
Terry Walker	April 15, 1995
William Link	April 12, 1995
Dennis P. Vroman	April 15, 1995
Fara Currim/Glen Holmberg	April 22, 1995
Mark S. Hughes	April 19, 1995
Renewable Northwest Project (including attachment)	May 1, 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: 031095-01-BPA
Re: Columbia Wind Farm No. 1, Draft EIS

Dear Ms. Fisher:

Thank you for the opportunity to review the draft joint NEPA/SEPA Environmental Impact Statement for the Columbia Wind Farm #1.

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 would note that there is at this time no Determinations of Eligibility for any of the discovered properties. 1

We also recommend that you address the issue of Traditional Cultural Properties and cultural landscapes in relation to National Register criteria. 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, OAHP

1. The Bonneville Power Administration has initiated Section 106 consultation by letter dated May 30, 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 potentially eligible archaeological properties can be avoided by flagging the sites during construction and by minor shifting of turbines and turbine strings. For the potentially eligible sites that cannot be avoided, the Draft EIS and the Preferred Alternative described in Part 1 of this document identifies mitigation including further testing to determine eligibility and artifact recovery if the sites prove eligible.

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 2 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 2 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, has submitted a draft MOA for review and approval to the YIN, the Advisory Council on Historic Preservation, and the SHPO.

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

May 22, 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) Columbia Wind Farm #1. Lead Agencies: Bonneville Power Administration and Klickitat County. Columbia Hills - Township 03 North, Range 16-17 East, WM.

The Washington Department of Fish and Wildlife has reviewed the above-referenced DEIS, (CARES Project) 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

We object to the CARES Project as proposed and request that it be denied or significantly redesigned. Specifically, we feel that the turbines proposed pose too great of a treat to the avian resources of the area due to the use of guy wires and downwind turbines. It is evident from other proposals within the same area that the technology for less impacting structures exists. 3

Additionally, the proposed location for the turbine strings is an area of high quality shrub-steppe habitat comprised of Douglas buckwheat-Sandberg's bluegrass communities. 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. If the project is redesigned, 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 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. 4

ADEQUACY OF AVIAN STUDIES:

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. 5

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. 6

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. 7

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. 8

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. 9

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. This would apply to the site, not the permittee. 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. 10

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. 11

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 12

of a canyon, turbine elevation, and lattice-type towers were the most important. These conclusions should be considered and incorporated into the project design. 12

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. 13

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. 14

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. 15

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. 16

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. 17.

The DEIS identifies proposed construction within existing, documented **oak habitat.** 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. 17a.

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 17b.

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 800 feet of occupied western grey squirrel habitat.

Golden eagles are found both nesting and foraging in and near 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 any 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; heavy construction within 1 mile of the nest should be avoided during the period of nesting through fledging (March 15 through July 15). 17c.

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. 17d.

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. 17e.

MITIGATION:

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 95 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. 18.

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. 19

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

Sincerely,

Constance Iten
Habitat Biologist

cc: David Mudd
David Anderson
Carl Dugger

Responses to May 22, 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 No.'s 2 and 10. BPA and Klickitat County did pursue joint agency involvement with the WDFW and USFWS in designing the Avian Study Plan. BPA would consider further joint agency review prior to establishing regionwide wind energy facilities.

3. See General Response No. 12.

   The WDFW objection to the Project is noted. However, the risks assumed by WDFW regarding guy wires and downwind turbine configuration are not supported by existing studies. Although it is known that some individuals have speculated that downwind turbines contribute to avian mortality, current data suggests that turbine-wind orientation does not play a significant role in avian mortality. According to Orloff (1995), who looked at this issue as part of a study she is conducting on behalf of the California Energy Commission, recent analyses of data from the Altamont Wind Resource Area have provided no evidence of a significant difference in avian mortality between downwind and upwind turbines. Furthermore, we are not aware of any study that has shown that rotor direction has an affect on avian mortality.

4. Measures to reduce the amount of potentially altered shrub-steppe habitat were identified in the Draft EIS. In addition, mitigation measures have been added to the final EIS to further avoid potential impacts to the Oregon White Oak and Douglas' buckwheat/Sandberg's bluegrass communities. As suggested, an erosion control plan has been identified as mitigation to protect sensitive habitats from sidecast material. Also as suggested, lost habitat values to the priority habitats will be replaced through on-site or off-site enhancement and preservation of similar habitat (quality and quantity) in consultation with the WDFW. The substation and maintenance building will be sited to avoid impacts on the Douglas' buckwheat - Sandberg's bluegrass and Idaho fescue - bluebunch wheatgrass communities.

5. The winter 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.

Regarding the overall avian study approach, 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 meeting with Mr. Anderson, Mr. Dugger, Chris Carey (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).
- A meeting with Ms. Bush and Michelle Eames (USFWS), Ms. Fisher, Mr. Ives, and Mr. Wolff on December 14, 1994.

Many aspects 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 proposed Avian Study Plan was provided to the WDFW for comment. However, the WDFW did not submit comments to the lead agencies on the Avian Study Plan.

6. 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.

7. Impacts on bats were disclosed in the Draft EIS. Bats, including two federal candidates species (Townsend's big-eared bat and fringed myotis) were assumed to occur on the Project site (see pages

2-59 and 2-60 Section 2.6.3.3 of the Draft EIS). Impacts to bats were identified on page 2-63 Section 2.6.4.1 of the Draft EIS.

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 of collision 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.

8. While no data were collected in November 1993 or 1994, data collected in December 1993 and in January, February, October, and December 1994 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 Columbia River.

9. Bats are addressed in Table 2.13 and Sections 2.6.3 and 2.6.4 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. See response to comment no. 7.

10. 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 the conclusions of the Avian Study, the anticipated adverse effects do not warrant such restrictions. Although downsizing or phasing could limit the economic viability of the Project, the lead agencies would consider requiring all reasonable mitigation measures that could minimize or avoid adverse impacts.

11. Comments regarding jurying ongoing industry avian research are noted. Where appropriate, the results of ongoing industry research and experimentation on avian interactions have been applied to the Project design. Conditions requiring retrofitting based on future research results can best be dealt with in the context of the County's annual Conditional Use Permit review.

12. 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 entirely prevent incidental mortality.

The Project incorporates the two measures that have shown to effectively reduce avian mortality: 1) raptor protection measures on poles and overhead powerlines, and 2) tubular rather than lattice tower structures (see Section 1.2.6 of the Draft EIS, Mitigation Proposed by the Applicant and the Summary section of this document). Based on studies at Altamont Pass (BioSystems Analysis 1992), 8 percent of avian mortality resulted from electrocution and a greater proportion of mortality occurred on lattice type towers when compared to tubular 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 1995).

See also response to comment no. 3.

13. Raptor mortality studies at Altamont Pass have indicated mortality to be higher near canyons than away from canyons (Biosystems Analysis 1992). Struzik (1995) speculates 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 smooth nacelles would reduce the attractiveness of the towers as perch sites at all locations, including those near the steep southern portion of the Project site.

14. The powerlines along turbine strings are proposed to be below ground because of safety issues associated with the proximity of powerlines and turbines. Section 1.2.6.2 of the Draft EIS has been modified to clarify this situation (see Part 2 of this document). All Project overhead powerlines would be constructed in accordance with, the 1995 APLIC electrocution protection standards. 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.

15. As stated in Section 2.13.4.1 on page 2-111 of the Draft EIS, turbines would not be lighted.

16. A discussion of these impacts has been added to Section 2.6.4.1 of the Draft EIS (see Part 2 of this document). In addition, a mitigation measure has been added to the EIS (see Part 2 of this document) to address this issue. Specifically, the Applicant would submit a design that incorporates applicable and feasible measures to control burrowing mammals at turbine locations for approval by Klickitat County Department of Public Services and WDFW. This mitigation measure is also included in the Preferred Alternative. Chemical controls are not proposed.

17. See General Response No. 8.

17(a)Oak is a relatively minor component of the area being considered for development. Of the 2.4 hectares (6 acres) present on the Project site (less than 1 percent of the site), 0.8 acres (13 percent) would be disturbed. The Preferred Alternative, described in Part 1 of this document, includes measures to reduce impacts to Oregon white oak and to mitigate (through enhancement and preservation) any impacts that might occur.

Mitigation of impacts to oak habitat provided in the Preferred Alternative are response to comments that oak habitat should be avoided.

17(b)In response to the WDFW management recommendations for the western gray squirrel, Part 2 of this document adds the following mitigation measures to Section 2.6.5 of the Draft EIS:

- Retain mixed oak/conifer stands with mast producing trees and shrubs.
- Limit noise disturbance by avoiding blasting or other activities with similar noise levels within 400 meters (1,300 feet) of any known western gray squirrel nest between May 15 and September 30.
- To the extent possible, avoid new road construction within 244 meters (800 feet) of occupied western gray squirrel nests.

17(c)The Proposed Action would not include large conversions of rangeland; only about 7.7 hectares (19 acres) (11 percent) of the 70 hectares (172 acres) of rangeland on the Project site (17 percent of the Project site) would be converted for Project use.

The one-mile construction limit was not identified by WDFW during early consultation, nor does it appear in the most recently published WDFW management recommendations (1992). Conversations were held with WDFW to clarify the 1,600-foot buffer and the 1-mile heavy construction buffer around golden eagle nest sites, both of which were mentioned in this comment. As a result, Parts 1 and 2 of this document incorporate 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 EIS concludes the Preferred Alternative would likely result in golden eagle mortality.

17(d)Portions of the Project site will remain undisturbed and available as pocket gopher habitat. Restriction of herbicide use on the site has been defined as a mitigation measure proposed by the Applicant in Part 1 of this document.

The WDFW management recommendations for pocket gophers are noted and, where appropriate, will be considered by the lead agencies as potential mitigation measures. As stated previously, the Applicant does not have authority to alter long-term use of the Project site by landowners for agricultural purposes. However, the Applicant does not propose to use pesticides on the site.

17(e)As indicated previously, the Preferred Alternative would retain about 75 percent of existing onsite shrub-steppe habitat. The mitigation measures described in Part 1 of this document would further protect shrub-steppe habitat.

18. The Preferred Alternative includes on-site or off-site enhancement and preservation of Oregon White Oak and Douglas' buckwheat/Sandberg's bluegrass plant communities. To the extent that these areas can not be avoided, lost habitat values through on-site or off-site enhancement and preservation of similar habitat (quality and quantity) would be conducted in consultation with the WDFW to ensure that habitat replacement values are adequate. This measure may be required by decision makers as a condition for permits and approvals.

19. See General Response No. 2. Although the lead agencies agree that a regional approach to siting of wind energy facilities could be useful as a management tool, they do not agree that a supplemental DEIS for this Project is necessary in the absence of a such an approach. This environmental review is focused on the Proposed Action and the Preferred Alternative.

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. A substation and operation and support building are proposed on the Project site. The discussion of mitigation in Section 2.8.5 of the Draft EIS has been modified (see Part 2 of this document) to add a statement that, if the Applicant proposes site lighting in the future, that any such lighting must conform to the requirements of the Klickitat County Illumination Control overlay zone.

3. Approximately 2.3 metric tons (2.5 short tons) of PM_{10} (dust) would be generated during Project construction. No areas are proposed to remain disturbed after Project construction. After construction, approximately 19 hectares (48 acres) of the site would be permanently occupied with Project features (e.g., buildings, roads, and tower platforms). Truck and heavy equipment traffic on dirt and gravel roads located on the site would produce dust during dry weather. To minimize dust generated onsite during construction, the Applicant would follow soil erosion measures required under the National Pollutant Discharge Elimination System General Permit (NPDES) discussed in Section 2.1.2 of the Draft EIS. Specific measures are identified in Section 1.2.6.3 of the Draft EIS. After construction, areas disturbed but not occupied with permanent features would be revegetated and roads would be covered with gravel. 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 dust 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

Rec'd 4/20/95 LPK

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

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:

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. 8

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**). <u>It assumes the worst case scenario that the project as described will be constructed.</u> 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 <u>conclusions</u> 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 reglaze 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 designation. 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. Section 2.5.4 of the Draft EIS determined that some incidental avian mortality could occur and concluded that the Proposed Action would not significantly affect regional population levels. Section 2.6.4 of the Draft EIS identified impacts to non-avian wildlife from temporary construction disturbance, habitat loss, and Project operation. Measures have been identified in the Draft EIS and in Parts 1 and 2 of this document to mitigate potential impacts to birds and other wildlife. See also General Response No. 9.

4. The archaeological surveys conducted on the Project site identified 75 isolated finds and nine sites that were recorded for potential National Register eligibility. Preliminary Project layout diagrams show that all nine sites could be avoided during construction and operation of the Project. Furthermore, mitigation measures to ensure avoidance and protection of potentially eligible sites are discussed in the EIS and would be considered as conditions for permits and approvals by the lead agencies. None of the isolated artifacts were believed to be eligible for the National Register and will not be avoided by Project construction.

5. The County and BPA agree that Juniper Point is likely to be eligible for listing in the National Register of Historic Places as a traditional cultural property. 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 YIN and the elders to voice their concerns about the Project 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. Comments noted. However, the lead agencies did not respond to the legal overview presented by the Yakama Indian Nation as it is outside the scope of the environmental review for this proposed Project. 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 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

National Historic Preservation Act. BPA, through Klickitat County, contracted with the YIN Cultural Resource Program to conduct and translate oral histories with tribal elders to determine and document the cultural significance of the Project area. Refer to Section 2.4.3 of the Draft EIS as modified by Part 2 of this document for further information about YIN involvement with Project cultural resource studies. See also General Response No. 6.

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 1 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. As discussed in Section 2.4.5 of the Draft EIS, mitigation measures are available to avoid or minimize impacts to archaeological sites. Surface collection is a mitigation option if it is determined that a National Register-eligible site would be unavoidable during construction or operation of the Project.

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 2 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 OAHP reviews these recommendations and determines whether or not it concurs with the findings. As discussed in General Response No. 5 and the responses to other specific comments, consultation with the Office of Archaeology and Historic Preservation (OAHP) 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 a representative as a mitigation measure (see Part 2 of this document) and as part of the Preferred alternative described in Part 1 of this document..

16. Comments noted.

CENTRAL CASCADES ALLIANCE
1208 Snowden Road
White Salmon, WA 98672

May 1, 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 Columbia Wind Farm #1 (the proposed CARES 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 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. 2

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 CARES facility poses some serious concerns regarding particular species, including: the peregrine falcon, the bald eagle, the 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 or near the site. 3

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 4

argument can certainly be made that there are inadequate data upon which to make a decision regarding wildife impacts at this time.

2. Perhaps grazing should be discontinued on the site to give prey species more cover and thus possibly discourage raptor activity. 5

3. We want any roads to be gated to discourage vehicular access, which has negative impacts on wildlife. 6

4. We want large buffers between riparian areas and roads and turbines. 7

5. We want large buffers around talus slopes, cliffs and rock outcroppings. 8

6. We wish to be assured that continued access to the site is guaranteed to Native Americans who use it to collect native flora. 9

7. We urge that as few roads as possible be built and maintained, and that switchbacks be used as little as possible. 10

8 We wish to get a commitment from CARES to conduct ongoing monitoring of bird kills and other general wildlife research, as determined by wildlife officials, after the facility is built. 11

9. We are happy to learn that CARES plans to use tubular towers instead of lattice-style towers, in an effort to discourage avian perching at the site. 12

10. We understand that the CARES turbines will be louder than the Kenetech turbines and that at least one nearby landowner has concerns over this. How will this be addressed? 13

11. We had learned from Columbia Gorge Audubon Society members that poisons were considered as an option to keep the prey base down and discourage raptor activity. This would be a grave mistake, and I assume the idea has been dropped. 14

12. Most importantly, cumulative data should include the Oregon side as the raptors regularly fly back and forth and wind power proposals are being addressed there as well. The National Audubon Society has called for limit of 150 turbines in the near term for any given region (even those not with perceived bird problems). Our region now has proposals for more than 500 turbines in the works. This is far too many without any adequate data on what will happen to our raptor populations. 15

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. 16

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. So, again, strict language in the Conditional Use Permit, won't scare them away. 17

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 redio-frequentcy 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. 18

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. 19

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. 20

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 officials have said that the Columbia Hills area, in particular the wind power sites, may be of even greater importance to raptors than the Wasco County Sevenmile Hill site. Certainly, it is considered a biologically important area and an area that provides unique habitat for raptors.

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 demonstation (of the technology) prior to the start of a large-scale project." In essence, this 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 21

the uniqueness of the site, the county should instruct the developer to gather more data.

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 facilities (cumulative) be kept small-scale in the near term (that being 150 turbines maximum for at least two years); 22

2. That money be provided by the developer to adequately monitor bird kills and impact to populations during this time. That perhaps the local Audubon chapters be partners in the monitoring. And that independent assessments be made to determine if populations are being harmed; 23

3. That public hearings be conducted an at least an annual basis to reassess the situation; 24

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. 25

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 May 1, 1995 Letter from the Central Cascades Alliance

1. Comment noted.
2. See General Response No.'s 1 and 2. The lead agencies have identified a Preferred Alternative in Part 1 of this document that incorporates several measures to avoid, reduce, and mitigate adverse environmental impacts of the Project (see Part 1 of this document). Many of these measures were suggested by oral and written comments on the draft EIS.
3. Comment noted. Sections 2.5 and 2.6 of the Draft EIS identified potential impacts that could occur to peregrine falcons, bald eagles, golden eagles, other raptor species, and western gray squirrels. Mitigation measures were identified in the Draft EIS and have been expanded in Part 2 of this document to minimize or avoid potential impacts to these species.
4. See General Response No. 10.
5. Comment noted and has been added as a mitigation option in Part 2 of this document.
6. Comment noted. Gating access roads is included as part of the Applicant's proposal as discussed in Section 1.2.6.2 of the Draft EIS.
7. No riparian habitat is expected to be impacted by the proposed Project. Even though there would not be any direct impacts to riparian areas, mitigation measures outlined in Section 2.1 (Earth and Geology) and Section 2.3 (Hydrological Resources - Wetlands and Riparian Areas) of the Draft EIS would be applied during construction to control erosion and sedimentation and protect riparian areas, water bodies, and wetlands.
8. 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 significantly impact or require access to these areas.
9. Comment noted. Native American access to the Project site may be considered as part of a Programmatic Memorandum of Agreement if the Yakama's agree to negotiate such an agreement with BPA and the SHPO. See General Response No. 7.
10. Comments noted. As discussed in Section 1.2.2 of the Draft EIS, the Project would upgrade 8 km (5 miles) of existing road, construct 6.4 km (4 miles) of new gravel roads along turbine strings, and would not construct any new primary access roads (roads leading to the turbine strings). Use of switchbacks would be avoided to the extent possible.
11. Support for a monitoring program is noted. Monitoring is identified as a potential mitigation strategy in Section 2.5.5 of the Draft EIS. Also, mitigation measures have been added to Section 2 of this document (Preferred Alternative) including additional pre-construction design measures to avoid or minimize impact to habitat and operations monitoring of avian impacts in consultation with USFWS and WDFW.
12. Comment noted.
13. Klickitat County would be responsible for enforcing noise regulations if noise levels were to exceed the limitation criteria. Mitigation measures provided in 2.9.4 of the Draft EIS could be implemented to reduce noise levels associated with this Project. However, the actual noise reduction achieved through the implementation of suggested mitigation measures would need to be evaluated through additional analysis.

14. The Applicant has included avoiding the use of pesticides, herbicides, and rodenticides as part of the Proposed Action. The Preferred Alternative described in Part 1 of this document includes measures prohibiting the use of pesticides and rodenticides, and avoidance of herbicides except as necessary for noxious weed control.

15. See General Response No. 2. See also response no. 10 to May 22, 1995 WDFW comment letter.

16. See General Response No. 1. The almost two year environmental review for the Project has allowed for data collection and analysis sufficient to identify the potential environmental consequences of the Proposed Action. Klickitat County and BPA will carefully consider the information and analysis to make well-thought-out decisions.

17. Comment noted.

18. 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 responses no. 12 to the May 22, 1995 WDFW letter.

19. Comment noted. This Project is proposed for small scale commercial demonstration and does not include expansion or phasing as part of the proposal. However, post-construction avian monitoring would provide valuable information about wind energy related avian impacts in the east Columbia Hills.

20. See General Response No. 2.

21. See General Responses No. 10 and no. 11. The comments of the WDFW have been included and responded to in this document. These comments as well as the requirements of the USFWS final Biological Opinion will be fully considered by agency decisionmakers. Additional avian studies could be required if the lead agencies determine they are needed for informed decisionmaking.

22. The Proposed Action for the CARES Project is to install 91 turbines and is considered a small-scale demonstration project.

23. Comment noted. The Preferred Alternative includes avian mortality monitoring as mitigation. Local Audubon chapters may be included as partners in the monitoring.

24. If a Conditional Use Permit is issued for the Project, an annual review of compliance with the permit conditions would be conducted by the Klickitat County Board of Adjustment.

25. Comment noted. Pre- and post-construction avian monitoring would be crucial to determine if bird problems occur as a result of the Project. These monitoring results would provide valuable information to any authorizing agencies considering wind development proposals in the area.

May 4, 1995

Kathy Fisher
ECNE
BPA, 905 NE 11th Avenue
Portland, OR 97232

Re: Comments on the DEIS for Washington Wind Plant #1 and the Columbia Windfarm #1

Dear Ms. Fisher:

Please find, enclosed, the hard copy of our comments, that I indicated would follow our initial faxed version. Please note that a few organizational, factual, and gramatical errors have been changed. No substantive changes have been made.

Sincerely,

Dennis White
Conservation Chair, Washington
367 Oakridge Road
White Salmon, WA 98672

COLUMBIA GORGE AUDUBON SOCIETY

TO: Kathy Fisher, ECN3
BPA, 905 NE 11th Avenue
Portland, OR 97232

FROM: Columbia Gorge Audubon Society

DATE: April 17, 1995

DELIVERED VIA FAX: (503) 230-5699

RE: Comments on the DEIS for Washington Wind Plant #1 and The Columbia Windfarm #1

The DEISs are misleading and inadequate.

--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. 1

--The regional avian significance of the project site can only be determined by regional comparative analysis. This was not done. 2

--49 days is an inadequate time period to determine the site's avian migratory significance. Again, a regional comparative analysis is necessary. 3

--These projects would be built knowing that birds protected under federal and state laws will be destroyed. This is not "incidental takings." 4

--Grazing will not be prohibited. Cumulative environmental effects of both grazing and the wind power proposals were not considered. 5

--Cumulative aesthetic, wildlife, and cultural impacts from both this proposal and the other nearby wind power proposals: Zond and New World Power (and others unknown at this time) were not considered. 6

P.O. Box 512, Hood River, Oregon 97031

--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. 7

--A small mammal study is necessary to adequately determine raptor use patterns of this site. Oregon Department of Fish and Wildlife required such a study for the Zond proposal. 8

--Inadequate assessment of aesthetic impacts. It is misleading and certainly 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-84, east/west State Route 14, north/south Route 97. 9

--Other viable project 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 intra turbine areas by raptors. Assessment of actual habitat loss needs further study. 11

--Environmental impacts of potential contamination from greases, oils, etc., required by turbines and maintenance equipment were not considered. 12

--Plant inventories were not done on areas not predicted to be disturbed. This limits knowledge of occurrence and, thus, cumulative impacts on the sites 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 geographically and genetically important for occurring flora/fauna. The significance of this and resulting impacts were not considered. 17

--Assessment of impacts on the state threatened western gray squirrel was inadequate. The site's occurring population is a unique, genetically isolated population that will figure importantly in any recovery plan. Cumulative impacts of additional human intrusion, sound frequencies, etc., on this population, were not considered. 18

--References sited for possible occurrence of small mammals were for coast species and not eastern Cascade species. 19

--Collective aesthetic, 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 projects, if developed, 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 in 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 24

adverse environmental effects. The DEISs offer no evidence for this argument.

Thank you for the opportunity to comment.

Response to April 17, 1995 Letter From the Columbia Gorge Audubon Society

1. See General Response No. 10.

2. See General Responses No. 2 and No. 11.

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 comment no. 5 of the May 22, 1995 WDFW letter) and included the peak time periods when raptors are known to migrate.

4. See General Response No. 9.

5. The discussions of the No Action Alternative 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 2 of this document). Part 2 of this document also modifies Section 3 of the Draft EIS (cumulative impacts) to clarify this situation.

6. Section 3 of the Draft EIS discusses the cumulative effects of the Washington Windplant #1 (proposed by KENETECH) and the Columbia Wind Farm #1 (proposed by CARES) on visuals, wildlife, and cultural resources. See General Response No. 2 regarding the lead agencies' decision not to evaluate cumulative impacts of other projects.

7. See General Response No. 2.

8. 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 would provide little assistance in making decisions regarding the site.

9. Section 2.7.3 of the Draft EIS describes the types of viewers for whom the wind turbines would be visible. Although the commentor does not cite any study references, the Draft EIS's conclusion that some people would find the wind turbines aesthetically displeasing while others would not was based on a review of the professional literature regarding wind energy facility aesthetics and public perception (Thayer, 1988; Bosley and Bosley, 1990). Section 2.7.4.1 describes what travelers along major highways would see.

10. As stated in the Draft EIS, this EIS is tiered to BPA's Resource Programs EIS. The Resource Programs EIS allows BPA to narrow the range of reasonable alternatives to the site specific environmental review of a proposal. Reasonable alternatives for this EIS are limited to modifications to the Proposed Action that mitigate adverse environmental impacts. A brief description of the multi-stage evaluation process that BPA conducted on the proposals received from the wind energy demonstration solicitation is included in Section 1.3.2 of the Draft EIS. In addition, Section 1.3.2.1 of the Draft EIS discussed an Off-Site Comparative Alternative to provide decisionmakers with a comparative analysis of the potential environmental consequences from the Project and the Benton County Washington Windplant #1. That alternative used available environmental data and did not include the detailed level of analysis conducted on the Proposed Action because the site was determined by the lead agencies to be unavailable and not a reasonable alternative to the Proposed Action.

11. The Draft EIS identified that about 38 hectares (95 acres) of vegetation would be disturbed during construction with about 19 hectares (48 acres) permanently occupied by Project features. The acreage estimate included a 100-foot disturbance corridor along turbine strings. Additional impacts to raptors, including disturbance to foraging and breeding behavior, were identified in Section 2.5.4 of the Draft EIS. Secondary losses or impacts were not quantified based on a loss of acreage, but rather as additional risk factors that would be present as a result of construction and operation of the Project.

    No state or federal wildlife agencies have suggested that displacement of raptors from the site is an appropriate mitigation strategy. No such proposal was considered in this EIS.

12. Section 2.3.3 of the Draft EIS (last paragraph) addresses this impact. Mitigation measures listed in Section 2.3.4 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 floristic surveys of the area on the steep, south facing slopes were not conducted, field studies did include a walkover of the area 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 KENETECH Washington Windplant #1 project would occur and include additional loss and fragmentation of habitat.

14. Plant inventories at the Project site were conducted from April through July 1994 using techniques described in Appendix B (Botanical Resources Technical Report for the Conservation and Renewable Energy System, Columbia Wind Farm #1 EIS) of the Draft EIS. Survey periods were determined based on consultation with plant ecologists from the Washington Natural Heritage Program and other vegetation specialists.

    Comment is noted regarding plant responses to drought years. The number and kind of plants growing in a community is a dynamic process and may change from year to year based on many biotic and abiotic factors. During low rainfall years, perennial plant species generally emerge above ground, but they may not flower. Annual species may respond to drought years by persisting as dormant seeds in the soil or germinating and producing smaller plant specimens. Although conducting surveys in another year may generate a slightly different species list, the vegetation surveys conducted were considered adequate to determine the vegetation communities on the Project site, and the occurrence of special-status plant species as reported in Appendix B to the Draft EIS. Many annuals did germinate and flower during the survey period indicating that the environmental

conditions were not generally limiting for annuals. For those perennials which were not flowering during the survey period, identification was made through vegetative characteristics when flowers were not present.

15. See response to comment no. 13.

16. The Draft EIS discusses the tendency for soil disruption and habitat fragmentation to lead to a greater potential for invasive weeds (see Section 2.2.3.1, pages 2-15 and 2-16 and Section 3.3.3, page 3-6). Measures to control invasive weeds have been added to the Preferred Alternative described in Part 1 of this document.

17. Impacts to oak woodlands were identified in Section 2.2.3.1 of the Draft EIS. Oak woodlands were a significant factor considered during the lead agencies' development of the Preferred Alternative. The Preferred Alternative, as described in Part 1 of this document, includes measures to reduce impacts to oak habitat and also includes on-site or off-site enhancement/preservation to replace lost habitat value for oak.

18. As identified in Section 2.6.4.1 of the Draft EIS, the Proposed Action would impact western gray squirrel habitat. Up to approximately 0.3 hectare (0.8 acre) of the total of 2.4 hectares (6 acres) of oak, oak-pine, and scattered oak and oak-pine would be impacted. The mitigation measures for gray squirrel presented in Section 2.6.5 of the Draft EIS were defined based upon discussions with WDFW. The cumulative impacts (including increased human activity) to wildlife resources (including the western gray squirrel) was defined in Section 3.3.4 of the Draft EIS. See also response no. 17(b) to the May 22, 1995 letter from WDFW.

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 1.3.2.1 of the Draft EIS describes the Rattlesnake Mountain site. See also General Response No. 2.

21. The program referred to was conducted by the Northwest Power Planning Council with BPA funding. Any siting standards included were developed by public interest groups and are not BPA policy.

22. See General Responses No. 3 and 9. BPA has a stated objective, not a policy, to restore and enhance environmental quality and avoid or minimize possible adverse environmental effects. Mitigation options have been included to help achieve this objective. Furthermore, the Project is consistent with BPA's Resource Programs EIS and subsequent Record of Decision that identified development of renewable energy resources as a strategy to reduce adverse environmental impacts to air and water.

23. See General Responses no. 10 and no. 11.

24. See General Response No. 4. See Sections S.1 and S.2 of this document for a description of BPA's purpose and need for this Proposed Action. Please refer to BPA's Resource Programs EIS, incorporated by reference into this Draft EIS, for further discussion of the adverse environmental impacts of other generating resources.

COLUMBIA GORGE
AUDUBON SOCIETY

rec'd 3/23/95 - KH

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

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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. 6a
(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- 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 video. 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.

Response to March 20, 1995 Letter from the Columbia Gorge Audubon Society to Jan Beyea, National Audubon Society

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 May 22, 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 environmental consequences. See responses to the May 22, 1995 WDFW comment letter. See also General Response No. 11.

5. Moving and removing turbines does occur in wind farms. However, techniques used today to measure wind characteristics are more refined than in the past. The Applicant has conducted extensive wind surveys on the site and adjusted the proposed turbine locations to increase energy output and to minimize the need to relocate operable turbines. In the event that specific turbines are relocated, appropriate restoration activities, as specified in the Decommissioning Plan, would be required at the original installation site within a reasonable time period.

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 May 22, 1995 WDFW comment no. 5). 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. See response no. 14 to the May 1, 1995 letter from Central Cascades Alliance.

8. Concerns regarding the shooting of the bald eagle are noted. It is unclear whether the assertion is being made that someone associated with the Project is responsible for the shooting. However, there is no evidence to suggest that the Project and the shooting are in any way connected.

9. This comment applies to National Audubon Society's policies regarding wind energy development. The EIS did not conclude that the potential avian impacts warranted a moratorium on wind power development until the avian concerns are resolved.

10. See General Response No. 11. For the record, BPA and Klickitat County have produced the EIS, not the wind farm company.

11. Comments noted. Numerous factors are considered to determine proper siting of a wind farm. The factors usually include an adequate wind resource, site availability, environmental characteristics, land use designation, proximity to electrical transmission, and available infrastructure. However, appropriate mitigation always should be considered to reduce or compensate for potential adverse environmental 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.

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.

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

5

--state threatened western gray squirrel
--state and federal threatened bald eagle
--state and federal threatened peregrine falcon
--remnant, rare, high quality, native vegetative communities

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

Response to March 30, 1995 Letter from the Columbia Gorge Audubon Society to Bill Weiler

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 May 22, 1995 WDFW letter.
2. The lead agencies and their consultants are not aware of any such statement being made by WDFW. Although as an expert agency the WDFW was requested to and did provide input to the avian studies and study plan, they can not grant a "green light" for either of the Columbia Hills wind energy proposals. Klickitat County has the final authority to approve the permit application. Also see the WDFW May 22, 1995 comment letter.
3. Comments noted. Klickitat County and BPA are unaware of any such meetings or conversations that took place between the identified parties. The meetings and conversations were conducted separate from and outside of this environmental review process.
4. Comments noted. See General Response Nos. 2, 10, and 11.
5. This information was collected and presented in Sections 2.2.3, 2.5.3, and 2.6.3 of the Draft EIS.
6. Comments noted. Also see General Response No. 11.

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 3

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

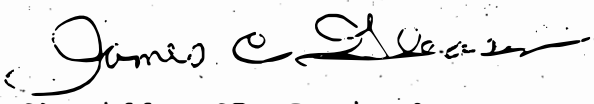
I take serious issue with the statement that only two sights of Peregrine Falcons were observed. I can understand why. The monitors were rarely on the ridge. I have had many sightings of Peregrines on the ridge, along with both types of eagles, and many other types of birds. I resent the comments that 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. CARES is proposing to operate 91 AWT-26 wind turbines on the Project site. Noise levels generated by operation of the proposed Project would be approximately 37 A-weighted decibels (dBA) at Receptor 7. Cumulative noise levels generated by both the CARES and Washington Windplant #1 (KENETECH) projects would be approximately 41 dBA at Receptor 7. As discussed in Section 2.9.2 of the Draft EIS, existing background noise levels in the surrounding Project area are estimated to be between 40 and 50 dBA. As was concluded in the Draft EIS, it is unlikely that either Project would cause a significant noise impact at Receptor 7 because estimated noise levels would not exceed existing 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 turbines 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). CARES is proposing a downwind turbine configuration, which as described above, can increase the potential for low-frequency noise. However, advances in turbine and tower design have proven effective in minimizing the potential for this impact to occur. Also, the Applicant has added turbulence generators to the tops of the towers that would minimize aerodynamic low frequency noise.

2. See Section 2.12.4 of the Draft EIS, as modified by Part 2 of this document, for mitigation measures to avoid impacts to communication signals. Avoidance of impacts will require careful siting of individual turbines during final design.

3. As described in Part S.2.1 of this document, the primary need for this Proposed Action is for BPA to accomplish the research and development necessary for the acquisition of energy resources that will contribute to diversification fo the long term power supply prospects in the region. Also, the two wind projects proposed for Columbia Hills are significantly smaller than those that exist in California (see General Response No. 13) and the visual impacts would be much less than those at the California wind resource areas.

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. 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 not be particularly at risk of collision with wind turbines if the Project is developed because of their distance from the site. Section 2.5.6 of the Draft EIS identified that the Project is not expected to significantly affect the viability of the Columbia Gorge Management Unit peregrine falcon population because the current estimate of seven breeding pairs exceeds the management goal of three breeding pairs.

6. See the response to 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.

7. Comments noted. See also General Response No. 1.

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. Comment noted. Mitigation measures to address noxious weeds are included in Section 3.4 of the draft EIS. Section 2.2.4 identifies mitigation measures to minimize the impact of road construction. In addition, Part 2 of this document add a mitigation measure to Section 2.2.4 to more fully address the control of noxious weeds.

2a. See the response no. 12 to WDFW May 22, 1995 letter. Some approaches, such as the use of ultrasound to prevent bird intrusion, have not yet been sufficiently tested for widespread application.

2b. Comment noted. See General Response No. 12.

2c. Comment noted. The Proposed Project would potentially impact only 0.2 hectares (0.4 acres) of oak woodlands.

2d. Avian monitoring was identified as a potential mitigation strategy in Section 2.5.5 of the Draft EIS and is also included in the Preferred Alternative described in Part 1 of this document. Section 2.5.4 of the Draft EIS supports the statement that the avian problem is highly site specific.

3a. See response No. 1.

3b. The Section 2.7.5 of the Draft EIS identifies a mitigation measure 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..

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 1 of this document, includes on-site and off-site enhancement/preservation to compensate for loss of habitat value for oak woodland on or near the Project site.

5. The comment regarding monitoring noise emissions from three or four stations (receptors) shown in the Columbia Wind Farm #1 Draft EIS is 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/CARES 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/CARES 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. Avian mortality is a potential consequence of the Proposed Action, 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 is expressed regarding another proposal, the KENETECH Washington Windplant #1.

5. See General Response No. 9.

6. Comments noted. See General Responses No. 2 and 4.

7. See General Response No. 10.

P.O. Box 213
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.

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. 24
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.
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 CARES 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, CARES, 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,

Bill Weiler

William J. Weiler

Response to April 5, 1995 Comment Letter from William Weiler

1. See General Response No. 10.

2. Because the WDFW has not established formal guidelines for the western gray squirrel, these measures were based on WDFW recommendations from their designated contact for this project (Carl Dugger - see the responses no. 5 and 17(b) to May 22, 1995 WDFW letter).

3. See General Response No. 3.

4. Comment noted. The Draft EIS was prepared by the lead agencies and third party consultants to meet the environmental review requirements of NEPA and SEPA and are not Project advertisements. Klickitat County and BPA have produced an objective analysis of the significant issues that ensures an informed decisionmaking process.

5. Measures to reduce the potential for noxious weeds created by the Proposed Action are provided in Section 2.2.4 of the Draft EIS as modified by Part 2 of this document. Part 2 of this document modifies the "No Action" discussions in the Draft EIS to state that impacts from continued grazing would also occur under the Proposed Action and the No Action Alternative.

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 no. 17(a) to the May 22, 1995 WDFW letter. Part 1 of this document includes mitigation that would reduce impacts to oak habitat and mitigate losses that do occur.

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 2.6.4.1 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 no 5 and 17(b) to the May 22, 1995 WDFW letter.

11. Because, under the Proposed Action, less than 0.4 hectare (1 acre) of oak habitat that would be lost and because several hundred areas of suitable habitat is present in the Columbia Hills area, the loss is not considered significant in terms of the existing conditions.

12. See the responses no. 5 and 17(b) to May 22, 1995 WDFW letter. Also see Part 1 of this document, and modifications to mitigation for impacts to western gray squirrel described in Part 2 of this document.

13. Your recommendation to close roads to minimize road kill of western gray squirrel is noted. The Proposed Action would involve providing locked gates at access roads to the site. The Applicant has no authority to restrict landowner access or use.

14. This comment applies to Kenetech's Washington Windplant #1, not this Proposed Action.

15. Amphibians and reptiles are discussed in Section 2.6 of the Draft EIS.

16. The two observations of long-billed curlews were made on the overall primary study area at different times of the year. Based on the amount of time spent in the vicinity of the Project site over the course of a year (85 person-days), this number of sightings is very low. As identified on page 2-37 of the Draft EIS, no long-billed curlews were observed on the Project site.

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 2 of this document modifies Section 2.6.4.1 of the Draft EIS to clarify this point.

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. Discussions of impacts to golden eagle are 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 no. 17(c) to May 22, 1995 WDFW letter.

21. The Proposed Action is approximately 11 km (7 miles) west of the bald eagle roost area.

22. The closest observation of Peregrine Falcons was approximately 19.3 km (12 mi.) east of the Project site. The EIS found that the Proposed Action is not likely to jeopardize the continued existence of the Peregrine Falcon in the Columbia River Gorge. BPA is still waiting for concurrence from the USFWS on this finding.

23. See General Response No. 10.

24. Recommendations regarding mitigation measures are noted and were responded to in earlier comments.

25. Comment noted. Avian mortality monitoring is included as a mitigation option in Part 1 of this document. Additional avian monitoring may be required by the USFWS final Biological Opinion.

26. See General Response No. 11.

27. See General Response No. 9 and Section 2.5.2 of the Draft EIS.

rec'd 5/1/95 - kf

NORTHWEST ENVIRONMENTAL ADVOCATES

Columbia/Willamette
RIVERWATCH
133 S.W. 2nd Ave. #302
Portland, OR 97204

April 28, 1995

Kathy Fisher
Bonneville Power Administration
PO Box 3621_ECN3
Portland, OR 97208-3621

Dear Ms. Fisher:

The undersigned individuals and organizations would like to submit the following comments regarding the proposed wind energy projects at Columbia Hills in Klickitat County, Washington (Washington Windplant #1 and the Columbia Windfarm #1).

These projects are an important first step toward meeting the Northwest's, and the nation's, energy needs with clean, renewable sources of power. We are greatly concerned by the rush in the Northwest toward meeting its energy needs by burning natural gas. Of course, as environmental organizations, we believe burning fossil fuels can only exacerbate the global warming problems, and will result in significant emissions into the atmosphere. In fact, a 240 aMW gas-fired combustion turbine will create emissions over its life equivalent to putting 200,000 new cars on the street. 1

The Northwest needs to diversify its sources of energy. While gas prices are at an all-time low, we do not expect those prices to stay at current levels. A company developing natural gas projects will not sign a fixed, 30-year fuel contract at today's prices, but wind projects will. In addition, wind projects are not subject to dramatic swings in fuel prices, nor do they pollute. 2

We are aware these projects, and all human-made projects, may have some impacts. One of those impacts may be on birds in the area. KENETECH Windpower has undertaken an unprecedented program to reduce the risk to 3

birds by wind power generating systems. Another impact may be on cultural resources of the Yakima Indian Nation.

We believe we can work with KENETECH and CARES to assure these projects will not have a negative impact on birds or other plant and wildlife populations. We also believe that KENETECH and CARES will work with the Yakima Indian Nation to address cultural resource issues. Wind projects help the environment, generate reliable, low-cost power, and provide significant economic development to the local community.

4

We urge BPA and Klickitat County to proceed with these projects.

Sincerely,

Eugene Rosolie, Northwest Environmental Advocates, for

J. Rachel Shimshak, Renewable Northwest Project

Denis Hayes

Ralph Cavanagh, Natural Resources Defense Council

KC Golden, Northwest Conservation Act Coalition

Jane Hotchkiss, The Conservation Law Foundation

Patti Lowe, Greenhouse Action

Alan Zelenka, The Solar Energy Association of Oregon

Responses to April 28, 1995 Comment Letter from Northwest Environmental Advocates

1. Comment noted. See General Response No. 4.

2. Comment noted. Section S.2.1 of the Draft EIS concurs with the need to diversify energy resources available in the Northwest.

3. Sections 2.4 (Cultural and Historical Resources) and 2.5 (Avian Resources) identify potential impacts and mitigation measures to those resources.

4. Comment noted.

Rec'd 5/01/95

NORTHWEST ENVIRONMENTAL ADVOCATES

Columbia/Willamette RiverWATCH
1133 S.W. 2nd Ave. #302
Portland, OR 97201

May 1, 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:

We are writing this letter in response to the Draft Environmental Impact Statement for the Washington Windplant # 1 and the Columbia Windplant # 1. It is imperative that these actions which will enable the Northwest to address regional barriers to cost effective wind development and gain hands on experience with the operation and integration of commercial wind farms proceed in a timely fashion. The ability of wind energy to provide a reliable, economical and environmentally acceptable resource for the region as well as the importance of assuring consistency with BPA's statutory responsibilities under the Northwest Power Act underscore the need for these projects to move forward. 1

The lack of a suitable wind energy demonstration project in the region will delay implementation of BPA's and the Council's renewable energy development objectives and could prompt the increased development of other much less environmentally compatible resources such as natural gas, which will fill the region's airshed with sulphur dioxide, nitrogen oxides, volatile organic compounds, greenhouse gases and particulate matter. 2

We also believe that the comments below will improve the projects overall environmental performance:

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; 3

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 4

these differences the estimated impact should be far below the "1.7 to 5.8 birds per 100 turbines;"

develop or choose the preferred alternative that minimizes the impact on white oak and associated habitat; 5

better identify western grey squirrel habitat in the project area and if necessary outline was to minimize those impacts; 6

develop a long term monitoring program for raptor and other bird impacts and identify possible mitigation programs; and 7

develop strategies to discourage unnecessary vehicular use of the project area. 8

In determining cumulative impacts through this EIS, focusing solely on the KENETECH 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. 9

Thank you for the opportunity to comment on this project and we look forward to reviewing the Final EIS.

Sincerely,

Nancy Holbrook, Washington State Director
Green Power Project
for

Brad McCarrell
Associate Director Rivers Council of Washington

Rhys Roth
Director Atompshore Alliance

Patti Lowe
Greenhouse Action

Responses to May 1, 1995 Comment Letter from Northwest Environmental Advocates

1. Comment noted. Section S.6 of the Draft EIS discusses the benefits and disadvantages of delaying implementation of the Project. See also General Response No. 4.

2. Comment noted. This comment is consistent with Section 1.4, No Action Alternative, of the Draft EIS.

3. See General Response No. 4 and Figure 1.3 of the Draft EIS.

4. These Project features are part of the design as discussed in Section 1.2 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.

5. Comments noted. Measures to reduce loss of oak habitat and mitigate any losses that do occur are included in the Preferred Alternative (see Part 1 of this document).

6. The Draft EIS assumed all oak and oak/pine woodlands to be occupied by western gray squirrels. Measures to mitigate potential impacts to western gray squirrels are identified in Section 2.6.5 of the Draft EIS and are included in the Preferred Alternative described in Part 1 of this document.

7. Support for a monitoring program is noted. Monitoring was identified as a potential mitigation measure in Section 2.5.5 of the Draft EIS and is included in the Preferred Alternative described in Part 1 of this document.

8. The preparation of a site access plan is identified as a potential mitigation measure in Section 2.2.4 of the Draft EIS. The Applicant also proposes to limit public access to the Project site by installing locked gates.

9. Comment noted. See General Response No. 2.

PORTEOUS MINES

'uart E. Porteous, Pres.
P.O. Box 31916
Seattle, Washington 98103

Response Due: Marg Nelson-ST
cc: A-2, MG, Cindy Custer-CK

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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~~ hyroelectric 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 noted. Due to BPA's increasingly noncompetitive market position, BPA is currently reviewing all of its generation resource portfolio, including the Columbia Wind Farm #1, to ensure that these projects are cost effective and necessary. This review does not indicate a lack of commitment to renewable resources.

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 alevate the problems that ~~occurred~~ occured with M00-2, 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> M00-2 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 Marysville area and promote the facility as the site for observation. Klickat County does need the tourist industry. The traffic can best be handled off the State Hwys. and the Marysville 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. Conducting a detailed assessment of the Hoctor Road roadway condition prior to and after Project construction is included as a mitigation measure in Section 2.11.5 of the Draft EIS. Such an assessment would allow allocation of appropriate maintenance costs to the Applicant. This mitigation is also included as part of the Preferred Alternative in Part 1 of this document.

3. Comment noted. Part 1 of this document includes such a restriction as a mitigation measure in the Preferred Alternative.

4. Figure 2.8.1 of the Draft EIS 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. Section 2.7.5 of the Draft EIS identifies mitigation, in the form of providing signs to direct sightseers to public areas where the Project could be viewed,. It should be noted that, unlike the MOD-2 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 MOD-2 turbines could only be viewed by driving along Hoctor Road.

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).

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

4. Do not allow guyed wires on any towers - This helps 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

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. To address concerns regarding guy wires, Part 1 of this document and General Response No. 12 include a mitigation measure to mark guy wires in order to improve visibility and reduce the risk of collision.

2. The Klickitat County building code would require the permanent maintenance/operations building to have water closets and sinks. Since existing ground conditions would not adequately perk to allow for installation of a septic system, a portable toilet would be placed on site. The waste would be removed by pumper truck as needed. Potable water would be supplied by truck and stored onsite or supplied by a small well. No significant adverse impacts would occur to the local hydrological resources from these activities.

3. Noise from operation of the CARES project could exceed the night-time noise limitation criteria (50 dBA) established under the Washington Administrative Code (Chapter 173-60 WAC) for parcels in the Columbia Hills Estates, including Receptor 16, which were platted as residential lots and have been used for residential and recreational purposes. Cumulative projected noise levels from both the KENETECH and CARES projects could reach 59 dBA, or 1 dBA less than the 60-dBA day-time standard. Compliance with noise limitation criteria established under Chapter 173-60 WAC is one of the mitigation measures included in the Preferred Alternative discussed in Part 1 of this document. In particular, refer to Section 2.2.5.3 of this document. While Klickitat County does not currently have in place a procedure for enforcing noise standards or responding to noise complaints, the County, acting through the Prosecuting Attorney, has the authority to investigate noise complaints, prosecute violations and/or issue enforcement orders under a conditional use permit and State statutes. One of the mitigation measures described in Section 2.2.5.3 of this document would require the Applicant to pay the cost of noise level evaluation if a reasonable complaint is filed with the County.

4. Comment noted. The routing of powerlines and roads in common corridors to reduce the overall amount of the site disturbance has been added as a mitigation measure to the Preferred Alternative discussed in Part 1 of this document.

5. Section 2.3.4 of the Draft EIS describes mitigation measures available to minimize impacts to water from Project construction and operation. The Applicant must also comply with the terms of the Baseline General Permit for Stormwater Discharges Associated with Construction, described in Section 2.1.2 of the Draft EIS. In addition, an Operation Monitoring Plan has been added as a mitigation measure to the Preferred Alternative discussed in Part 1 of this document.

6. The relatively constant 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. Comment noted. Section 2.5.4 of the Draft EIS identified that the Proposed Action would cause an increased collision risk to Avian species present on the site. Mitigation options to reduce the level of collision risk are discussed in Section 2.5.5 of the Draft EIS and in Part 1 of this document. See General Response No. 12.

8. See the response to comment no. 6. The evaluation in Section 2.3.3 of the Draft EIS concluded that no significant change in water quality would be expected from the Proposed Action provided identified mitigation is implemented.

9. Figures 3.4, 3.5, and 3.6 of the Draft EIS are photo simulations that approximate how the Columbia Wind Farm #1 and Washington Windplant #1 would look from certain viewpoints. Although all turbine strings from the Proposed Actions were included in the simulations, the reproduction of the black and white photographs may make it difficult to discern all of the turbines. Also, site topography shields some turbines from view at the different viewpoints.

10. This comment applies to Kenetech's Washington Windplant #1. Kenetech changed the proposed action to relocate the substation to the west and eliminate the need to run a powerline north along the east side of Columbia Hills estates. Therefore no new road in that area would be required.

11. See response to comment no. 10.

12. See response to comment no. 5. Mitigation measures regarding the storage of petroleum products, preparation of a Spill Prevention Control and Countermeasures Plan and Hazardous Materials Plan have been added to the Preferred Alternative described in Part 1 of this document. Section 2.3.4 of the Draft EIS discusses mitigation, including lubrication and maintenance of construction equipment in contained areas and using liquid-absorbing booms, socks, pads, or loose absorbent materials in the event of minor spills of fuels, oils, lubricants, and other fluids.

13. The Preferred Alternative includes a mitigation measure requiring the Applicant to provide a facility free of debris and unused or broken down equipment. An Operations Monitoring Plan and a Decommissioning Plan are additional measures incorporated into the preferred Alternative to address these concerns. The Applicant will be responsible for ensuring the proper disposal of garbage and trash.

14. The turbine nearest the Walker property line would be in turbine string A (see Figure 1.1 in Part 1 of this document), approximately 250 feet south. See response no. 3 regarding potential exceedances of the noise limitation criteria.

15. Generally speaking, the party causing a fire that results in property damage is liable to the property owners for such damages.

16. The Preferred Alternative includes a Decommissioning Plan to be approved prior to commercial operation which addresses the underlying issues related to decommissioning and the potential for Project abandonment.

17. This Project includes installation of approximately 91 wind turbines and does not propose any future further developments. The KENETECH Washington Windplant #1 proposed an additional 345 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 and the potential for unauthorized entry onto Project lands in Sections 2.8.4 (p. 2-82). Mitigation, in the form of providing signs to direct sightseers to public areas where the Project could be viewed, is described in Section 2.7.5. In addition, the Proposed Action includes providing locked gates at access points onto the Project site. Section 2.12.3.1 (p. 2-107) identifies the potential need for increased police services that could be associated with increased unauthorized entry. As mitigation, Section 2.12.4 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. Section 2.12.3 (p. 2-107) of 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, to the extent feasible. Some new roads will be necessary to provide access to turbines.

21. See General Response No. 10. While bird 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.

22. Section 2.2.3, pages 2-15 and 2-16, of the Draft EIS discusses impacts to plant communities for the offsite 115-kV transmission line. Additional surveys would be required once the location of the transmission line corridor is finalized. See Section 2.2.1 of this document for discussion of measures which would require that the final powerline route avoid or minimize impacts to sensitive plant communities.

23. Comment noted. See General Response No. 12.

24. Specific mitigation measures to reduce noise levels at residential property lines will be determined as part of the Klickitat County Conditional Use Permit approval process.

25. To the extent feasible and practicable, overhead powerlines will be located in coordination with the appropriate wildlife agencies to avoid or minimize adverse environmental impacts.

26. Comments noted. Klickitat County recognizes that the Walker property has been platted for residential use and has been used for recreational purposes. See response to comment no. 3.

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 in 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 Westerco 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 power 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

6

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

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 7 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 10.

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 in Section 2.6.5 (p. 2-65) of the Draft EIS. Because the WDFW has not established formal guidelines for western gray squirrel, these measures were based on WDFW recommendations through their designated contact for this Project.

6. Noise levels associated with the proposed Columbia Wind Farm #1 were estimated using the NOISECALC computer program. The program was developed by the New York State Department of Public Service to assist with noise calculations for major power projects; primarily electric power plants and gas compressor stations. The program is also used to calculate noise levels from other stationary source projects including wind farms. The program calculates noise levels at receptors by reducing the sound energy from each source over the distance between the source and the receptor. The analysis performed for the Draft EIS did not factor barrier effects caused by hills between some sources and receptors or attenuation resulting from vegetation or other objects. In addition, the analysis of cumulative impacts from both the CARES and KENETECH projects assumed placement of a maximum of 481 turbines instead of the 365 turbines that are actually proposed. Thus, with these two assumptions, the model provides a worst-case, conservative estimate (i.e., higher than expected) of potential noise impacts.

7. Although no noise monitoring was performed as part of this project, model results do provide an accurate representation of noise levels that would occur given the modeling scenario described above. It is assumed that actual noise levels would be less than those described in the Draft EIS; how much less is unknown. As discussed in the Draft EIS, the primary source of noise during construction would be from operation of heavy equipment and support vehicles. Noise levels could reach 93 dBA at 15 meters (50 feet) from individual construction sites. However, construction noise is considered temporary and is exempt from regulation under Chapter 173-60 WAC. See response nos. 3 and 26 to the previous letter from Mr. Terry Walker.

8. See General Response No. 1.

9. Comment noted. NEPA and SEPA require that comments be accepted from all interested persons and does not limit comments to local residents. See General Response No. 4.

10. Comments noted. The Preferred Alternative discussed in Part 1 of this document calls for completion of a Decommissioning Plan prior to commercial operation of the Project to deal with the issue of abandonment.

Rec'd 4/12/95 LPT

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.

- 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. 2

- 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. 3

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. Mitigation measures to address noxious weeds and to minimize the potential impacts from road construction are included in Section 2.2.4 of the Draft EIS. Part 2 of this document adds a Reseeding/Restoration and Weed Management Plan as a mitigation measure to the Preferred Alternative in Section 2.2.4 of the Draft EIS to more fully address the control of noxious weeds.

2. The Preferred Alternative includes a mitigation measure which would require the replacement of lost habitat value for oak and certain shrub-steppe habitats through enhancement and/or preservation.

3. Comment noted.

4. The Applicant is required to meet state noise standards. See response no. 3 to undated letter from Terry Walker.

5. The Applicant will only use roads where permission is granted from appropriate landowners.

6. Comment noted. See also General Response No. 10.

7. Comment noted. See General Response No. 12.

8. Comment noted.

Dennis P. Vroman
269 Shetland Drive
Grants Pass, OR
97526

Kathy Fisher, ECN3
Bonneville Power Administration
905 NE 11th Ave.
Portland, OR 97232

Rec'd 4/21/95
L/M

4-15-95

To Whom it May Concern,
Regarding the installation of wind-powered turbines all the Columbia Gorge. Lets not treat the bird populations of the Columbia Gorge like we have the salmon populations. I do not support "wind farming" the East Gorge at the expense of migratory or local bird populations. If the placement locations or current technology of wind turbines will not prevent the killing of birds ~~by~~ by moving blades, then lets not install these "death traps" along the Columbia Gorge. It's about time we give some serious thought to conserving our natural heritage, before its gone! Sincerely, Dennis P. Vroman

1

Recd 5/20/95
KPO

Tara Curtin / Glen Hilmberg
PO Box 911
Bingen WA. 98605

April 22, 1995

To Kathy Fisher:

We are in the natural resources field, my partner in fisheries and I in wildlife. After hiking up in the Columbia Hills (north from H-14 by the John Day Dam to the radio tower) and observing a variety of plants, birds, and mammals utilizing the area, we were shocked to learn of the proposed wind power sites. 1

Wind power turbines in the windy hills of the Gorge reflect poor planning and biological/ecological plunder. The construction alone will affect plants and small mammals, the latter being sensitive to noise and heavy vibration. And then of course, the turbines will affect the soaring raptors that utilize the thermals and wind currents. 2

It is obvious that the blatant disregard for ecological integrity in this project is due to large profit sums to be gained by corporate interests. We recognize that windpower will not be an "alternative" form of energy, but an additional one with excess hydroelectric power being sold for greater profit. 3

We are opposed to your windpower project. Please leave it out of the Gorge. 4

cc: Dreyer

Sincerely — Tara Curtin

4-19-95

See also 95-0417

RANDY HARDY
BPA PRESIDENT
905 NE 11TH
PORTLAND, OREGON
97232

DEAR SIR:

App. ACtion: Katherine Fisher-ECN
cc: A-2, MG., E, Cindy Custer-CK

PLEASE RECONSIDER IMPLEMENTING THE COLUMBIA HILLS WIND PROJECT IN WASH. ST. THE COSTS OF WINDPOWER WILL BE DOWN TO .4 CENTS A KILOWATT BY THE YEAR 2000 MAKING IT A CLEAN CHEAP RENEWABLE ENERGY SOURCE. IT'S GREAT THAT WE HAVE CHEAP HYDRO--ELECTRIC POWER IN WASH. ST.BUT ITS GOOD TO HAVE OTHER OPTIONS AS WELL.

WINDPOWER WILL HELP THIS COUNTRY REDUCE ITS DEPENDENCE ON FOREIGN OIL AND MAY PREVENT THIS COUNTRY FROM HAVING TO WAGE A BLOODY WAR TO PROTECT ENERGY SOURCES WE DONT REALLY NEED. THE COLUMBIA HILLS WINDPOWER PROJECT WILL CREATE JOBS AND HELP IN THE PREVENTION OF AIR POLLUTION. STUDIES HAVE SHOWN THAT AIR POLLUTI ON HAS CAUSED CERTAIN TYPES OF CANCER AND THIS NO DOUBT INCREASES THE COST OF HEALTH CARE.

IT'S IMPORTANT THAT WE HAVE A STRONG DEFENSE BUT FOR ONCE I WOULD LIKE TO SEE MY TAX DOLLARS INVESTED IN SOMETHING LIKE WINDPOWER INSTEAD OF SOMETHING THAT BLOWS EVERYONE TO HELL.

YOURS TRULY,

Mark S. Hughes

MARK S. HUGHES
411 N 90TH ST #110
SEATTLE, WA. 98103-3700
AMERICAN SOLAR ENERGY SOCIETY
MEMBER.

Responses to April 15, 1995 Comment Letter from Dennis P. Vroman

1. Comment noted. Section 2.5 of the Draft EIS analyzed the potential impacts that could occur to resident and migratory birds if the Proposed Action were developed. The lead agencies will consider this information to make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.

Responses to April 15, 1995 Comment Letter from Fara Currim and Glen Holmberg

1. Comment noted.

2. Potential environmental impacts and appropriate mitigation measures are analyzed in the Draft EIS as amended by this document. The lead agencies will consider this information to make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.

3. Comment noted. See Sections S.1 and S.2 of the Draft EIS for a description of BPA's purpose and need for the Proposed Action. See also General Response No. 4.

4. Comment noted.

Responses to April 19, 1995 Comment Letter from Mark S. Hughes

1. Comment noted.

rec'd 5/02/95 KP

Renewable Northwest Project

May 1, 1995

Kathy Fisher
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208 3621

RE: Columbia Hills Wind Projects

Dear Ms. Fisher,

Thank you for the opportunity to comment on the EIS for the CARES wind project. The following summarizes and supplements my verbal comments made in Goldendale, Washington at the public hearing on April 5, 1995. You will note that I have revised some of the pollution estimates I made in my remarks. I was able to obtain better data and have adjusted the estimates accordingly. These comments apply to the KENETECH as well as the CARES projects. 1

It is important, first, to consider the context within which the wind projects must operate. All around the region, utilities are rushing to build gas-fired combustion turbines. In the 160 miles from Vancouver, Washingt n to Hermiston, Oregon, there are at least 750 aMW of gas turbines slated for development with a potential of up to 1,450 aMW. There are enough gas plants proposed around the region to add several thousand more megawatts. The threat to our region's air quality is significant and real. 2

Air emissions from burning fossil fuels to generate electricity account for 71% of all sulfur oxides emitted in the US, 35% of all carbon dioxide, 32% of all nitrogen oxides, 18% of all methane, and almost 9% of all regulated particulate matter (PM-10). Utilities are major sources of acid rain, pollution-caused illnesses, habitat destruction, smog, and the emission of global warming gases (see attached summary).

Just the three gas plants planned for Vancouver, WA, and Hermiston and Boardman, OR will emit annually over 3 million tons of CO_2, 31,500 tons of methane, 450 tons of NO_x, and over 600 tons of carbon monoxide.[1] All of this is in the Columbia River Gorge airshed. There can be no doubt that this will have a negative impact on habitats and the ecosystem.

[1] Based on averages for other plants, project descriptions, and EIA and EPA reports.

Renewable Northwest Project

Executive Director
Northwest Conservation Act Coalition

Rachel Shimshak
Project Director

1130 SW Morrison
Suite 330
Portland, OR 97205

Phone
503.223.4544
Fax
503.223.4554

The Columbia Hills wind projects would help avoid new fossil-fuel generation, and help mitigate the air impacts of purchased power and gas CTs. Based on average figures, and at full project potential, the CARES and KENETECH developments would displace annual emission of over 330,000 tons of CO_2, 2,730 tons of SO_2, 1,300 tons of NO_x, and 1,400 tons of methane from fossil fuel generation. 3

The avian kills estimated in the Columbia Hills EIS must be viewed in the perspective of the benefits of the projects. Avian mortality mitigation should be appropriate and commensurate with the problem. The alternatives to the wind projects all involve fossil fuel generation, which will more than likely mean much greater and more widespread environmental losses.

Annually over 290 million birds are killed in the US each year. About 150 million deaths result from collisions with man made structures (vehicles, tall structures, windows). The effects of pollution and poisons claim almost 4 million birds each year. Over 500,000 are killed annually in open oil pits across the US. The Valdez oil spill killed over 300,000 birds.[2] A total of 350 birds were killed at the Altamont wind developments. 4

This is not to say that wind generation is not without its impacts. All generation has some impacts. However, the EIS did not uncover any unsolvable problems with these projects. The avian issues identified can be readily addressed through project design or modification. Ongoing monitoring will help inform future projects, and provide the scientific evidence necessary to confront speculation with fact. 5

The wind projects are consistent with the purpose of the 1980 Northwest Power Act. It has been fourteen years since the Act first stated that the Region's priority resources would be energy efficiency and renewables. The Power Planning Council called for the development of wind energy in their last Power Plan. These wind projects are the type of development that matches the Act's intent and fulfill the Council's directives. 6

Moving forward with these projects provides utility-level experience and builds regional capabilities. These wind projects are the first steps to fostering viable, commercial and clean alternatives to fossil fuel generation. Without these wind projects there will be no current alternative to gas CTs; and once built CTs are likely be producing for twenty years or more 7

Since renewables use indigenous resources, labor and supplies, much of the investment remains in the regional economy. In contrast, at least 60% of the cost of a gas turbine flows out of the region to purchase Canadian natural gas. 8

Proceeding with these projects will benefit the environment. Delay would only hamper the development of wind energy and lose the window of opportunity we have now. 9

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[2]From Richard Curry of Kenetech Windpower and Don Aitken of The Union of Concerned Scientists.

Thank you, again, for opportunity to comment.

Sincerely,

Peter West
Senior Policy Analyst

enclosure: Air Emissions Fact Sheet

DRAFT

Renewable Northwest Project

A project of the Northwest Conservation Act Coalition

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A Summary of 1991 US Electric Utility Air Emissions from Fossil-Fuel Combustion

10

Generating electricity using fossil fuels results in significant air pollution. US electric utilities are major sources of the worst air pollutants: *carbon dioxide* (CO_2), *sulfur oxides* (SO_x), *nitrogen oxides* (NO_x), *methane*, and *particulate matter* (PM-10). This report summarizes air emissions produced by the electric utility industry (Utility) in the US and the Western States. Due to the interconnected nature of electricity generation and transmission in the western US, this report includes the states of Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

US Emissions

Table 1, at right, outlines 1991 US Utility air emissions[1], which account for:

- 71.3% of total US sulfur dioxide, or 14.3 million metric tons (MMT).[2,3]
- 35.7% of total US carbon dioxide or 1,736.2 MMT of CO_2 gas. Coal was responsible for 86.0% of this.[4]
- 32.6% of the total NO_x emissions, or 6.8 MMT.[5]
- 18.0% of all methane emissions, or 4.9 MMT. Coal caused 76% of these emissions; natural gas 24%.[6]
- 8.9% of particulate matter emitted or 0.23 MMT.[7]

Table 1
US Electric Utility Industry Air Emissions, 1991

Pollutant	000 Metric Tons Emitted	% of US Total Emissions
Carbon Dioxide	1,736,200	35.7%
Nitrous Oxide	14	3.2%
Methane	4,910	18.0%
Sulfur Oxides	14,319	71.3%
Nitrogen Oxides	6,788	32.6%
Carbon Monoxide	280	0.3%
VOCs	30	0.1%
PM-10	230	8.9%

Source: see footnotes 3 and 4.

Western States Emissions[8]

Table 2, below, summarizes the available 1991 Utility air emission data for 9 Western States (WS). These emissions account for:

- 42.9% of the WS SO_x total, or 346,090 metric tons (MT).
- 35.1% of the WS total NO_x emitted, or 529,330 MT.[9]
- Approximately 19.6% of the estimated 915.2 MMT CO_2 emitted[10] in the WS, or 179.7 MMT CO_2[11]. A greater reliance on hydropower in the Western states is why regional utilities, as a group, have relatively lower emissions of most pollutants.
- Western utilities were comparatively minor sources of PM-10, CO, and VOCs.

Table 2
Western Region Electric Utility Industry Air Emissions, 1991

Pollutant	Tons Emitted	% of WS Total Emissions
Carbon Dioxide	179,700,000	19.6%
Sulfur Oxides	346,090	42.9%
Nitrogen Oxides	529,330	35.1%
Carbon Monoxide	31,050	0.6%
VOCs	2,944	0.5%
PM-10	27,660	1.6%

Source: See footnotes 4, 9, 10, and 11.

Why These Pollutants Matter

Documented human health impacts exist for carbon monoxide, nitrogen oxide, sulfur oxide, and particulate matter. Each has serious respiratory and cardiovascular effects, and are known or suspected to be carcinogenic. In sufficient concentrations, any of these pollutants can be fatal. These pollutants, and volatile organic compounds, are classified by the US Environmental Protection Agency as 'criteria pollutants'[12].

All these pollutants are particularly injurious to people with existing respiratory and/or cardiovascular problems. Asthmatics, children, the elderly, and people with chronic lung diseases (bronchitis, emphysema) are also extraordinarily susceptible to health effects from SO_x emissions.

Greenhouse Gases and Ozone Depletors include carbon dioxide, nitrous oxide, methane and volatile organic compounds. The buildup of such gasses in the atmosphere portends the possibility of a warmer than usual average Earth temperature. Resulting changes in weather patterns and rises in ocean levels could have calamitous effects on all human inhabitants. Emissions of some of these gasses also concentrate in the upper atmosphere and deplete the protective ozone layer, resulting in increasing in skin cancers, among other things.

Sulfer, nitrogen and carbon in the atmosphere combine with moisture to form various acid rains, which destroy lakes and forests and lower crop yields.

Table 3

Annual Avoided Air Emissions for Renewable Energy

Metric Tons	CO2	SO2	NOx	N2O	Methane	CO	PM-10	VOCs
1 aMW	7,903	65	31	1.39E-05	34	1	1	0
75 aMW	592,761	4,899	2,313	1.04E-03	2,517	85	72	10

Source: See footnote 3.

Clean Air Benefits of Renewable Energy

- Developing renewables would mainly displace fossil-fueled generation. Table 3 shows annual avoided emission figures for each average megawatt (aMW) of renewable energy, and for a 75 aMW mix of renewable projects.

For additional information or more detail, contact Andrew Geller at the Renewable Northwest Project at (503) 223-4544.

April 7, 1995

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1 All data herein pertain to 1991 US electric utility air emissions from fossil fuel combustion unless otherwise noted. The year 1991 was the most representative, and has the most complete data.

2 One metric ton equals 2204.6 pounds or 1.1023 short tons.

3 US EPA, National Air Quality and Emissions Trends Report 1993, Tables 3-1, 3-5, 3-7.

4 Energy Information Administration, Emissions of Greenhouse Gases in the United States 1987-1992, Tables 16-20, 29, C5; EIA, Monthly Energy Review March 1994, Tables 4.4, 6.2, 7.3; EIA, Petroleum Supply Annual 1993, v.1, Table 51.

5 See note 3.

6 See note 4.

7 See note 3.

8 RNP calculated a Western Region (WR) carbon emission rate using electric utility fossil fuel resource consumption data for 1991, and EIA carbon emission coefficients to arrive at an estimate of total electric utility carbon emissions.

9 US EPA, "QUERIES" System, National Inventory.

10 Based on US Census Bureau population totals for WR states, applied to the US CO_2 emissions total.

11 EIA, Electric Power Annual 1992, Table 16; EIA Monthly Energy Review, March 1994, Tables A1-A5; EIA, Emissions of Greenhouse Gases in the US 1987-1992, Tables A1, A3, A4; US Census Bureau Data Base.

12 The Clean Air Act requires that the EPA Administrator publish a list of pollutants that have adverse effects on public health or welfare, and which are emitted from numerous and diverse stationary or mobile sources. For each pollutant, a "criteria" document must be compiled and published by the Administrator. The criteria are scientific compilations of the studies documenting adverse effects of specific pollutants at various concentrations in the ambient air. For each pollutant, NAAQS are set at levels which, based on the criteria, protect the public health and the public welfare from any known or anticipated adverse effects.

Responses to May 1, 1995 Comment Letter from Renewable Northwest Project

1. Comment noted.

2. Comment noted. This information will be considered in reference to Figure 1.3 and the No Action Alternative in the Draft EIS.

3. Figure 1.3 of the Draft EIS concurs that wind energy contributes much less air pollution than other more conventional energy resources. However, the Proposed Action is not likely to displace any existing generating resources and would be built as a demonstration project.

4. Comment noted. Avian impacts and appropriate mitigation measures are discussed in Section 2.5 of the Draft EIS as amended by this document.

5. Comment noted. The environmental impacts associated with various energy resources were identified in the RP EIS, incorporated by reference into this EIS. BPA and Klickitat County agree that the avian monitoring and mitigation identified in this EIS adequately address the avian issues.

6. Comment noted. Part S.1 of this document concurs with this comment.

7. Comment noted. As stated in Part S.2.2 of this document, an objective of the Proposed Action is to test the ability of wind energy to provide a reliable, economical, and environmentally acceptable energy resource in the region. This comment also supports the Draft EIS discussion of the No Action Alternative.

8. Comment noted. This statement has been added to Section 2.8.4.1 of the Draft EIS in Part 2 of this document.

9. Comment noted. Section S.6 of the Draft EIS addresses the benefits and disadvantages of implementing a proposal at some future time. See also General Response No. 4.

10. Comment noted. Part 2 of this document adds this paper to Chapter 5.0 of the Draft EIS as a reference.

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 KENETECS 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. FISSER: 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

areas. 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 RENETECH, 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 as 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 RENETECH 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 Grey Squirrel. 2

No. 3, my opinion is that through the wind 3

power projects it is currently proposed NPA 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 KENETECS 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 stringe N, Y and Z should be moved to avoid white oak stands. At the very minimum, Klickitat County and NPA 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 Grey 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

Grey 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 Grey 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. Grey 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 Grey 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 KENETECS EIS it is estimated that only six to twenty raptors could die. 13

Based on the California report, KENETECS'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 KENETECS 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 effect 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 continued 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 grey squirrels and western bluebirds. No. 3, no road construction or turbine construction within a quarter mile of known western grey 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 1288 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

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developing out in Maine.

A KENETECH review of promising sites in the northeast turned up several that didn't materialize and the Berkshires and Cape Cod and Hamptons region of Long Island. Quote, they're all impossible end, quote says KENETECH vice president Rep 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.

The point here I guess is why in Klickitat County but not in the Berkshires, 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 given 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

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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. 22

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 grey 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 grey 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 effect 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. 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, 24 25

then we would want to halt further development.

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. 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 1,000 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

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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 me a couple minutes to update me on where they are in those technological fixes.

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 imperceptible 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

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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 bui ding a new facility that could desolate repid populations. 29

Fina y, another reason it wou d 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 2 st. 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 30 31 32

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 35

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 RENETECH 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 1900 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 these 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.

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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 me, 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.

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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.

MS. YANGORA: 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

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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 Californain 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 Gibralter, 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. TARGORA: 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 potentitiel to demonstrate that wind power is a viable solution and it can be one of the sources as part of the Northwest Resource portfolio.

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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.

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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

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not clear right now that an adequate study has been performed. We are also very concerned about that. 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.

MR. 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

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

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 Audiboe 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 KENETECS, 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 as 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 KENETECS, 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 55 56

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 nonevient species, critical habitat for the western grey 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 hands 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 WNPPSS. 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 dreft 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.

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 REMETECE 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 KENNETECH 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 KENNETECH 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.

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

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e lot of other food. They got their own food out there, and they eat 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 see 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 we 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 see, 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 Sinzar 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. KEMETECH 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 effect 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 SENETECH 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 so many people have said yes, I can see all sides of the issue on this. I look at the LaFevres and Lindens and Sawkins 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.

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 peak run of the salmon to get them through so 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

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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.

I talked to Greg Peremba and he put me in touch with the individual who was doing computer

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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.

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, Moxee, Oregon, 97060. 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 tributary. 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 managerious fish runs of the mighty Columbia. There is no mitigation possible for the

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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 managerious 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.

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

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.

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.

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

crucial to the bird. Additionaly, 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

MR. 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. 82

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. 83

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. 85 86

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 vein. 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 Irie Harvey. Are there other people who are going to want to speak? Bill Leyton.

MR. LAYTON: I am Bill Leyton. 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 over 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 descendent of the Yakama Nation. We have a lot of land right there. I am one of the descendents 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 it 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

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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.

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MS. OWEKANA: I come to interpret for my mother, but she didn't show up. My name is Selgia. 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 men 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

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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 got 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 men brought a book of bible across. He don't live by it. He don't read it the way he should.

White men is destroying himself and the enemies are going to destroy every one of these dams if your white men 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 buffaloe, 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.)

3.4 Public Hearing Testimony (April 5, 1995) and Responses

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 2.6.3.2 on pages 2-57, 2-58, and 2-59 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 Responses No. 1 and 4 and response no. 2 to the May 1, 1995 written comment letter from the Central Cascades Alliance.

22. Comment noted.

23. See response no. 3 to the May 1, 1995 written comment letter from the Central Cascades Alliance.

24. See response no. 22 to the May 1, 1995 written comment letter from the Central Cascades Alliance.

25. Avian injury and mortality monitoring measures have been added to the Preferred Alternative.

26. Comments noted.

27. Comment noted. The purpose of the hearing was to receive comments on the KENETECH and CARES Projects and not to engage in a dialogue with developers about current technologies.

28. Comment noted. See response no. 18 to the May 1, 1995 written comment letter from the Central Cascades Alliance.

29. See response to comment nos. 24 and 25.

30. See General Response No. 2.

31. See General Response nos. 10 and 11.

32. See response no. 22 to the May 1, 1995 written comment letter from the Central Cascades Alliance.

33. See response to comment no. 25.

34. If a Conditional Use Permit is granted by Klickitat County, the County Board of Adjustment would conduct annual reviews of compliance with permit conditions.

Responses to Oral Comments from Peter West

35. Comments noted. See responses to May 1, 1995 letter from Renewable Northwest Project.

36. Comments noted. See response to comment no. 35.

37. Comments noted. The Applicant's purpose and objectives for constructing and operating the proposed project are discussed in Section S.2 of the Draft EIS. Also, see Section 1.4 of the Draft EIS which discusses the No Action Alternative, i.e., what could happen if the Columbia Wind Farm #1 project is not built.

38. Comments noted. See General Response No. 4.

39. Comments noted. Socioeconomic benefits from the proposed project are discussed in Section 2.8.4 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. 12 to the May 22 written comment letter from the WDFW. Also, see General Response No. 1.

Responses to Oral Comments from Sally Schulinger

41. Comments noted. Also, see Section 1.4 of the Draft EIS which discusses the No Action Alternative, i.e., what could happen if the Columbia Wind Farm #1 project is not built.

42. Comment noted. Revegetation (Section 2.2.4), road building and land use (Sections 2.8.4 and 2.11.4), and landscape and aesthetics (Section 2.7.4) are discussed in the Draft EIS.

43. Comment noted. Discussions of cultural and traditional uses of the site are included in Sections 2.4.3 and 2.4.4 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 1.2.6 of the Draft EIS and the Preferred Alternative described in Part 1 of this document).

    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 Columbia Wind Farm #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 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 acceptable or not.

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. Like the tower proposed for Kenetech's Washington Windplant #1, the turbine tower proposed for this project is tubular in shape and will provide no perching opportunities. The Project does use a tower that is taller than the one used in the KENETECH project, however, and guy wires are used to support it. The potential for collisions attributable to guy wires is discussed in General Response No. 12.

49. Comment noted. Currently proposed mitigation measures to protect western gray squirrels are listed in Section 2.6.5 of the Draft EIS and have been supplemented by additional measures included in the Preferred Alternative.

50. Comment noted. Mitigation measures to address noxious weeds and minimize the impacts of road construction are included in Section 2.2.4 of the draft EIS. In addition, Part 2 of this document adds the following mitigation measure to more fully address the control of noxious weeds: A noxious weed management plan would be developed for the Project site and reviewed by the Washington and Klickitat County Noxious Weed Control Boards. The Noxious Weed Control Boards would be consulted and involved to make sure that all feasible measures are taken to control the introduction and spread of noxious weeds or other potentially hazardous plants on the Project site by construction equipment.

51. Comment noted.

Responses to Oral Comments from James LaFevre

52. Comment noted.

Responses to Oral Comments from Dennis White

53. The comment regarding support for the development of alternative and new energy sources is noted.

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 federal laws protecting eagles and migratory birds.

56. Comments noted. A primary goal of the Proposed Action is to test the ability of wind energy to provide a reliable, economical, and environmentally acceptable energy resource in the region. Mr. White is correct in stating that the Project would not replace any existing generating resources. However, the Project may demonstrate wind energy as a viable resource that could be added to future resource portfolios. Diversification of the resource portfolio is considered necessary to protect BPA and its customers against risk. Potential does exist for wind energy to displace energy generated from fossil fuel combustion projects.

57. Comments noted. See the responses to the May 22, 1995 WDFW's comment 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 not 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 1.4 of the Draft EIS discusses the No Action Alternative, i.e., what could happen if the Columbia Wind Farm #1 project is not built. Also, see General Response No. 4.

62. See Part 1 of this document, which describes the Preferred Alternative. Avian monitoring has been added to the Preferred Alternative as a means of assessing the Project's impacts on birds..

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. See response no. 3 from Mr. Walker's first undated written comment letter, and response no. 6 and 7 from 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 General Response No. 10.

68. The comments regarding deer sightings are noted. Section 2.6.3 of the Draft EIS identified the presence of small herds of deer on the Project site. As discussed in Section 2.6.4 of the Draft EIS, the direct loss of habitat used by the deer would be nominal in relation to the availability of these habitats on the Project site and in the county.

69. See Response no. 65, above.

70. See General Response No. 12.

71. Mitigation measures to minimize bird strikes are discussed in Section 2.5.5 of the EIS. The Preferred Alternative in Part 1 of this document discusses avian monitoring as a mitigation measure. Also, the USFWS final Biological Opinion requires avian mortality monitoring.

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 to assure that noise standards of WAC 173-60 would not be exceeded are discussed in Section 2.9.3 of the Draft EIS. Also see Response No. 65, above.

Responses to Oral Comments from Jill 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 1.2.6 of the Draft EIS). See General Response No. 9 regarding federal laws protecting eagles and migratory birds.

74. Comment noted.

75. Current research results have been applied to the design of the Project. Also, see General Response No. 9 regarding federal laws protecting eagles and migratory 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 Thies

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 federal laws protecting eagles and migratory birds.

83. Current research results have been applied to the design of the Project. Also, see General Response No. 9 regarding federal laws protecting eagles and migratory birds.

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 the lead agencies and third party consultants to meet the environmental review requirements of NEPA and SEPA. New or additional mitigation measures are discussed in Parts 1 and 2 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 wind energy 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 1.2.6 and 2.6.5. New or additional mitigation measures are discussed in Parts 1 and 2 of this document.

90. Comment noted. Mitigation measures to address noxious weeds and the impacts of road construction are included in Section 2.2.4 of the draft EIS. In addition, a Noxious Weed Management Plan has been incorporated into the Preferred Alternative in Part 1 of this document to more fully address the control of noxious weeds.

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 wind energy 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.

PART 4: DISTRIBUTION LIST

Part 4 Distribution List

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APPENDIX A

Appendix A Qualifications of EIS Preparers

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 evaluatin, 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 trafic engineering. Staff attorneys are knowledeable 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: Project Management

Years of Experience: 15

Special Skills: Project management; 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.

Jonathon 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 University, Arcata, California, 1973.
B.B.A., Wildlife Management, Nichols College, Dudley, Massachusetts, 1967.

James A. Estep

Areas of EIS: Birds

Years of Expertise: 15

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 and 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. Birdsey

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 lanning, 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, partk and recreation planning and design, and preparation of contract documents.

Education: B.L.A., Landscape Architecture, University of Minnesota, Minneapolis, Minnesota, 1984.

Mark A. Matthies

Areas of EIS: Botanical Resources

Years of Expertise: 9

Special Skills: Wetlands ecology and management, vegetation monitoring, plant community analysis and classification, plant ecology and taxonomy, reparian and wetland restoration, soil classification and analysis, and vegetation mapping.

Education:
M.S., Range and Wildland Science, University of California, Davis, California, 1988.
B.A., Environmental Studies, Bethel College, North Newton, Kansas, 1975.

Sarah E. Cassatt

Areas of EIS: Wetlands, water quality.

Years of Expertise: 7

Special Skills: Aquatic resource management, water quality analysis, sampling program design, habitat evaluation and impact assessment, stormwater management, wetland delineation, wetland mitigation and monitoring design, preparation of EIS technical sections, and permitting assistance.

Education:
B.S., Environmental Sciences, The Evergreen State College, Olympia, Washington, 1983.

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 statement. 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: Land use, socioeconomics, aesthetics, public services, health and safety, transportation.

Years of Experience: 16

Special Skills: Project management and preparation of SEPA and NEPA EIS's; 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.

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B.S., Civil/Environmental Engineering, University of Washington, Seattle, Washington, 1979.
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Mark L. Ingham

Areas of EIS: Earth (soils and geology).

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.
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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.

APPENDIX C

Ibis
environmental
services

August 16, 1995

Kathy Fischer
Bonneville Power Administration
KF-ECW-3
P.O. Box 3621
Portland, OR 97208-3621

Re: CARES proposed Windpower plant in Klickitat County, Washington

Dear Ms. Fischer,

I have been asked to address the issue of whether the use of guy wires may be a contributing factor in avian mortality at wind turbines. My comments are based on my original research in Altamont Pass, California (*Wind Turbine Effects on Avian Activity, Habitat Use, and Mortality in Altamont Pass and Solano County WRAs*), a study I recently completed for the California Energy Commission (*Continued Examination of Avian Mortality in the Altamont Pass Wind Resource Area*), and my extensive experience with avian/windplant issues.

Theoretically, the primary concern regarding the use of guy wires is that birds may be more at risk of collision with spinning blades when perching near the turbines. Secondly, birds may be injured or killed if they collide with the wires themselves. However, our research in the Altamont Pass suggests that the use of guy wires does not noticeably contribute to mortality in either of these two ways.

Our Altamont Pass data showed that of the five basic turbine types we studied, the two with guy wires had the lowest mortality rates: one was a tubular tower (referred to in our report as guyed-pipe turbines) and one was a vertical-axis turbine. No other turbines with guy wires have been studied for avian mortality in this country or in Europe. Although raptors occasionally perched on guy wires at both of those turbine types, the guy wires on both types were below or outside the impact area of the spinning blades. Because birds did not have to pass through the spinning blades to perch on guy wires (compared to other turbine types where birds may have to pass through spinning blades to perch), their risk of collision with spinning blades was comparatively low. We surmised that this was one reason for the low mortality at these turbine types.

340 Coleman Drive, San Rafael, California 94901 Telephone/Fax 415-459-3441

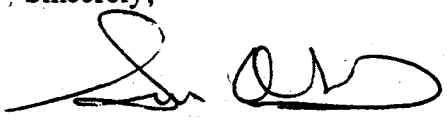
In addition, the scarcity of mortalities at both these turbine types suggests that birds seldom if ever are killed by colliding into the guy wires. We also found no bird mortalities at the 48 meteorological towers we surveyed, most of which had guy wires. For these reasons, I believe that the presence of guy wires (as designed above) does not significantly affect collision mortality with either blades or wires.

As with the two turbine types mentioned above, the guy wires on the AWT-26 turbine are below the lowest point of the spinning blades and therefore birds do not have to pass through the plane of the blades to perch on the guy wires. Consequently, I believe the likelihood of collisions with blades on the AWT-26 is very low.

Further, because turbine guy wires are almost one inch thick, thicker than most transmission line wires that cause the majority of avian collision deaths, I feel the potential for avian collision with turbine guy wires is also low. If bird flight diverters were placed on these guy wires, the likelihood of avian collision should be reduced to insignificant. The use of such devices has proved to be an effective mitigation measure for horizontal powerlines (APLIC 1994), and should work equally well on diagonal guy wires. USFWS can review the marking proposal to ensure adequacy.

Hopefully this letter has provided some useful information that will assist the agencies in their assessment of impacts. If you wish to discuss any of these issues please feel free to call me at (415) 459-3441.

Sincerely,



Sue Orloff

cc Flowind Inc., CARES

Citations

Avian Powerline Interaction Committee (APLIC). 1994. Mitigating bird collisions with power lines. The state of the art in 1994. Edison Electric Institute. Washington, D.C.

Orloff, S. and A. Flannery. 1992. Wind turbine effects on avian activity, habitat use, and mortality in Altamont Pass and Solano County WRAs. Prepared by BioSystems Analysis, Inc., Tiburon, California, for California Energy Commission, Sacramento.

Orloff, S. and A. Flannery. 1995. Continued examination of avian mortality in the Altamont Pass wind Resource Area. Draft report. Prepared by BioSystems Analysis, Inc., Tiburon, California, for California Energy Commission, Sacramento.

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