April 2003
DOE/EA-1465

DEPARTMENT OF ENERGY
Western Area Power Administration
Finding of No Significant Impact
Wind Energy Center Edgeley/Kulm Project, North Dakota

Summary -- Basin Electric Power Cooperative (Basin), on behalf of Florida Power and Light Energy North Dakota Wind, LLC (Dakota Wind), applied to the Department of Energy (DOE), Western Area Power Administration (Western) to interconnect the Wind Energy Center Edgeley/Kulm Project (Edgeley/Kulm Project), a proposed windfarm development in La Moure County, North Dakota, to Western's Edgeley Substation. Western proposes to make modifications at its Edgeley Substation for the interconnection. Central Power Electric Cooperative (Central Power), a Basin member, would construct a 115-kilovolt (kV) transmission line between the proposed windfarm and Western's Edgeley Substation. All financial responsibility for the Edgeley/Kulm Project would be borne by Dakota Wind, Basin, and Central Power.

The environmental assessment (EA) entitled "Wind Energy Center Edgeley/Kulm Project, North Dakota (DOE/EA-1465)" was distributed for public and agency review on March 3, 2003. The EA was revised based on comments received and the EA was approved in April 2003. Based on the EA, Western has determined that the proposed Edgeley/Kulm Project would not result in any significant environmental impacts and the preparation of an environmental impact statement (EIS) will not be required. The basis for this determination is described in this Finding of No Significant Impact (FONSI).

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Additional information and copies of the EA and FONSI are available to all interested persons and the public from the person named above. For general information on DOE National Environmental Policy Act (NEPA) activities contact:

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Purpose and Need -- Basin has applied to interconnect with Western's transmission system at Edgeley Substation. Western is responding to Basin's request for an interconnection with its transmission system. In responding to this request, Western would provide transmission service under its Open Access Transmission Policy, address the interconnection application following Western's General Guidelines for Interconnection, protect transmission system reliability and service to existing customers, and consider the proposed project's objectives. Western's action is to decide if the proposed windfarm can be interconnected with Western's transmission system.

Project Description -- Western's action for the Edgeley/Kulm Project would involve modifying its existing Edgeley Substation to accommodate the addition of a line bay for the proposed windfarm. Western would enter into construction and interconnection agreements with Basin to address the interconnection. Modifications would include:

1. Constructing a main and transfer bus that would include the addition of the 115-kV windfarm line bay.
2. Replacing a wood-pole structure outside the substation with a new three-pole structure.
3. Expanding the Edgeley Substation to accommodate the bay additions.

Western has analyzed the environmental impacts not only of its action but of the impacts associated with the entire project. The proposed Edgeley/Kulm Project connected actions analyzed in the EA include the following:

1. A windfarm with 27 1.5-megawatt (MW) wind turbines, producing an average output of 21 MW. Each turbine would be about 300 feet tall and sit on an operational footprint of about 50 feet by 50 feet.
2. A collection and transmission system that would collect energy generated by the windfarm and transmit it to Western's Edgeley Substation. Dakota Wind's collection system would consist of a radial feed collection system with individual collection lines from the turbines to pad-mounted transformers near each turbine's base. Collection lines would be buried in trenches beneath proposed access roads between the transformers and a common collection trench that would be beneath Pomona Township Road. The collection trench would end at a proposed new collection substation at the intersection of Pomona Township Road and State Highway 13, west of Edgeley, North Dakota.
3. A new 10 mile, 115-kV transmission line that would be constructed along State

Highway 13 between the new collector substation and Western's Edgeley Substation. The transmission line would be constructed and operated by Central Power.

The EA also analyzes the cumulative impacts of a project immediately south of the proposed Edgeley/Kulm Project that would be jointly developed by Dakota Wind and Otter Tail Power Company (Otter Tail). Preliminary plans for the Otter Tail Project indicate that Dakota Wind would construct and retain ownership of 13 wind turbines that would be connected to Otter Tail's 41.6-kV transmission system near Edgeley. The Otter Tail project was evaluated from a cumulative standpoint relative to its potential additive impacts in the vicinity of the proposed project.

The Public Process -- To allow an early and open process for determining the scope of issues and concerns related to the proposed action (40 CFR 1501.7), public scoping was provided by Western. Western notified Federal and State agencies and affected landowners of its determination to prepare an EA and invited comments in a letter dated January 13, 2003. To date, Western has not received any comments in response to its letter. The EA has been distributed for review to affected landowners and Federal, State, and local agencies that have jurisdiction or permitting authority for the proposed project. Comments received on the EA have been incorporated and considered in this determination on whether or not to prepare an EIS. Due to the U.S. Fish and Wildlife Service's (USFWS) participation and special expertise in the proposed Edgeley/Kulm Project, Western invited the USFWS to be a cooperating agency on the EA. No other agencies have requested to become a cooperating agency.

Western has initiated consultation with the North Dakota Intertribal Reinterment Committee (NDIRC), and will complete consultation with the NDIRC and the State Historic Preservation Office to meet its obligations under the National Historic Preservation Act (NHPA, 16 U.S.C. 470 et seq., 2000) before authorizing construction activities. Western has met its obligations under the Endangered Species Act (7 U.S.C. 136; 16 U.S.C. 460 et seq., 1973) and will continue nation-to-nation consultations with interested Native American tribes.

Alternatives -- DOE's NEPA regulations require that an EA include a discussion of the no action alternative (10 CFR 1021.321(c)). Western would accept Basin's request for interconnection, or deny the request and choose the no action alternative. The no action alternative provides a baseline against which the effects of the proposed action may be compared. In short, the site-specific and direct impacts associated with the proposed Edgeley/Kulm Project would not occur in the project area if the project does not go forward.

Environmental Impacts -- Western's conclusions about the proposed project's environmental impacts are based on information contained in the EA issued in April

2003. The EA is available upon request. In reaching conclusions about the proposed project's environmental impacts, Western has considered the proposed project, including best management practices (BMPs) and environmental protection measures proposed by Western, Dakota Wind, Basin, and Central Power with the project.

The existing environment and the potential environmental impacts were identified and evaluated for the following resources:

- Geology and soil
- Air resources
- Water resources
- Vegetation
- Wetlands
- Wildlife
- Threatened, endangered, proposed, and candidate species
- Socioeconomics
- Environmental justice
- Land use
- Visual resources
- Noise
- Health and safety issues
- Recreation
- Cultural
- Native American religious concerns

Based on the EA, Western has concluded that, with the BMPs and environmental protection measures proposed for the project, the construction and operation of the proposed Edgeley/Wind Project would not require mitigation beyond that already proposed by Western, Dakota Wind, Basin, and Central Power. In addition, Western will complete consultation with the NDIRC and the North Dakota State Historic Preservation Officer (SHPO) before authorizing construction activities for the proposed project.

The basis for Western's conclusions about the proposed Edgeley/Kulm Project impacts to these resources is summarized below.

Geology and Soil. There are no known metallic mineral deposits in the project area, and known gravel and sand deposits are generally of poor quality. Potential adverse impacts to soil include increased erosion from runoff due to compaction and loss of vegetation and possible impacts caused by fuel spilling from construction equipment. Western has concluded that the proposed Edgeley/Kulm Project would not cause a direct, indirect, or cumulative significant impact to geology and soil based on the BMPs proposed and the lack of known mineral deposits in the project area.

Air Resources. The construction of the proposed Edgeley/Kulm Project has the potential to adversely affect air resources due to fugitive dust generation and the operation of construction equipment. The limited duration of construction, along with implementation of BMPs, are expected to mitigate air quality effects to levels below Federal and State standards. In addition, Western would ensure that any complaints that may arise about fugitive dust emissions would be addressed in an efficient and effective manner. As a result, Western has concluded that no direct, indirect, or cumulative significant impacts to air resources would occur from the construction and operation of the proposed Edgeley/Kulm Project.

Water Resources. Construction of the proposed Edgeley/Kulm Project has the potential to degrade water resources due to erosion and fuel spills. However, considering the topography and distances to water resources, avoidance of water resources during project planning, requirements for securing a permit to discharge storm water runoff, and the BMPs proposed for the project, Western has concluded that no direct, indirect, or cumulative significant impacts to surface water would occur. Based on the depth to groundwater (greater than 40 feet), proper fuel handling and storage, and appropriate spill contingencies as specified by Dakota Wind's BMPs and Western's construction standards, no significant impact to groundwater resources would occur during construction of the proposed project.

Vegetation. Construction and installation of project facilities would cause temporary and permanent loss of vegetation. Unmitigated loss of wetland or native prairie vegetation would be significant. However, the project facilities would be sited to avoid wetlands and temporary loss of any native prairie would be minimized by reseeding with native species. Based on these measures and the other BMPs described in the EA, Western has concluded that the proposed Edgeley/Kulm Project would not cause direct, indirect, or cumulative significant losses of vegetation or wetlands.

Wildlife. Significant impacts to wildlife could result from direct or indirect mortality substantial enough to impact populations both during construction and operation of the proposed project. Construction activities that remove vegetation and disturb soil may cause direct impacts to individuals of less-mobile species through direct mortality or displacement and exposure to predators. In addition, both temporary and permanent habitat loss could lead to some population loss, although due to low habitat diversity, such losses would be minimal. Construction-related impacts would be minimized by reseeding temporarily disturbed areas and employing BMPs that require management of waste materials that could attract predators to the area. Considering the low habitat diversity and the BMPs that would be implemented with the proposed project, construction-related wildlife losses would not cause a decline in wildlife populations, so no significant impact to wildlife would occur from construction activities associated with the proposed

project.

Operation of the proposed windfarm and transmission line would increase the potential for avian mortalities due to collisions with the wind turbine blades and the transmission line conductors, and electrocution from exposed electrical connections. The potential for the collisions were addressed during the siting of the proposed wind turbines and transmission line. As a result, individual turbine towers would be located away from low passes between wetlands where waterfowl are more likely to fly, which would reduce the likelihood of avian collisions. In addition, advanced wind turbine tower design and strobe lights would be used to further mitigate avian collisions. The effectiveness of the siting and design measures would be evaluated through a monitoring program developed in consultation with the USFWS and the U.S. Geological Survey (USGS). Searches around the proposed wind turbines would be conducted at times coinciding with annual migration, as well as during the nesting season (late spring and summer) to identify impacts to migrant and breeding birds. This investigation and monitoring effort would provide baseline data to USFWS and USGS for future planning and regulation of wind energy projects. Based on the siting and design considerations and the implementation of the monitoring program, Western has concluded that the operation of the proposed windfarm would not cause substantial declines to avian populations; thus, there would be no direct, indirect, or cumulative significant impact.

The proposed transmission line is not expected to bisect daily movement patterns of avian species, because the majority of wetlands are located outside of the proposed transmission line right-of-way. However, approved marking devices would be placed at 100-foot intervals and staggered on each overhead ground wire, if line strikes are identified as a problem. Electrocutions on the transmission line would be minimized by employing design practices described in the EA. Therefore, the proposed transmission line would not cause a direct, indirect, or cumulative significant impact to wildlife.

Threatened and Endangered Species. The endangered whooping crane (*Grus americana*) and bald eagle (*Haliaeetus leucocephalus*) may migrate through the project area. Since neither whooping cranes nor bald eagles are resident in the vicinity of the proposed project, no direct or indirect impacts to these species are expected from construction of the proposed project. Migrating whooping cranes could use wetlands or uplands in the vicinity of the proposed project for feeding or roosting. While it is possible that either of these species could collide with turbines during spring or fall migration, such collisions would be unlikely. Migrating bald eagles and whooping cranes tend to fly at altitudes well above the height of wind turbines. Also, since bald eagles tend to migrate along river corridors, they are unlikely to migrate through the proposed project area. Based on the above, Western determined that the proposed project may affect, but is not likely to

adversely affect, whooping cranes or bald eagles. Based on this determination and USFWS's concurrence in an April 1, 2003 letter, Western has concluded that the proposed project would not cause a significant direct, indirect, or cumulative impact to any threatened or endangered species.

Socioeconomics. Construction crews would range from 80 to 120 people and would have effects on local services and businesses. However, considering the short duration proposed for construction, these effects would not constitute a significant impact on area services or businesses.

Environmental Justice. The Standing Rock Sioux Reservation is 85 miles west of the proposed project and is the closest minority and low-income population. Therefore, discrimination of or disproportionate impacts to low-income, minority, and subsistence populations resulting from of the proposed Edgeley/Kulm Project are not anticipated, and a significant impact would not occur.

Land Use. Current land uses would be affected by the proposed project, primarily by causing interferences to agricultural uses from the proposed windfarm and transmission line. Western, Dakota Wind, and Central Power would compensate landowners for land, both purchased and leased, that is required for the proposed project. Impacts to existing land uses and agricultural practices would be reduced by siting structures in previously disturbed areas, or in areas where agricultural practices have been modified. About one percent of the total approximate 3,000 acres comprising the proposed project area would be affected by operation of the proposed project. As a result, and in consideration of land uses during siting of the windfarm and ancillary facilities, the proposed project would not foreclose future land uses. Based on the compensation proposed for landowners and no foreclosure of future land uses, Western has concluded that the proposed project would not cause a direct, indirect, or cumulative significant impact to land use.

Visual Resources. Wind turbines, transmission line structures, and construction of access roads are examples of changes to public viewing that would result from the proposed project. The EA describes the visual characteristics of the area. Because the area contains no highly distinctive or important landscape features, the proposed project would not significantly impact visual resources.

Noise. The proposed project area is located in a rural, predominantly agricultural area. Modeling results conducted for the EA predict a noise level range of between 45 and 50 A-weighted decibels (dBA) at 1,000 feet distance around the proposed wind turbines. Calculated baseline noise levels for the area are between 38 to 48 dBA. Wind speeds would likely mask the noise generated by the turbines at 1,000 feet and beyond from the wind turbines. Based on this and Dakota Wind's plans to site the wind turbines at least 1,000 feet from any sensitive

noise receptors, Western has concluded that no direct, indirect, or cumulative noise impacts would occur as a result of the proposed project.

Safety and Health Issues. Project construction work plans and specifications would be prepared to address worker safety during proposed project construction. The preparation of these documents would include appropriate performance provisions for worker protection as is required under the Occupational Safety and Health Act. Since development and preparation of these documents would be prepared as part of construction contractor bid specifications, no significant worker safety impacts are anticipated.

The EA includes an analysis of the potential impacts of the proposed transmission line on radio-frequency interference, photochemical oxidant generation, audible noise, nuisance shocks, hazardous shocks, and electric and magnetic field exposure. The long-term, mostly residential magnetic exposure at the root of the present health concern would be insignificant for the proposed transmission line given the general absence of residences along the proposed transmission line. Public exposures would be short term and at levels expected for similar Western designs and current-carrying capacity. Such exposures are well understood and have not been established as posing a health hazard to humans. The potential for nuisance shocks would be minimized through grounding and other field-reducing measures to be implemented in keeping with common industry practices. The use of low-corona line design, together with appropriate corona-minimizing construction practices, would minimize the potential for corona noise and its related interference with radio-frequency communication. Based on the above, Western has concluded that the proposed transmission line would not cause significant adverse impacts related to safety, radio-frequency interference, audible noise, nuisance shocks, hazardous shocks, or electric and magnetic field exposure.

Motor vehicle traffic near the proposed project and near the planned transmission right-of-way would increase due to the motorists traveling in these areas and the contractors working in the areas to construct the proposed windfarm. Traffic management and control of the local roadways would be considered in the forward planning and implementation of the project. With these measures, the potential for a traffic fatality is low, resulting in no significant impact.

Recreation. Hunting for waterfowl is the primary recreational activity in the area of the proposed project and is allowed at the discretion of individual landowners. Construction activities would not significantly impact hunting opportunities, since construction activities would be short-term. The operation of the windfarm would not significantly impact hunting opportunities since proposed windfarm easements would not require hunting restrictions. Recreational opportunities would still be at the discretion of individual landowners.

Cultural Resources. Research and pedestrian surveys completed to date identified several archaeological or historic sites within the project area that could potentially be affected by construction of the proposed Edgeley/Kulm Project. Those not recommended for National Register of Historic Places (NRHP) eligibility include the Brosz and Davis farmsteads, four sites of prehistoric and/or historic material scatters, and two isolated finds of historic material. It is expected that any site determined to be not eligible for the NRHP would be avoided during the siting and construction of the proposed project.

Not all areas that could potentially be disturbed by proposed project construction have been surveyed. However, pedestrian surveys will be completed for all proposed project areas and as cultural resources are identified, they would be evaluated for eligibility and effect following regulations at 36 CFR part 800, Protection of Historic Properties.

Sites eligible, recommended as eligible, or needing further evaluation for inclusion on the NRHP include: cultural site G3, the Soo Line historic railroad, the historic "Sunshine Trail," and the prehistoric Flegel Mound. Cultural site G3, a stone ring feature, is recommended for NRHP eligibility and is located on undisturbed ground adjacent to an access route corridor leading to several proposed turbine sites. Direct impact to this site would not occur because the site would be avoided during siting and construction of the proposed project. Indirect impact (e.g., visual) to the integrity of the site will be evaluated through consultation with the NDIRC and the North Dakota SHPO.

The Soo Line, a historic railroad, may be considered eligible for the NRHP under Criterion A because of association with the development of transportation systems across the country. However, through avoidance, direct impact from the proposed project on the railroad is not expected. If the Soo Line is crossed, any direct effects would be evaluated during consultation with the North Dakota SHPO.

A recommendation of the eligibility for listing on the NRHP for the historic "Sunshine Trail" is pending. Although the "Sunshine Trail" intersects the proposed transmission line route near Edgeley, direct impact would be avoided by appropriate transmission line tower placement, and restriction of line pulling and tensioning equipment. The effects of the crossing will be evaluated during consultation with the North Dakota SHPO.

The prehistoric Flegel Mound, located within the 3-mile visual buffer of the windfarm, will not be directly impacted by the proposed project. Indirect impact (e.g., visual) to the integrity of the site will be evaluated through consultation with the NDIRC and the North Dakota SHPO.

The cultural sites identified through research and/or pre-construction surveys will be avoided, and as a result, no significant impact to these sites would occur. If historic or prehistoric materials are discovered during monitoring of earth disturbing construction activities, construction would be halted and Western would be notified to initiate procedures outlined in 36 CFR part 800. These procedures include evaluating the find for eligibility and determining appropriate treatment with the NDIRC and the North Dakota SHPO. Possible visual impacts to the integrity of cultural site G3, the Soo Line, the "Sunshine Trail," and Flegel Mound are considered indirect and will be evaluated through consultation.

Western will not authorize any ground-disturbing activities until its obligations under NHPA and 36 CFR part 800 are completed. Thus, no significant impact to cultural resources is expected as a result of construction or operation of the proposed Edgeley/Kulm Project.

Native American Religious Concerns. An unmitigated adverse effect to a traditional cultural property (TCP) or a burial site would constitute a significant adverse impact. To mitigate the potential for significant effects from Western's activities in North Dakota, Western entered into a Memorandum of Agreement (MOA) with the NDIRC during 1996 to insure that provisions of the Native American Graves and Repatriation Act (NAGPRA) are addressed on lands owned and/or managed by Western. In accordance with the MOA, Western will address any concerns expressed by the NDIRC during the course of consultation and proposed project planning and construction. Western will notify the appropriate individuals, agencies, and authorities in accordance with North Dakota laws in the event that important cultural or historic resources are discovered during inventories or construction associated with the proposed project. Implementation of appropriate mitigation, including avoidance, would follow proper notifications.

Western will adhere to the MOA and require Dakota Wind and Central Power to abide by the North Dakota laws that specify avoidance during project siting. If burial or cultural sites with Native American religious value are identified prior to or during the proposed project construction, Native Americans will be notified and consulted about mitigation measures. Based on the above, no significant impact to Native American religious concerns, sacred sites, or TCPs is expected.

Determination -- The analyses contained in the EA indicate that the proposed action is not a major Federal action significantly affecting the quality of the human environment. Western has determined that preparation of an EIS is not required.

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Administrator