DEPARTMENT OF ENERGY
Western Area Power Administration
Finding of No Significant Impact
Prairie Wind ND-1 Wind Generation Project, North Dakota
DOE EA-1689

Summary – Basin Electric Power Cooperative (Basin Electric) applied to the U.S. Department of Energy (DOE), Western Area Power Administration (Western) to interconnect the Prairie Wind ND-1 Wind Generation Project (Project).

The Project, located approximately 15 miles south of Minot, North Dakota, includes seventy-seven (77) 1.5 megawatts (MW) wind turbines and associated facilities including a new collector substation, switchyard, temporary lay-down yard, access roads, and buried collector lines. Power would be delivered to the regional transmission grid via the existing Western's Max to Mallard 115 kV transmission line at a new Nelson Switchyard to be constructed, owned, and operated by Western. Basin Electric would own and operate the new wind generating facilities, collector substation, and other associated features. The Project has a nameplate rating of 115.5 MW and an estimated yearly average generation of 45 MW.

Basin Electric also applied to the Rural Utilities Service (RUS) for funding for the Wind Generation facility. Western accepted the RUS's invitation to be a cooperating agency by letter on April 8, 2008. The RUS prepared an environmental assessment (EA) for the Prairie Winds – ND 1 Project. The EA was made available for public and agency review on June 24, 2009. The review/comment period was 30 days.

The RUS received a letter during the 30-day comment period from the Environmental Protection Agency concerning potential impacts to non-jurisdictional wetlands. Although it was not specifically declared within the EA, all wetlands, including jurisdictional and non-jurisdictional wetlands in the Project area were mapped and inventoried during project planning. Impacts to all wetlands including non-jurisdictional wetlands were avoided or mitigated by project design.

The RUS also received a letter from the U.S. Fish and Wildlife Service (USFWS) dated August 3, 2009, that requested a change in the avoidance distance for measures during construction and operations from ½ mile to 1 mile. Although the Biological Assessment states the avoidance distance for measures during construction and operations should be ½ mile, the Avian and Bat Protection Plan, which is still under development, will reflect the change to a mandatory 1 mile avoidance distance.

Based on this and the analysis and findings of the EA, the RUS issued a FONSI on August 14, 2009. Following an independent review of the Final EA, Western has concurred with this and hereby accepts the conclusions and findings outlined in the EA (DOE EA-1689). Based on these findings, Western has determined that the proposed Project would not result in any significant environmental impacts, and the preparation of an Environmental Impact Statement (EIS) is not required. The basis for this determination is described in this FONSI.

Additional information and copies of the EA and this FONSI are available to all interested persons and the public through the following contact:

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Purpose and Need – Western is a Federal power-marketing agency in the DOE that sells and delivers Federal electric power to municipalities, public utilities, Federal and state agencies, and Native American tribes in 15 western and central states. The proposed action is located within Western's Upper Great Plains Customer Service Region, which operates and maintains nearly 90 substations and more than 8,000 miles of Federal transmission lines in Minnesota, South Dakota, North Dakota, Montana, Nebraska, and Iowa.

Western has received a generation interconnection request from Basin Electric to connect the Prairie Winds-ND 1 to Western's existing Max to Mallard 115 kV transmission line. The interconnection with Western's system would require the addition of a switchyard to connect to the existing Western transmission line allowing the addition of new generation resources onto Western's transmission system. According to DOE's NEPA Implementing Procedures (10 CFR Part 1021) these actions require environmental review.

In response to the Need for Agency Action, Western must adhere to the following guidelines:

- Provide Transmission Service. Western offers capacity on its transmission system to deliver electricity when such capacity is available, under Western's Tariff. The Tariff complies with the FERC's Final Orders No. 888, 888A, 888B, and 888C, which are intended to ensure non-discriminatory transmission system access. Following FERC's Orders No. 2003, 2003-A, and 2003-B, Western submitted revisions to its non-jurisdictional Tariff on January 25, 2005, to FERC. The purpose of the filing was to revise certain terms of Western's original Tariff and to incorporate the Large Generator Interconnection Procedures (LGIP) and a Large

Generator Interconnection Agreement (LGIA). Western received final approval on that filing from FERC on September 6, 2007. On March 1, 2007, Western submitted revisions to its Tariff to FERC pursuant to FERC Orders No. 2003-C, 661,611-A, 676, 676-A,2006, 2006-A, and 2006-B. The main purpose of this filing was to incorporate FERC's Small Generator Interconnection Procedures and Small Generator Interconnection Agreement and also to include revisions of certain terms relating to the LGIP and the LGIA. Western needs to respond to the interconnection and transmission service requests under the provisions of its Tariff.

- Protect Transmission System Reliability and Service to Existing Customers. Western's purpose is to ensure that existing transmission system reliability and service is not degraded. Western's LGIP provides for transmission and system studies to ensure that system reliability and service to existing customers are not adversely affected by new interconnections.

Project Description – Basin Electric recognizes the need for additional renewable energy capacity to service forecasted member load growth demands and to meet state mandated Renewable-energy Portfolio Standards (RPS). A 115 MW wind project is proposed as the least-cost renewable resource option to satisfy future load and RPS requirements. Basin Electric proposes to construct a wind-powered electricity generation facility of up to 115.5 MW nameplate rating, or 45 MW yearly average, in Ward County, North Dakota. The electricity generated by the proposed 77-turbine facility would be delivered to an existing Western power grid transmission line.

Western's action for the Project involves modifying the existing Max to Mallard 115 kV line by the addition of a switchyard which will physically interconnect the Project onto the transmission system and the authorization of a generation interconnection.

When originally proposed, the switching equipment used to physically attach the Project to Western's 115 kV Max to Mallard transmission line was to be an integral part of the substation. As the Project planning progressed, the switch equipment was moved from the substation to its own "switchyard" (Nelson Switchyard) immediately adjacent to the proposed substation. The interconnection and switching equipment will be located within a one-half acre fenced yard (switchyard) that contains a 42 foot by 42 foot steel box structure, 115 kV disconnect switches, 115 kV interrupters, and a small 20 foot by 40 foot control building. The location of the switchyard lies within a 40-acre parcel to be purchased specifically for this Project. The entire 40 acres, and thus the switchyard footprint and equipment, were included in the Cultural Resources and Biological Resources surveys and the subsequent environmental analysis.

If approved, Western would enter into a contract with Basin Electric to authorize interconnection with Western's transmission system through am LGIA.

Western analyzed the environmental impacts associated with the Project, which includes operation of the wind generation facility and ancillary facilities. DOE's NEPA Implementing Procedures require an EIS to be prepared for the addition of new generation resources greater than 50 average annual MW. The Project has a nameplate rating of 115.5 MW but its estimated

yearly average generation is about 45 MW. Unless significant effects are identified in the EA, the preparation of an EIS will not be required.

Alternatives -- DOE's NEPA regulations require that an EA include a discussion of the no action alternative (10 CFR 1021.321(c)). The no action alternative provides a baseline against which the effects of the proposed action may be compared. Under the no action alternative, the proposed action would not be implemented and the site-specific and direct impacts associated with the proposed Project would not occur in the Project area. In addition, two alternative sites (Site A and Site B) were evaluated in the EA. Site A is the preferred alternative, and this FONSI addresses the findings related to Site A.

Environmental Impacts -- Western's conclusions about the proposed Project's environmental impacts are based on information contained in the EA. That document is available upon request. In reaching conclusions about the proposed Project's environmental impacts, Western has considered the best management practices (BMP) and environmental protection measures proposed by RUS and Basin Electric.

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

- General Land Use – Prime Farm Land, Range Land, or Forest Land
- Floodplains
- Wetlands
- Cultural Resources
- Threatened and Endangered Species (Federally Listed Species)
- State Species of Concern
- Other Fish and Wildlife Resources
- Vegetation
- Soils
- Air Quality
- Water Quality
- Aesthetics
- Transportation
- Noise
- Radio and Television Interference
- Human Health and Safety
- Socioeconomic and Community Resources
- Environmental Justice

Based on the EA, Western concludes that, with the BMPs and environmental protection measures proposed for the Project, construction and operation of the proposed Project would not require mitigation beyond that already proposed by RUS and Basin Electric to mitigate potentially adverse environmental impacts. The basis for Western's conclusions about the impacts to these resources from the proposed Project is summarized below.

General Land Use - Prime Farm Land, Range Land, or Forest Land – The Project area includes both prime farmland and farmland of statewide importance. No turbines would be located on these important farmlands. Although not described fully in the EA, according to RUS, the total permanent disturbance due to roads and other activities to areas of prime farmland amounts to approximately 4 acres and to farmland of state wide importance of approximately 41. These acreages were outlined in the materials and testimony presented at the North Dakota Public Service Commission hearing on May 21, 2009. Considering the entire Project area is approximately 30,000 acres (47 square miles) and the widely dispersed nature of these lands, the permanent impact of approximately 45 acres of prime farmland or farmland of statewide importance is not significant.

No prime forest land or prime rangeland is located in the selected Project area. The USFWS maintains both wetland and grassland easements, as well as Waterfowl Production Areas in the project area, and Conservation Reserve Program (CRP) lands are common. Disturbance of these important areas and resources will be avoided where possible and restored or mitigated where necessary.

Floodplains –The Project is not located within a 100-year floodplain and no floodplains were mapped within Ward County. The Project would have no significant environmental impact or cumulative effects on floodplains in the area.

Wetlands – The Project has been designed to avoid jurisdictional and non-jurisdictional wetlands identified within the Project area foot print and is not expected to result in destruction or major disturbance of any wetland areas. If impacts to wetlands are not avoidable, Basin Electric will seek coverage under a Section 404 U.S. Army Corps of Engineers (USACE) Nationwide Wetland Permit. Any permanent impacts to jurisdictional waters will be mitigated according to USACE requirements. A Storm Water Pollution Prevention Plan (SWPPP) is required by the National Pollutant Discharge Elimination System (NPDES) permit and would be in place during construction. This required SWPPP will direct erosion control and monitoring practices and will eliminate potential erosion and any resulting contamination of wetlands. The Project will not result in a significant environmental impact or adverse cumulative effects on wetlands.

Cultural Resources – Class I and III cultural resource inventories examined 83 turbine locations (including alternate locations), access roads, underground collector lines, the substation site, and switchyard site. This inventory identified 31 sites and three isolated finds. Of the 31 sites, 19 are prehistoric sites, 11 are historic sites and 1 is a multi-component site. The Project has been designed to avoid all identified cultural resource sites. The proposed Project will not impact known cultural resources listed or eligible for listing in the *National Register of Historic Places.* The North Dakota State Historic Preservation Officer concurred with this finding by letter dated July 20, 2009. No significant impacts to cultural resources will result as a result of construction or operation of the project.

Threatened and Endangered Species – The USFWS originally identified four endangered or threatened species that could occur in the Project area. They are the whooping crane, the piping

plover, the gray wolf ,and the Dakota Skipper. Later, the USFWS indicated the Dakota Skipper not be considered since there is no habitat for them in the Project area. No critical habitat is designated for any listed species in the Project area. Based on the results of informal consultation with the USFWS, RUS determined the Project may affect, but not likely to adversely affect the threatened piping plover and would not destroy or adversely modify any piping plover critical habitat. RUS also determined that the Project may affect, but not likely to adversely affect the endangered whooping crane and the endangered gray wolf.

The determination is based on the conservation measures proposed by Basin Electric and included in the Project description. These measures included marking 10 miles of existing transmission line with visual marking devices in Ward County, constructing only un-guyed meteorological towers, burying all new collector lines, curtailing construction activities if whooping cranes are observed in the area, conducting post construction whooping crane monitoring, shutting down turbines within 1 mile of observed cranes, implementation of crane mortality monitoring protocols including turbine shutdown in the event of a crane mortality, and training of construction and maintenance staff in whooping crane field identification and reporting. In addition, Basin Electric has voluntarily agreed to provide funding for whooping crane stopover habitat acquisition program administered by the North Dakota Natural Resource Trust.

The USFWS concurred with these determinations in a letter dated June 26, 2009, and commended Basin Electric and the agencies on their proactive contributions to the conservation of the whooping crane for this Project. The Project will not have significant effects on Threatened or endangered species.

State Species of Concern – All of the state species of concern likely to be in the Project area are dependent on wetlands or undisturbed high quality prairie habitat. Conservation of these habitats is the primary protection measure recommended by the State. Short-term direct impacts to undisturbed high quality prairie habitat could occur during construction, although any permanent loss or alteration would be limited. Although some impact may occur, the Project is specifically designed to avoid lasting impacts to these habitats and any unavoidable impacts will be mitigated by revegetation and restoration. The Project will not have any significant effect on state species of concern or their habitat.

Fish and Wildlife Resources – Direct impact to wetlands in the Poject area will be avoided by project design and there would be little or no impacts to fish. Short-term direct impacts to wildlife from construction would include mortality or displacement of individual animals at the construction sites and loss or alteration of limited amounts of habitat. Species potentially affected would be common in the general area and this impact would have no significance on local populations. Long-term impacts might include alteration or removal of negligible amounts of habitat relative to the amount of habitat available in the area. Wetland and native prairie habitat will be avoided. Other habitats are not considered to be unique or critical to wildlife populations, and construction impacts to these areas will be limited in area and temporary (one or two seasons). This temporary habitat disturbance and species displacement as a result of construction activities is not significant.

Vegetation – The majority of the Project area (about 53 percent) is active agriculture lands dominated by wheat, sunflowers, rye, and other small grains. About 15 percent of the land is referred to as "tame grassland" which is characterized by land that has been planted to perennial herbaceous vegetation, primarily native grasses and forbs. The majorities of these tamed grasslands are Conservation Reserve Program (CRP) lands and had supported small grain agriculture in the past. Most of the permanent disturbance as a result of this Project would occur on these agricultural land and tame grasslands.

The remaining lands consist of a mixture of native prairie, native shrublands, and wetlands. The native vegetation and wetlands can be especially sensitive to disturbance, and the Project has been specifically designed to avoid impacts to these areas during construction and operation. Disturbance of native vegetation due to construction would be minor and generally temporary, and their restoration following construction is part of the overall plan. Any temporary disturbances of these areas due to construction activities will be restored. Soil disturbance would increase the potential for introduction of noxious weeds and could add incrementally to the cumulative effect of noxious weed encroachment in the region. Any noxious weed infestations that might develop after construction will be managed in accordance with Ward County or other applicable weed district requirements.

A relatively small amount of native vegetation will be permanently disturbed as a result of tower location, constructed facilities, and permanent road location: 5.7 acres of native prairie, 4.3 acres of native shrubland, and 0.9 acres of native woodland would be permanently disturbed. Out of the total of about 74 acres to be permanently disturbed for the entire Project, only 15 percent or about 11 acres would be native vegetation. Considering the entire Project area covers approximately 33,000 acres (47 square miles) and the fairly widespread nature of these native vegetation types, this permanent impact of approximately 11 acres of native vegetation is not significant.

Soils – Soils within the Project area are well drained and loamy formed of glacial till. Topography is level to undulating. Short-term construction impacts could occur that may include increased soil compaction and soil structure destruction caused by mixing top layers with deeper layers. These impacts will be mitigated by scarifying compacted soils and reseeding with native vegetation following construction. Areas disturbed will be revegetated with native plants where appropriate or would return to traditional crop rotation. As SWPPP would be in place during construction, and an NPDES permit will direct erosion control and monitoring practices to further mitigate potential soil erosion. Soil compaction effects would be minimal in scope and would be contained following best construction practices. While some surface grading will be required for road and tower pad construction, installing collector lines, and constructing Project facilities, no significant direct, indirect, or cumulative adverse impacts to the soils in the Project area are expected.

Air Quality – Increased vehicle use and normal construction activities would result in short-term increases in transient and localized fugitive dust emissions. Standard mitigation measures such as water application and speed limitations would be used to reduce these effects. Fugitive dust

emissions related to post-construction activities would be limited, transitory, infrequent, and localized. No future development is planned in conjunction with this Project. The Project is not expected to result in significant adverse direct, indirect, or cumulative impacts to ambient air quality.

Water Quality – The Project has been designed to avoid wetlands, including open water. Potential storm water runoff associated with construction activities would be mitigated in accordance with terms of an NPDES permit obtained for the Project. Similar practices would mitigate effects of storm water runoff associated with operation of the Project. Long term potential runoff during turbine operation would be avoided by revegetating areas disturbed during construction. If impacts to jurisdictional wetlands are not avoidable, Basin Electric will seek coverage under a Section 404 USACE Nationwide Wetland Permit. These activities would ensure that adverse direct, indirect, and cumulative impacts to water quality in the Project area would be insignificant.

Aesthetics – The Project area is characterized by a combination of rolling hills and extensive flat areas of agricultural lands and rangeland. The common public observation points are travel corridors including U.S. Highway 23, State Highways 53 and 83, and several well-traveled graveled county roads, none of which are designated as scenic highways or byways. The Project would not obscure important landscape, interrupt a scenic view, be visible from an important cultural resource, or be located in the immediate foreground observed by the public at large. The Project is expected to have minimal impacts on aesthetic resources and no known or foreseeable Project-related adverse cumulative effects are expected.

Transportation – Construction of the Project is expected to cause only temporary and insignificant adverse transportation effects. Short-term impacts would include minor traffic delays caused by construction activities and equipment movement to and from the sites. Short-term roadway closings, if required, would be scheduled with appropriate local authorities. Delay routes during equipment movements would be clearly marked and detour routes would be provided as necessary. The Project is not expected to have significant direct, indirect, or cumulative impacts on the existing transportation systems of local towns, counties, and the State.

Noise – Noise generated by construction activities would occur intermittently over the construction period and would be generated by an increase in traffic as well as heavy equipment operations. Construction noise at any location would be limited to working hours and for the short period construction would occur in a given location. The minimum setback distance is 1000 feet for occupied residences. If complaints about turbine noise are received, Basin Electric may provide improved sound insulation and landscaping to mitigate these unusual situations. Turbine noise is not expected to be noticeable and will not be significant.

Radio and Television Interference – The Project would be constructed according to current National Electrical Safety Code (NESC) and Federal Communications Commission electrical interference standards. It is not expected to cause significant long-term or widespread interference with radio, television, and cellular telephone signals.

Human Health and Safety – The Project has been designed in accordance with NESC standards. Public access to potential hazards would be restricted during construction and operations. The Project is not expected to result in significant adverse direct, indirect, or cumulative impacts to human health and safety.

Socioeconomic and Community Resources – No measurable adverse direct or indirect impacts to local communities are expected over the reasonably foreseeable future life of the Project. Measurable positive indirect impacts to local communities would be expected to result from increased demand for local goods and services during construction and, to a lesser extent, during operation of the Project. The stated purpose of the Project is to create beneficial impacts to Basin Electric customers in the form of electrical supply sufficient for existing and future needs. The Project would not significantly impact socioeconomic and community resources in the area.

Environmental Justice – No disproportionate environmental effects would be experienced by minority and low-income populations. The Project would not pose any significant adverse impacts to the human environment.

Intentional Destructive Acts

Wind generation projects can be the subject of intentional destructive acts ranging from random vandalism and theft to sabotage and acts of terrorism intended to disable the facility. Acts of vandalism and theft are far more likely to occur than sabotage or terrorism. Theft usually involves equipment at substations and switchyards that contain salvageable metal when metal prices are high. Vandalism usually occurs in remote areas and is more likely to involve spontaneous acts such as shooting at equipment.

Protections against theft include fencing, warning signs, lighting, locks, and alarm systems around substations where material and equipment is housed. The presence of workers, security guards, or local residents also discourages theft, but substations, wind generators, and other equipment are increasingly remotely controlled and are unmanned. The presence of high-voltage electricity also presents a certain deterrent to theft. Prosecution of thieves and monitoring of metal recycling operations may also deter theft of metals and equipment. Similarly, prosecution of vandals damaging transmission system equipment may discourage vandalism if it should become a problem.

Acts of sabotage or terrorism are rare, but cannot be ruled out. In the past, the relatively few sabotage acts have typically been carried out against electrical equipment and structures in remote areas, typically by domestic radical environmental groups. In today's geopolitical climate, attacks on the Nation's electrical infrastructure by international terrorist groups or their allies are entirely possible. Protection of widely dispersed electrical generation equipment, substations, and thousands of miles of transmission lines from destructive acts is not practical. Damaged equipment and transmission lines may be quickly repaired or replaced in the same manner that storm damaged equipment are returned to service.

The risk of damage to the proposed Project from intentional destructive acts would be considered very low, in line with or less than the risk to similar generation facilities in the U.S. Theft or opportunistic vandalism is more likely than sabotage or terrorist acts, which are considered to be a negligible risk. The results of any such acts could be expensive to repair, but no substantial impacts to continued electrical service would be anticipated. No significant environmental impacts would be expected from physical damage to the proposed Project or from loss of power delivery.

Cumulative Impacts – Because the Project is located in a relatively stable farming community, no currently existing or substantial industrial activity is planned near the Project site. Western concludes the Project, when added to other past, current, and reasonably foreseeable actions in the Project area, would not result in a cumulative significant impact.

Determination – Based on the analysis, Western concludes, with the BMPs and environmental protection measures proposed for the Project, the construction and operation of the proposed Project would not require mitigation beyond that already proposed by RUS and Basin Electric to mitigate potentially adverse environmental impacts. A separate mitigation action plan is not required for the Project. The analyses 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.

Issued:

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8/17/09
Date