August 2005
DOE/EA-1542

DEPARTMENT OF ENERGY
Western Area Power Administration
Finding of No Significant Impact
FPL Energy Burleigh County Wind, LLC, North Dakota

Summary – Basin Electric Power Cooperative (Basin), on behalf of FPL Energy Burleigh County Wind, LLC (Burleigh County Wind), applied to the Department of Energy (DOE), Western Area Power Administration (Western) to interconnect the Burleigh County Wind Energy Center in Burleigh County, North Dakota, to Western's Garrison-Bismarck 230-kilovolt (kV) Transmission Line. Burleigh County Wind proposes to build a wind energy center consisting of wind turbines, collection sub-transmission lines, and a collection substation. Western would construct facilities to support the interconnection at the Garrison-Bismarck 230-kV Transmission Line. Central Power Electric Cooperative (Central Power), a Basin member, would construct a 230-kV, high voltage transmission line between the proposed wind energy center and Western's interconnection facility.

The environmental assessment (EA) entitled "Burleigh County Wind Energy Center, North Dakota (DOE/EA-1542)" was distributed for pre-approval review by agencies, tribes, and interested parties on July 25, 2005. As a result, the EA was revised to clarify and correct information in the EA. The EA was approved concurrently with this finding of no significant impact (FONSI).

Based on findings and analysis in the EA, Western has determined that with the proposed mitigation, Phase I of the Burleigh County Wind Energy Center and associated facilities (Proposed Action) would not result in any significant environmental impacts. Therefore, the preparation of an environmental impact statement (EIS) will not be required. The basis for this determination is described in this FONSI.

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

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Purpose and Need – Basin has applied to interconnect with Western's Garrison-Bismarck 230-kV Transmission Line. In response to this request, Western would provide an interconnection and transmission service under its Open Access Transmission Service Tariff (Tariff), protect transmission system reliability and service to existing customers, and consider the proposed project's objectives. Western's action is to decide if Phase I of the proposed Wind Energy Center can be interconnected with Western's transmission system and to construct, operate, and maintain the interconnecting switchyard.

Project Description – DOEs NEPA Implementing Procedures require an EIS to be prepared for the addition of new generation resources greater than 50 average MW. Western has determined that the average output from both phases of the Burleigh County Wind Energy Center would be less than 50 average MW. Therefore, an EA was prepared in response to the interconnection request.

Western's action for the Burleigh County Wind Energy Center would involve modifying existing Western facilities to accommodate the interconnection of the proposed Wind Energy Center with Western's existing Garrison-Bismarck 230-kV Transmission Line. The determination associated with this FONSI applies only to Phase I of the Proposed Action. Western's activities would include the following:

1. Constructing a tap to temporarily connect the proposed 230-kV high voltage transmission line into the existing Bismarck-Garrison 230-kV Transmission Line.
2. Constructing a switching station to provide a permanent point of interconnection between the 230-kV high voltage transmission line and the existing Bismarck-Garrison 230-kV Transmission Line.
3. Removing the temporary tap once the permanent switching station is built.

Western has considered the environmental impacts associated with the connected actions of Phase I of the Proposed Action. The connected actions include the following:

1. Constructing up to 33, three-blade, 1.5-megawatt (MW) turbines for Phase I of the Proposed Action. The average annual output would not exceed 50 average MW. Each turbine would be approximately 360 feet tall from the top of the swept

area to the ground surface and sit on an operational footprint of about 50 feet by 50 feet.
2. Constructing gravel access roads to provide access to each turbine for Phase I of the Proposed Action and the area along the proposed new 230-kV high voltage transmission line to allow for construction, operation, and maintenance activities.
3. Constructing an electrical collection system consisting of both underground and overhead, 34.5-kV sub-transmission lines to transmit electricity from each of the wind turbine transformers for Phase I of the Proposed Action to the electrical collection substation.
4. Constructing an electrical collection substation to transfer electricity from the turbines and collection system to a 230-kV high voltage transmission line.
5. Constructing a new, 4.4-mile, 230-kV high voltage transmission line to connect the electrical collection substation to the point of interconnection at Western's existing Garrison-Bismarck 230-kV Transmission Line.
6. Constructing a laydown yard to store construction and maintenance materials and equipment.

Agency Consultation and Public Preparation Process – On July 8, 2005, a newsletter was distributed to landowners in the project area, and tribes and agencies having an interest in the project. The newsletter included a Notice of Floodplain Involvement to comply with DOE's requirements under 10 CFR part 1022. On July 15, 2005, Western sent a letter to Federal and state agencies with an invitation to be cooperating agencies for the EA. On July 25, 2005, the EA for pre-approval review was distributed to interested parties and Tribes as well as Federal, state, and local agencies that have jurisdiction or permitting authority for the proposed project. All substantive comments have been considered and incorporated into the EA where warranted.

The USFWS sent an e-mail to Western on July 1, 2005 regarding sightings of whooping cranes in the project area. Western sent letters to the U.S. Fish and Wildlife Service on June 23 and July 6, 2005, to request species lists and initiate informal consultation, on August 12, 2005, requesting USFWS concurrence with Western's determination of effects to listed species, and on August 22 providing a revised biological assessment. The USFWS concurred with Western's determination on August 24, 2005. With the USFWS concurrence, Western has met its obligations under the Endangered Species Act (7 U.S.C. 460 et seq.).

Western consulted with interested tribes, the North Dakota Intertribal Reinterment Committee (NDIRC) and the North Dakota State Historic Preservation Office (SHPO) to meet its obligation under the National Historic Preservation Act (NHPA, 16.U.S.C. 470 et seq.). The SHPO concurred with Western's determination of "no effect" for Phase I in a letter dated August 18, 2005. Western 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 1021.362 (c)). Under the No Action alternative, the project would not be built and site-specific and direct impacts would not occur.

Another project alternative was originally considered. This alternative would have required 28 miles of transmission line and would have crossed the Missouri River. Because these issues made the project infeasible, planners evaluated other options, including the Proposed Action. The Missouri River crossing was dismissed from full evaluation in the EA.

Environmental Impacts – Western's conclusions about the first phase of the Proposed Action's environmental impacts are based on information contained in the EA. The EA is available upon request. In reaching conclusions about the proposed project's environmental impacts, Western considered environmental protection measures as defined in the EA and mitigation measures proposed by Western, Burleigh County Wind, Basin, and Central Power with the project. In addition, Western completed consultations with tribes, and SHPO before authorizing construction activities for the Phase I of the Proposed Action. In some cases, design considerations may require project facilities to be moved within the project area but to locations not subjected to detailed surveys. In these cases, surveys would be conducted and appropriate consultations and approvals would be completed prior to construction in these areas.

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

- Geology and Soil;
- Air Resources;
- Water Resources;
- Vegetation;
- Wildlife;
- Endangered, Threatened, Proposed, and Candidate Species, as well as Designated Critical Habitat;
- Socioeconomics;
- Environmental Justice;
- Land Use;
- Visual Resources;
- Noise;
- Transportation;
- Safety and Health Issues;
- Cultural Resources; and
- Native American Religious Concerns.

Western concluded that, with the environmental protection measures implemented, the Proposed Action would not require mitigation beyond that already proposed. The basis for these conclusions is summarized below.

Geology and Soil. There are no known metallic mineral deposits or oil fields in the project area. Sand and gravel deposits are of variable quality. Some small open

aggregate pits exist within the project area, but are limited in extent and are not immediately adjacent to any proposed facilities. Potential adverse impacts to soil include increased erosion from runoff and wind due to compaction of soil and loss of vegetation as well as possible impacts caused by fuel spilling from construction equipment. Soils within the project area are only moderately susceptible to water erosion on sloping topography and it has been determined that 90 percent of the project location has a low to moderate susceptibility to wind erosion. Erosion from the Proposed Action would be minimal and erosion control measures would be implemented on sloped ground and near ephemeral drainage crossings. Thus, the Proposed Action would not result in irreversible impacts to other resources. Furthermore, Phase I of the Proposed Action would not result in loss of mineral resources because of the lack of known mineral deposits in the area. Western has concluded that the Phase I of the Proposed Action would not cause direct, indirect, or cumulative significant impact to geology and soil based on the environmental protection measures.

Air Resources. The construction of the proposed Wind Energy Center and associated facilities has 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 environmental protection measures are expected to ensure compliance with Federal and state standards. In addition, Western would ensure that any complaints about fugitive dust emissions would be addressed in an efficient and effective manner and dust would be controlled on roads with watering. 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 Phase I of the Proposed Action.

Water Resources. Construction of the Proposed Action, Phase I has the potential to degrade water resources due to erosion and fuel spills. Phase I of the Proposed Action would be designed and implemented to avoid water resources, including wetlands and comply with U.S. Army Corps of Engineers Nationwide Permit 33 and North Dakota Department of Health stormwater runoff permits.

A Notice of Floodplain/Wetlands Involvement for the Burleigh County Wind Energy Project was issued locally in a newsletter distributed to agencies, tribes, and interested persons. The newsletter was distributed July 15, 2005. The EA includes a wetland assessment, as required by DOE's Floodplain/Wetlands Environmental Review Requirements (10 CFR part 1022). The assessment is included as analysis under the *Water Resources* section describing existing conditions and environmental consequences.

Comments from the North Dakota Department of Health requested that care be taken to minimize impacts to waters of the state. The state recommended several measures to ensure the protection of water resources. Western determined that the suggested measures were already incorporated into the environmental protection measures and project description as proposed.

Design of the Proposed Action, Phase I minimizes disturbances to surface waters. The project area is approximately 10 miles east of the Missouri River. Project components would cross various drainages, including Burnt Creek and the west branch of Apple Creek. Most construction activities would be done outside of ephemeral channels and the depression cone of wetlands. Temporary or permanent disturbances would be permitted and restored as required by the U.S. Army Corps of Engineers. No changes would occur to the drainage patterns. In addition, the project would comply with other environmental protection measures, including proper fuel handling and storage, and appropriate spill contingencies. Therefore, Western has determined that no direct, indirect, or cumulative significant impacts to surface water and wetland resources would occur from the construction and operation of the Proposed Action.

Vegetation. Construction of project facilities and access roads for Phase I of the Proposed Action would cause temporary and permanent losses of vegetation. Project facilities would be sited to avoid and/or minimize impacts to native grasslands and other vegetation. This loss would not result in the listing or jeopardizing the continued existence of plant or animal species. The introduction of noxious weeds in areas of project disturbances would be mitigated through prompt revegetation with regionally native species or restoration of prior land use and adherence with the environmental protection measures. Western has concluded that Phase I of the Proposed Action would not result in direct, indirect or cumulative significant impacts to vegetation.

Wildlife. Both temporary and permanent habitat loss could lead to some loss in wildlife populations. 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. Construction-related impacts would be minimized by employing environmental protection measures that require reseeding of disturbed areas and management of waste materials that could attract predators. Construction-related wildlife losses would not cause a decline in wildlife populations.

The presence of proposed turbines, 230-kV transmission line and overhead, 34.5-kV collection, sub-transmission lines would increase the potential for avian mortalities due to collisions and electrocutions from exposed electrical connections. Phase I of the Proposed Action is proposed in an area with a low density of wetlands. Individual turbine towers would be located on ridgelines and hilltops, away from low passes and wetlands, where shorebirds and waterfowl are more likely to fly. This reduces the likelihood of avian collisions. In addition, advanced wind turbine design and strobe lights, which promote avoidance by night-flying birds, would further reduce avian collisions.

The proposed 230-kV high voltage transmission line is not expected to bisect daily movement patterns of avian species to the small amount of suitable habitat located within and adjacent to the proposed transmission line corridor. However, approved state-of-the-art line marking devices would be installed according the manufacturer's recommendations on the overhead ground wire. Electrocutions on the overhead 34.5

kV sub-transmission lines would be minimized by covering the overhead groundwire and eliminating the amount that would extend beyond the top of the poles. Pole mounted insulators would be rated for 69-kV, increasing the distance between conductors.

Western would involve the USFWS to discuss and/or mitigate any incidence of take that would occur as a part of the Proposed Action. Western has concluded that construction and maintenance of Phase I of the Proposed Action would not result in decline, which could lead to the listing or jeopardization, of the continued existence of any wildlife species. Therefore, Phase I of the Proposed Action would not result in a direct, indirect, or cumulative significant impact to wildlife.

Endangered, Threatened, Proposed, and Candidate Species. Of the Federally-listed species known to occur in North Dakota, the bald eagle (*Haliaeetus leucocephalus*), whooping crane (*Grus Americanus*), interior least tern (*Sterna antillarum*), and piping plover (*Charadrius melodus*) are all known to occasionally or frequently occur near the project area, primarily in the Missouri River corridor. Other species may be present but are either infrequently observed or have only historic range in the project area. Migrating whooping cranes could use wetlands or uplands in the vicinity of the proposed project for feeding or roosting.

While it is possible that these species could collide with turbines or overhead lines, such collisions would be unlikely because the birds 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. Suitable nesting habitat for piping plovers or interior least terns does not exist within the project area.

Based on the above, the Proposed Action would not result in the loss of individuals of a population leading to a jeopardy opinion from the U.S. Fish and Wildlife Service or the loss of individuals leading to the Federal listing of that species. Western has determined the Proposed Action would not affect the pallid sturgeon, the piping plover or Critical Habitat for the piping plover, or the interior least tern. Western has determined the Proposed Action may affect, but is not likely to adversely affect the whooping crane and bald eagle. The Proposed Action, however, would not cause a significant direct, indirect, or cumulative impact to any endangered, threatened, proposed, candidate, or other sensitive species.

Socioeconomics. Considering the short duration proposed for construction, Phase I of the Proposed Action would not result in the degradation or commitment of existing goods and services to an extent that would limit the sustainability of existing communities. Western has determined that Phase I of the Proposed Action would not result in a significant impact on socioeconomic resources.

Environmental Justice. The Standing Rock Sioux Reservation and Fort Berhold Indian Reservation are approximately 50 miles from the proposed project and are the

closest minority and low-income populations in the region. Therefore, discrimination of or disproportionate impacts to low-income, minority, and subsistence populations are not anticipated and a significant impact would not occur.

Land Use. Land uses would be affected by the Phase I of the Proposed Action, primarily by causing interferences to agricultural uses from the proposed Wind Energy Center and related facilities. Western, Burleigh County Wind, and Central Power would fairly compensate landowners for purchased and leased land. Impacts to land uses and agricultural practices would be reduced by siting structures in previously-disturbed areas or in areas where agricultural practices are already limited (e.g., along existing roads etc). Farming and grazing could continue around facilities and except in areas, for which landowners are compensated, foreclose of future land uses would not occur. Based on the compensation proposed for landowners, the implementation of environmental protection measures, and no foreclosure of future land uses, Western has concluded that Phase I of the Proposed Action would not cause a direct, indirect, or cumulative significant impact to land use.

Visual Resources. The area contains no highly distinctive or important landscape features, registered cultural resources, or unique viewsheds. Therefore, Phase I of the Proposed Action would not significantly impact visual resources.

Noise. The project area for Phase I of the Proposed Action is located in a rural, predominantly agricultural area. The wind turbines would be expected to produce higher noise levels than any other component of the proposed project. The noise level for the wind turbines is expected to range between 45 and 50 A-weighted decibels (dBA) at 1,000 feet distance around the proposed wind turbines. Baseline noise levels for the area are between 38 to 48 dBA. Winds in the area would likely mask the noise generated by the turbines and would not exceed noise level standards. Furthermore, no sensitive noise receptors are located within 1,000 feet of any proposed turbine location. Western has concluded that no direct, indirect, or cumulative noise impacts would occur as a result of the proposed project.

Transportation. The proposed project is located in the vicinity of two major highways (U.S. Highway 83 to the west and State Highway 36 to the north). Other local roads in the vicinity of the project area consist of gravel roads that receive a low volume of traffic. Construction activities associated with the proposed project would use existing roads whenever possible and would likely only cause a minor, temporary increase in the flow of local traffic or disruption to traffic flow. In addition, various local roads would be improved for the purpose of transporting materials and equipment and would remain in place after construction. Western has determined that Phase I of the Proposed Action would result in no direct, indirect, or cumulative impacts to transportation.

Safety and Health Issues. Construction work plans and specifications for Phase I of the Proposed Action would be prepared to address both public and worker safety during construction. The preparation of these documents would include appropriate

performance provisions for worker protection as is required under the Occupational Safety and Health Act. Compliance with these work plans and specifications would ensure that workers and the public are optimally protected from injury.

Long-term, magnetic exposure at the root of the present health concern would be minimal for the proposed transmission line, given the distances of residences from the proposed transmission line. Exposure to magnetic fields of short duration and current design standards are not known to pose a health hazard to humans or animals. Nuisance shocks would be minimized through grounding and other measures, consistent with common industry practices. The use of low-corona line design and appropriate corona-minimizing construction practices would minimize the potential for corona noise and its related interference with radio-frequency communication.

All handling, transport, and containment of hazardous materials would be conducted in compliance with Federal, state, and local regulations. Motor vehicle traffic near the proposed project and near the planned transmission right-of-way would increase due to motorists traveling in these areas and contractors working to construct the new power generation system. 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.

These effects would be minimized by implementation of Western's environmental protection measures. Western has concluded that Phase I of the Proposed Action would not cause significant adverse impacts related to safety, radio-frequency interference, audible noise, nuisance shocks, hazardous shocks, or electric and magnetic field exposure.

Cultural Resources. Initial research and Class III pedestrian surveys completed to date have identified several archaeological and historic sites within the project area. These sites include three prehistoric sites, one historic site, and three isolated finds. The prehistoric sites were sparse, lithic scatters. The isolates include three flakes found in a 25 square meter area, the distal end of a biface, and a single secondary flake. According to the *Summary of Results from Burleigh County Wind Energy Center: A Class III Cultural Resource Inventory in Burleigh County, North Dakota*, the prehistoric sites have not been formally evaluated for National Register of Historic Places (NRHP) eligibility because they will all be avoided by the project. However, given their sparse nature, none of the sites are likely eligible. -The historic site within the survey area is the previously recorded 32BL541. Site 32BL541 is an active railroad that was formerly part of the Soo Line built in the early 1900s. The site was recommended as not eligible for NRHP.

All facilities and activities associated with Phase I of the Proposed Action would avoid cultural resource sites. If any facility requires a change in location or disturbance area not already included in intensive pedestrian surveys, these areas would be surveyed and Western would consult with the SHPO and interested tribes. If historic or

prehistoric artifacts or features are discovered during construction or maintenance activities, work would be halted within 200 feet of the find. Western would be notified immediately to initiate procedures outlined in 36 CFR part 800. These procedures include evaluating the find for eligibility and determining appropriate treatment with the NDIRC, interested tribes, and the North Dakota SHPO. Based on these findings and commitments, no significant direct, indirect or cumulative impacts to cultural resources is expected as a result of construction, maintenance, or operation of Phase I of the Proposed Action.

Native American Religious Concerns. All project facilities and activities for Phase I of the Proposed Action would avoid sacred sites and traditional cultural properties (TCPs). Western would comply with state laws to notify the appropriate tribes, individuals, agencies, and authorities in the event that important cultural or historic resources are discovered during construction activities. In addition, Western would comply with the Memorandum of Agreement with the NDIRC to address any concerns expressed by the NDIRC during the course of consultation, planning, and construction. If burial or cultural sites with Native American religious values are identified prior to or during the proposed construction, interested tribes will be notified and consulted about mitigation measures. No significant impacts to Native American religious concerns, sacred sites, or TCPs are expected.

Determination – The analyses contained in the EA indicate that the Phase I of 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: August 26, 2005

Robert J. Harris
Regional Manager

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