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# CHAPTER 1

## INTRODUCTION

The Florida Power and Light (FPL) Energy North Dakota Wind Energy Center (Edgeley/Kulm Project) is a wind generation project proposed by FPL Energy North Dakota Wind LLC (Dakota Wind) and Basin Electric Power Cooperative (Basin). Annual average daily output expected from the proposed Edgeley/Kulm Project is approximately 21 megawatts (MW). The proposed project is located in La Moure County, south central North Dakota, near the rural farming communities of Kulm and Edgeley (**Figure 1-1**). The facility is scheduled to be operational by the end of 2003. Electricity produced from the facility is estimated to meet the energy demands of approximately 15,000 North and South Dakota households.

Power generated by the proposed Edgeley/Kulm Project would be transmitted via a new 115-kilovolt (kV) transmission line to an existing U.S. Department of Energy (DOE) Western Area Power Administration (Western) substation located near Edgeley, North Dakota. The interconnection would require modification of the Edgeley Substation – a Federal action. As a result, review of the substation modification, transmission line construction, and proposed windfarm by Western is required according to Section 102(2) of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4332, and Department of Energy NEPA Implementing Procedures (10 CFR 1021). The U.S. Fish and Wildlife Service (USFWS) is a cooperating agency for preparation of this EA.

Dakota Wind and Basin have prepared this Environmental Assessment (DOE/EA-

1465) for Western's approval to disclose potential environmental and socioeconomic effects of the proposed Edgeley/Kulm Project.

This document follows regulations issued by the Council on Environmental Quality (CEQ) for implementing procedural provisions of NEPA (40 CFR 1500-1508). This EA is intended to disclose potential impacts on the quality of the human environment resulting from the proposed action and determine if the impacts may be significant and, therefore, would require preparation of an environmental impact statement (EIS). If impacts resulting from the proposed action are determined to not be significant, Western would complete a Finding of No Significant Impact (FONSI).

This document describes the components and environmental consequences of modifying Western's Edgeley Substation, constructing a 115-kV transmission line, and constructing the windfarm and ancillary facilities.

Chapter 1 describes:

- Purpose of and need for the action;
- Roles and involvement of proponents of the proposed action;
- Role of Western – the lead Federal agency;
- Roles and responsibilities of other participating agencies; and,
- Public participation in the EA process.

Chapter 2 provides:

- Description of the proposed action;
- No action alternative; and,
- Environmental protection measures (best management practices) that would be followed during construction of the proposed Edgeley/Kulm Project.

Chapter 3 describes:

- Existing or potentially affected environment in the approximate 35-square mile project area; and
- Potential direct, indirect, and cumulative impacts to the affected environment associated with the proposed action.

Chapter 4 contains a list of persons and agents consulted.

Chapter 5 contains a list of references cited in developing the EA.

## PURPOSE OF AND NEED FOR ACTION

Dakota Wind’s proposed Edgeley/Kulm Project, the construction and operation of a windfarm, requires a Federal action to be taken by Western – modifications to the existing Edgeley Substation. As a result, *Purpose and Need Statements* for Dakota Wind’s and Western’s actions are provided.

### FPL ENERGY NORTH DAKOTA WIND, LLC

Dakota Wind and other project proponents need to develop the proposed Edgeley/Kulm Project to provide utilities and, ultimately, electric energy consumers with electricity from a renewable source at the lowest possible cost. **Table 1-1** provides a listing of project proponents, including their interests or involvement in the proposed Edgeley/Kulm Project.

DOE, Energy Information Administration (EIA) is forecasting a 1.8 percent annual growth in electricity sales through 2020.

<b>TABLE 1-1 Project Proponents</b>	
<b>Participant</b>	<b>Description/Involvement</b>
FPL Energy North Dakota Wind, LLC	Lead Proponent and project developer.
Basin Electric Power Cooperative	Purchaser of power generated by the proposed project. A Preference Customer of Western Area Power Administration (Western).
Central Power Electric Cooperative	A Preference Customer of Western and a Class A member of Basin Electric Power Cooperative. Comprised of six member cooperatives serving nearly 46,000 customers in 25 counties in central and southeastern North Dakota. Central Power would construct the 10 mile 115-kV transmission line to tie the proposed windfarm in with Western’s Edgeley Substation.
Dakota Valley Electric	Basin Electric Power Cooperative member in the Edgeley service area.

➤ **Figure**

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This growth will require an increase in generating capacity of up to 1,300 new power plants over the next 20 years (EIA 2001).

Deregulation of the electric industry and current energy supply issues have emphasized the need for new and diverse energy sources in the region. Basin's purchase of electricity generated by the proposed Edgeley/Kulm Project would meet a recent shareholder directive to diversify its current generation portfolio that includes coal, hydro, and gas with an economical renewable energy source. The proposed Edgeley/Kulm Project would economically meet that directive by using the wind resource in the Edgeley/Kulm area, combined with nearby access to the transmission system. A two-year research investment into the project by Dakota Wind and the project proponents included:

- Collection of meteorological data necessary to design an optimally efficient wind turbine array in the Edgeley/Kulm area; and,
- Conducting a system impact study to determine the feasibility of bringing approximately 21 MW of electricity (based on an annual daily average) generated by the proposed windfarm on-line through connection to the transmission system.

### **WESTERN AREA POWER ADMINISTRATION**

Basin has applied to interconnect with Western's transmission system at its Edgeley Substation. Western must respond to Basin's request for an interconnection with Western's

transmission system. In responding to the need for agency action, Western must abide by the following purposes:

- *Providing Transmission Service.* Western published in the Federal Register on January 6, 1998, its *Notice of Final Open Access Transmission Service Tariff (Tariff)*. Under Western's *Tariff*, Western offers transmission service for the use of available transmission capacity in excess of the capacity Western requires for the delivery of long-term firm capacity and energy to current contractual electrical service customers of the Federal government. Under the *Tariff*, Western provides firm and non-firm point-to-point transmission service and network integration transmission service to the extent that Western has available transmission capability.
- *Addressing an Interconnection Application per Western's General Guidelines for Interconnection.* Western's General Guidelines for Interconnection provide a process for addressing applications for interconnection. The process dictates that Western respond to an application as presented by an applicant. Section 211 of the Federal Power Act requires transmission services be provided upon application if transmission capacity is available.
- *Protect Transmission System Reliability and Service to Existing Customer.* Western's purpose is to ensure that existing reliability and service is not degraded. Western's *General Guidelines for Interconnection* provides for transmission and system

studies to ensure that system reliability and service to existing customers is not adversely affected.

- *Consideration of the Applicant's Objectives.* Since the statement of purpose and need affects the extent to which alternatives are considered reasonable, it is important to understand both the agency's purpose and need and that of the applicant.

## AUTHORIZING ACTIONS

Western may approve the proposal only after a determination on whether or not an action is a major Federal action significantly affecting the quality of the human environment, as required by NEPA. Western's decision options include the proposed action as described herein, or the no action alternative.

In addition to Western, other Federal, state, and local agencies have jurisdiction over certain aspects of the proposed action. **Table 1-2** provides a listing of agencies and their respective permit/authorizing responsibilities with respect to the proposed Edgeley/Kulm Project.

## PUBLIC SCOPING

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 mailed a scoping letter that included a proposed project summary to local individuals, affected landowners, and businesses, as well as organizations listed on Western's Upper Great Plains Region mailing list.

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 Draft EA was distributed for review to the Federal, state, and local agencies that have jurisdiction or permitting authority for the proposed project and affected landowners. Substantive comments received on the Draft EA have been incorporated into this EA and considered in Western's determination on whether or not an environmental impact statement (EIS) is required.

Due to the 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.

A summary of public and agency issues concerning the proposed project is contained in **Table 1-3**. This table also provides references to sections of this EA which respond to substantive issues raised. Dakota Wind and Basin identified the issues presented in **Table 1-3** in accordance with DOE requirements (10 CFR part 1021).

<b>Authorizing Action</b>	<b>Responsible Agency</b>
Interconnection	Western Area Power Administration (Western)
Utility Occupancy Agreement	North Dakota Department of Transportation
Easement Grants and Road Crossing Permits	North Dakota Department of Transportation, Pomona Township Board
Review and Approval of Weed Control Plan	La Moure County, Pomona Township Board
National Environmental Policy Act	Western
National Historic Preservation Act	Western, North Dakota State Historical Preservation Office
Native American Graves Protection and Repatriation Act	Western
American Indian Religious Freedom Act	Western
Construction Storm Water Discharge Permit	North Dakota Department of Health, Division of Water Quality, Storm Water Program
Safety Plan	Occupational Safety & Health Administration
Migratory Bird Treaty Act	US Fish and Wildlife Service (USFWS), Western
Endangered Species Act	USFWS, Western
Air Pollution Control Permit to Construct	North Dakota Department of Health, Division of Air Quality
Tower Lighting	Federal Aeronautical Administration

<b>Issue</b>	<b>Response</b>
Social impacts associated with visual/scenery in the area.	Chapter 3 – Affected Environment and Environmental Consequences
Potential disturbance to wetlands from construction activities.	Chapter 2 – Proposed Action, Environmental Protection Measures
Effects to local communities and service sectors from construction and operations-related employment.	Chapter 3 – Affected Environment and Environmental Consequences
Potential for spread of noxious weeds resulting from ground disturbance during construction activities.	Chapter 2 – Proposed Action, Environmental Protection Measures Chapter 3 – Affected Environment and Environmental Consequences
Potential for disruption to farming activities during and post-construction.	Chapter 3 – Affected Environment and Environmental Consequences
Potential effects to wildlife, especially migratory birds, during operation of the wind power facility.	Chapter 2 – Proposed Action, Environmental Protection Measures Chapter 3 – Affected Environment and Environmental Consequences
Avoid potential gravel pit areas when siting turbines.	Chapter 2 – Proposed Action, Environmental Protection Measures Chapter 3 – Affected Environment and Environmental Consequences