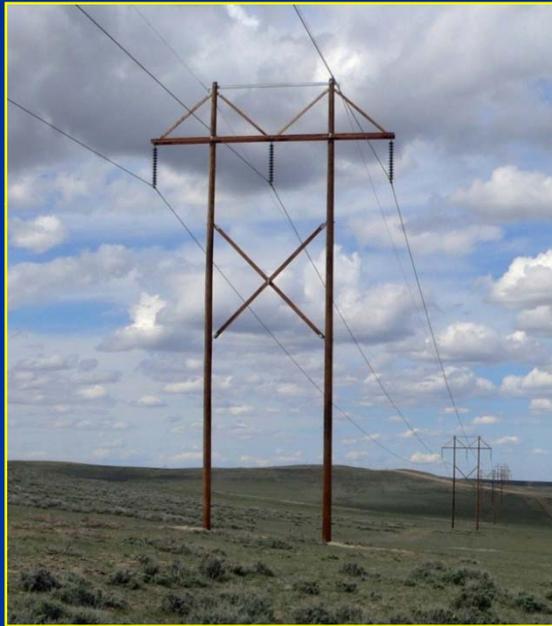


South Dakota PrairieWinds Wind Energy Project



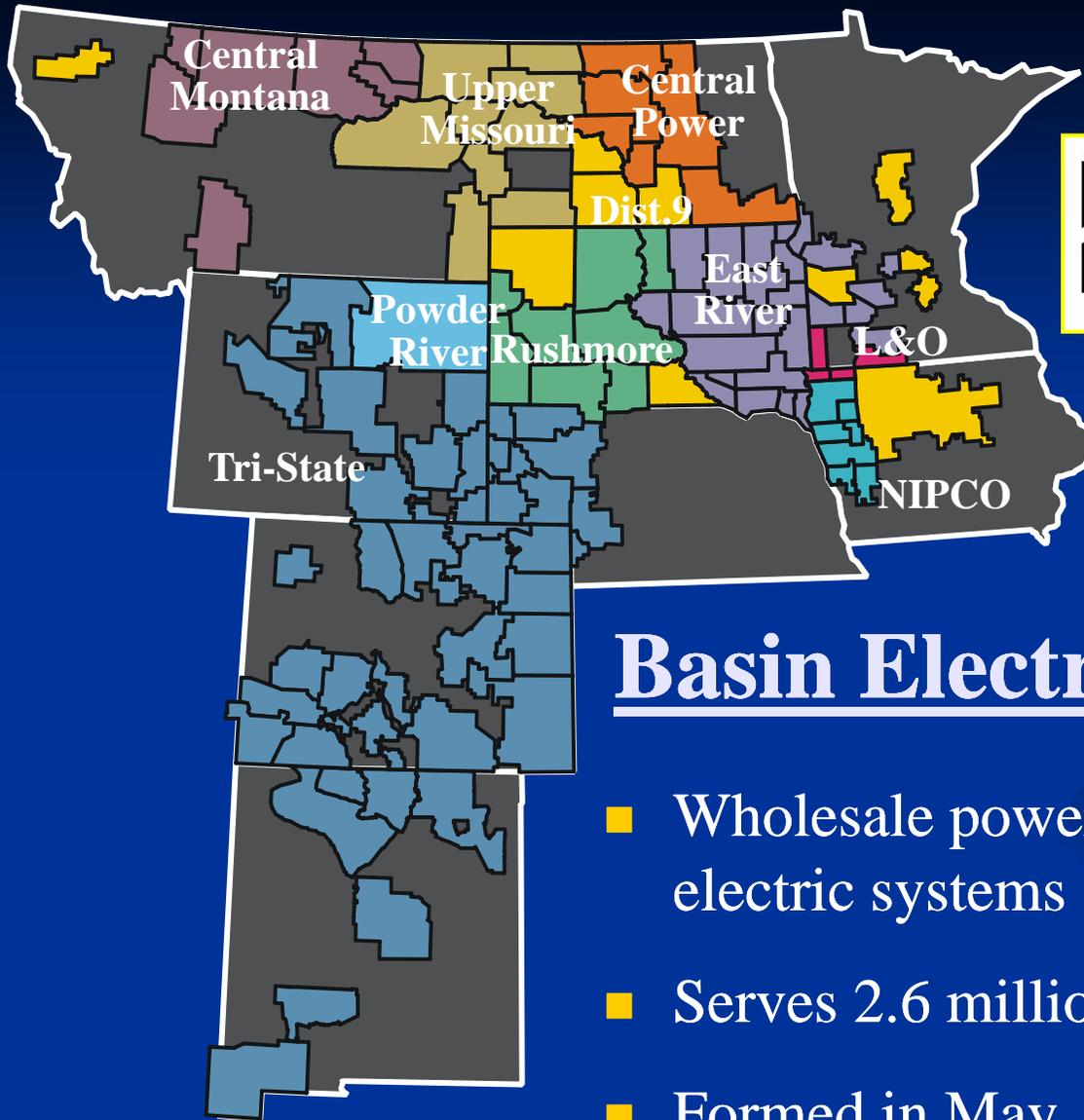
Outline of Presentation

- Basin Electric Information
- Proposed Project Purpose and Need
- Proposed Project Details
- Permitting Process and NEPA Schedule
- Comparison of Wind Speed and Energy Generation
- Example Photos
- Additional Considerations
- Scoping Meeting Format

South Dakota Prairie Winds

Wind Energy Project

Basin Electric Information

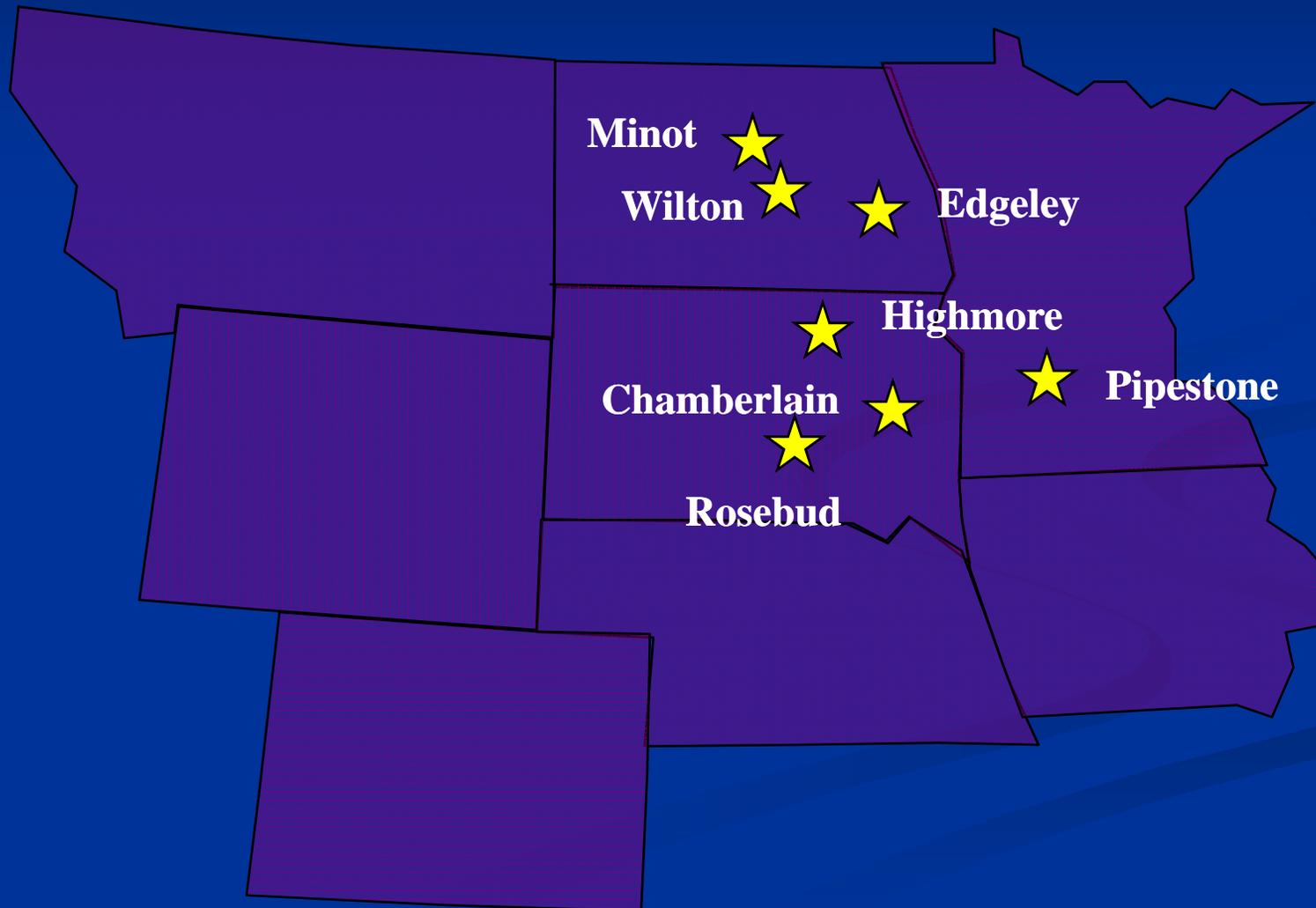


Basin Electric Information:

- Wholesale power supplier to 126-member rural electric systems
- Serves 2.6 million consumers
- Formed in May, 1961 as supplemental power supplier
- Consumer-owned; consumer-controlled

Basin Electric's Wind Portfolio

Existing Wind Energy Generation – 136 MW



South Dakota Prairie Winds

Wind Energy Project

Proposed Project

Purpose and Need

Purpose and Need

- Current incentives/regulations encourage or require power from renewable or low environmental impact resources
- Proposals in Congress for national Renewable Portfolio Standards (RPS)
- Basin Electric needs additional renewable energy capacity to serve forecasted growth demands and meet state-mandated RPS
 - A 150 MW wind project was determined to be the best alternative to satisfy these requirements
 - Applicant – PrairieWinds SD1, Incorporated, a wholly owned subsidiary of Basin Electric

Agencies Involved

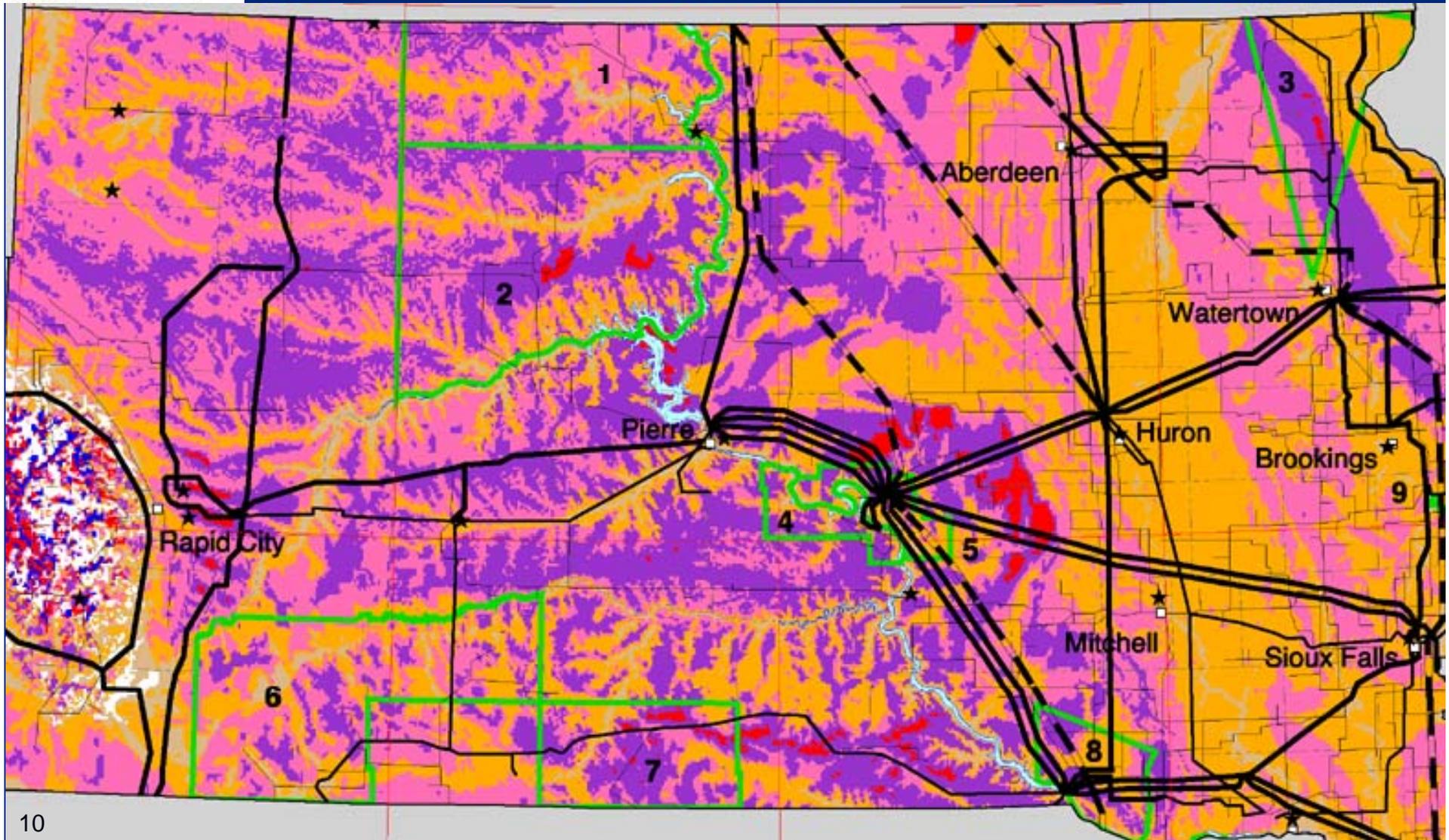
- Western's Action – Basin Electric has requested to interconnect the proposed Project with Western's transmission system
- RUS's Action – PrairieWinds has requested financing for the proposed Project from the RUS
- Both agencies intend to jointly prepare an environmental impact statement (EIS) for the Project

South Dakota Prairie Winds

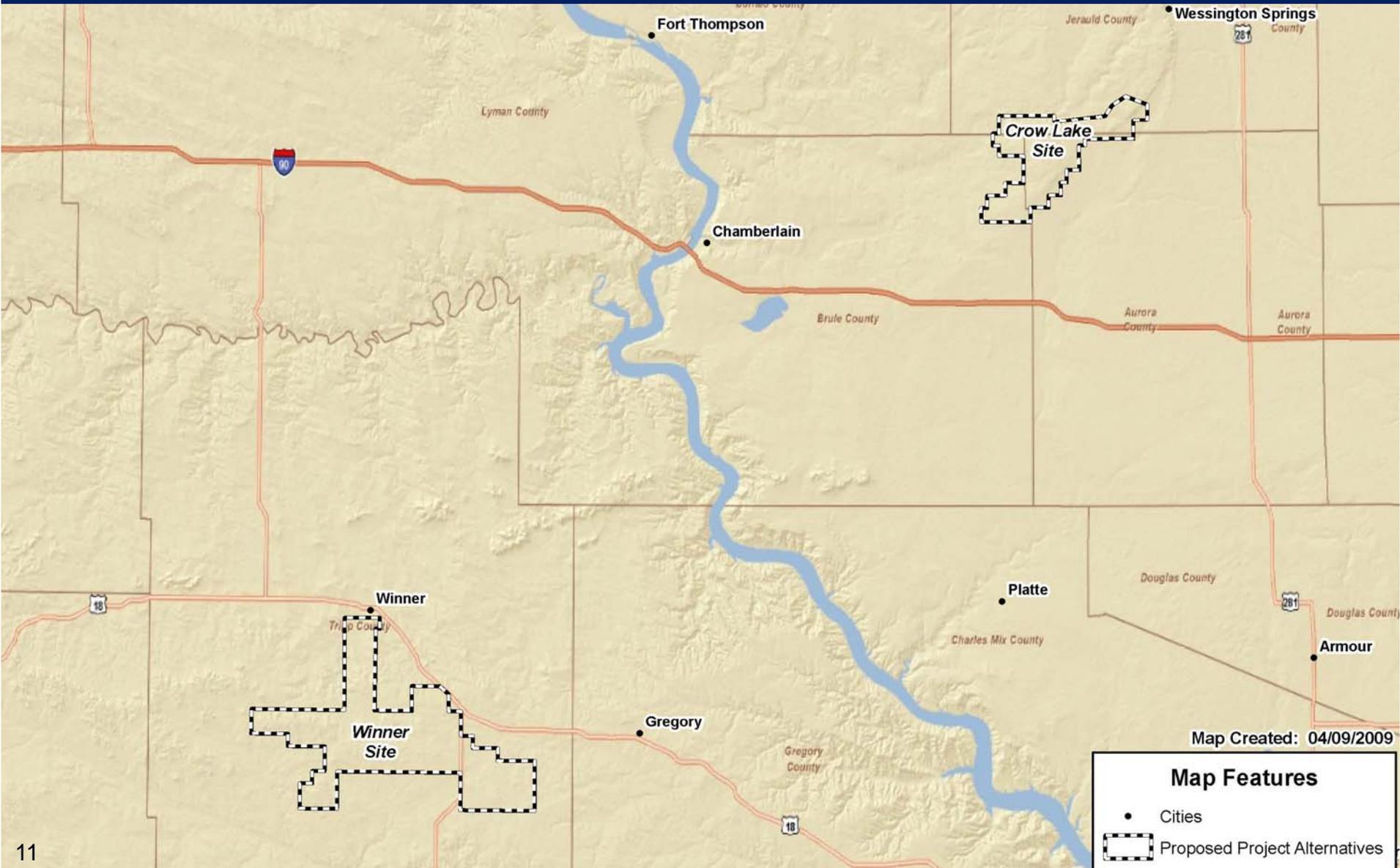
Wind Energy Project

Proposed Project Details

South Dakota Wind Potential in Proximity to High-Voltage Transmission Network



Proposed Project Alternatives



Project Details

- Will generate approximately 150 MW
- 2 site alternatives - Project components:
 - 101 turbines,
 - Access roads,
 - O&M building,
 - Underground feeder cables and collector substation(s),
 - Approximately 10 to 12 miles of transmission line
- Fall 2010/Winter 2010 – commercial operation

GE 1.5sle Turbine Specifications

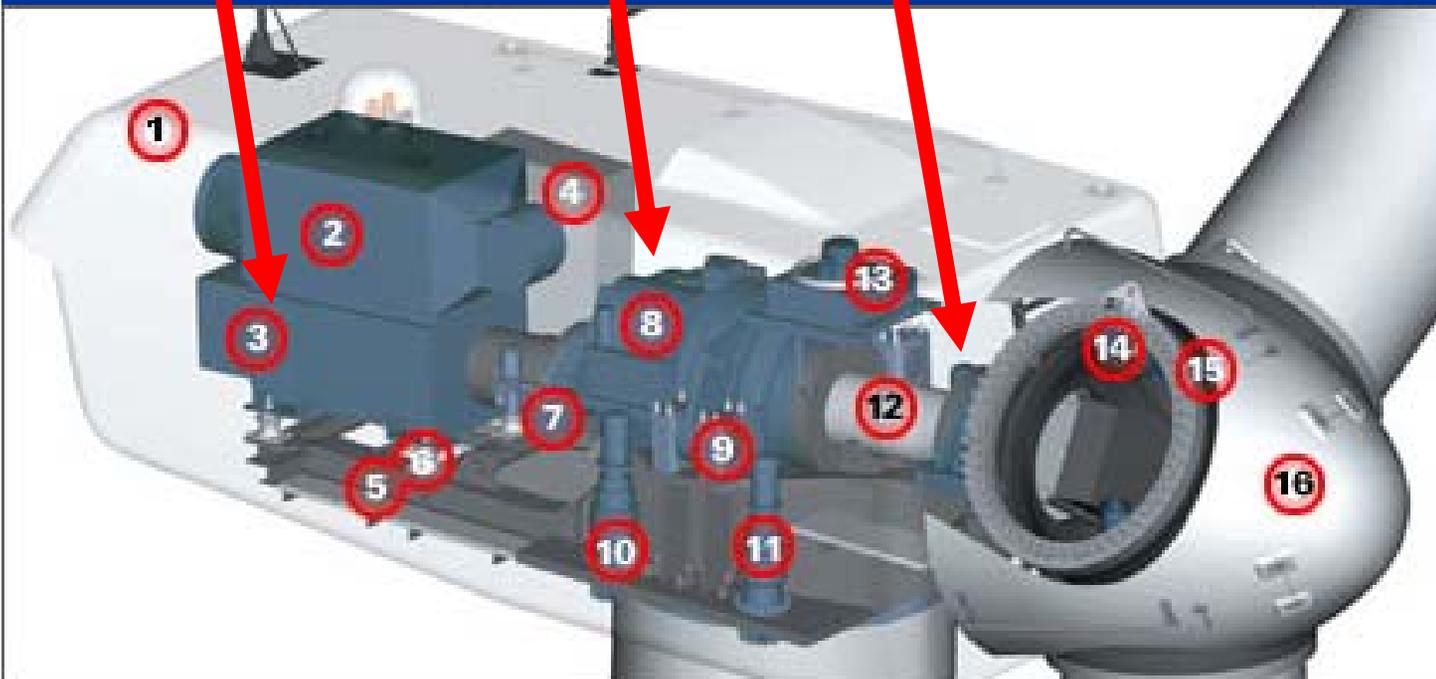
- Variable speed – blades rotate at 12 to 23 RPM
- Start-up wind speed: approximately 7 to 8 MPH
- Shut-down wind speed: approximately 56 MPH
- Optimum wind speed: 26 to 55 MPH
- Operational temperature range: - 20° to 104° F
- Variable pitch blades
- High tech electronic controls
- 3 fiberglass blades (14,000 lbs per blade)
- Hub height: 262 feet
- Blade length: 135 feet

3 Major Components of Turbines

Generator

Gearbox

Rotor/Blades/Main Shaft



1. Nacelle
2. Heat Exchanger
3. Generator
4. Control Panel
5. Main Frame
6. Impact Noise Insulation
7. Hydraulic Parking Brake
8. Gearbox
9. Impact Noise Insulation
10. Yaw Drive
11. Yaw Drive
12. Rotor Shaft
13. Oil Cooler
14. Pitch Drive
15. Rotor Hub
16. Nose Cone

South Dakota Prairie Winds

Wind Energy Project

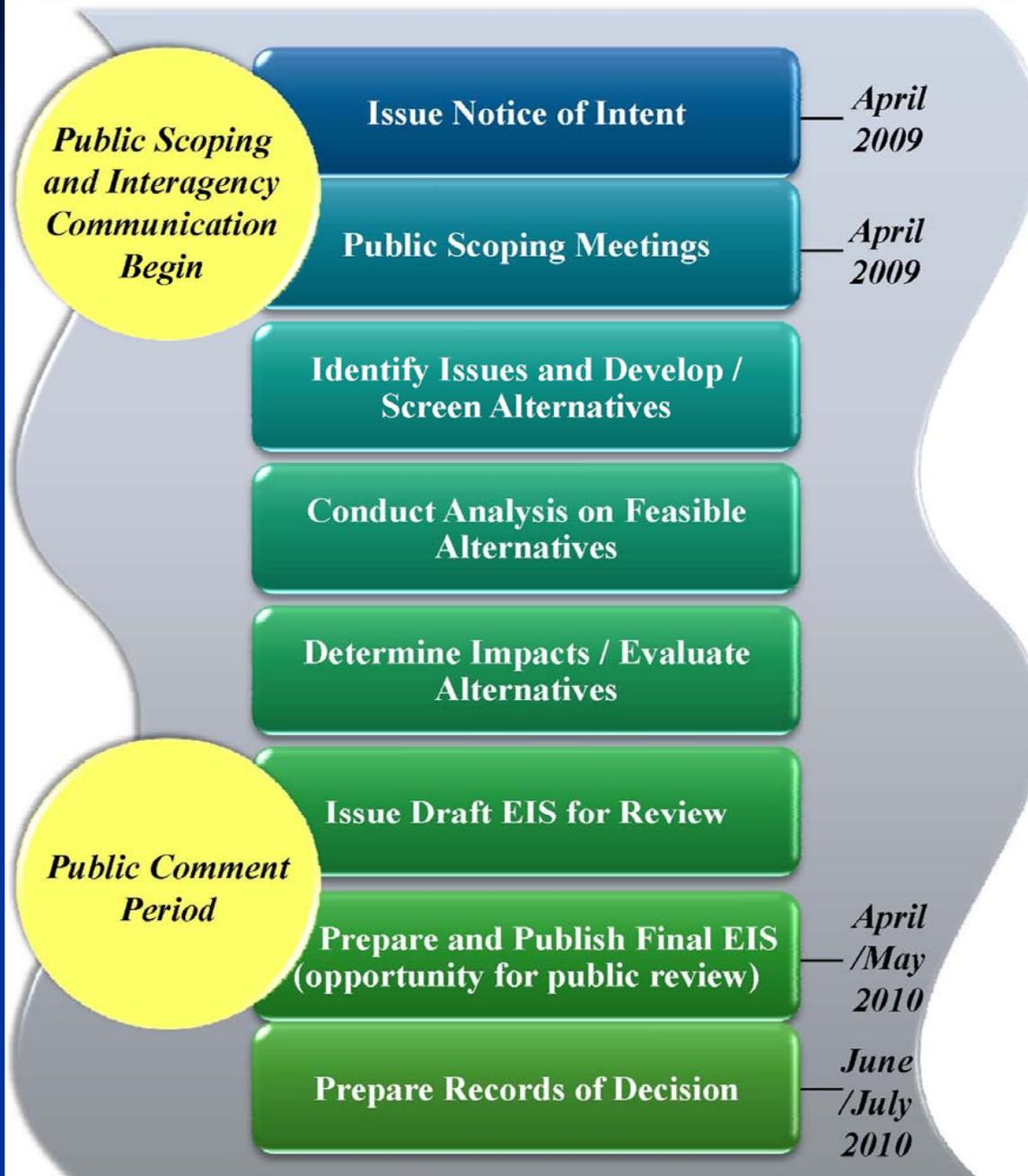
Permitting Process and

NEPA Schedule

Permitting Process – Scoping and environmental analysis

- NEPA
 - Scoping to gain agency, organization, and public input
 - Environmental Impact Statement
 - Agency involvement:
 - financing – RUS
 - interconnection – Western
- South Dakota Public Utilities Commission – siting approval
- Local zoning
- Other pre-construction permits and authorizations

ENVIRONMENTAL IMPACT STATEMENT PROCESS



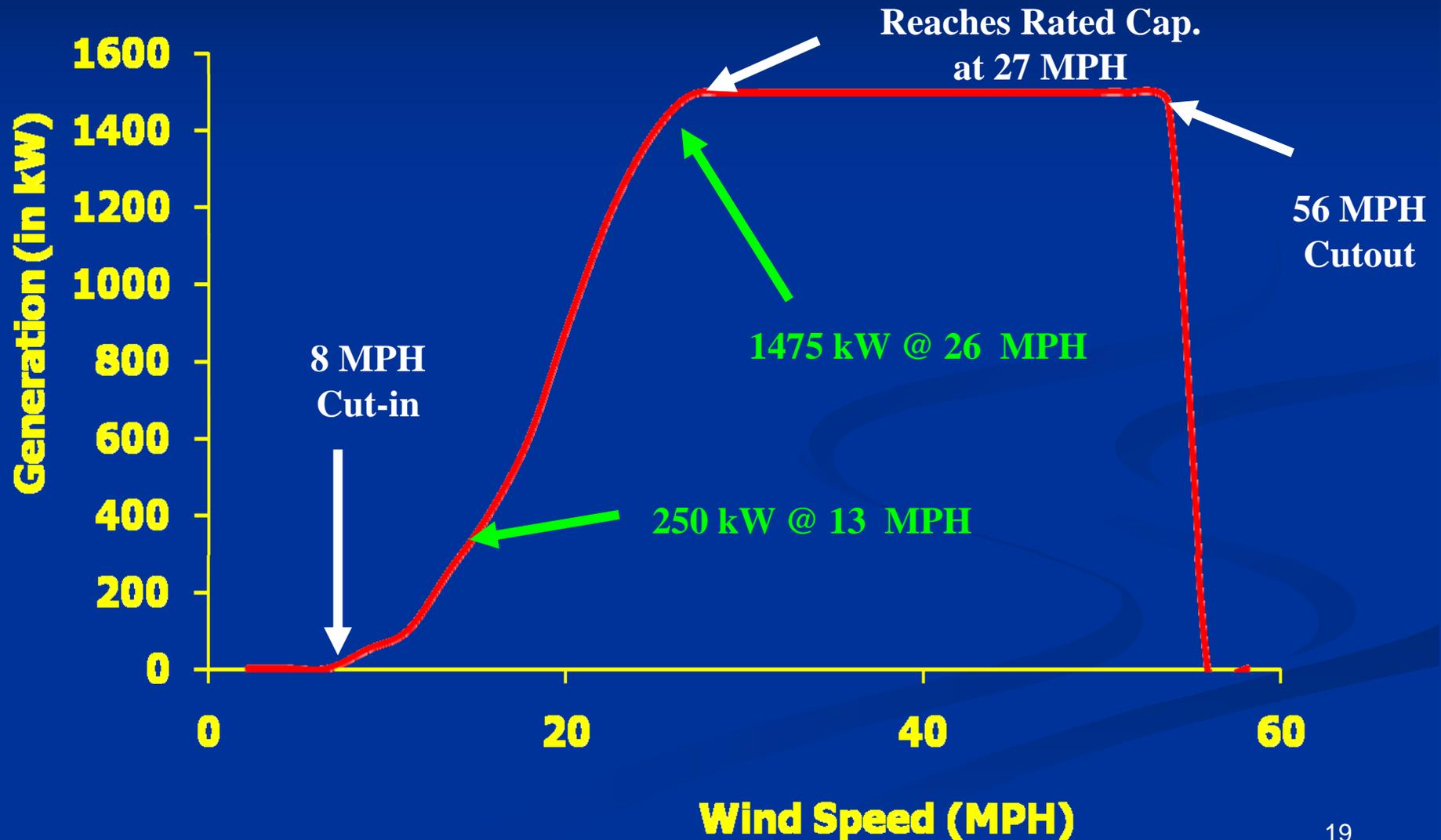
South Dakota Prairie Winds

Wind Energy Project

Comparison of Wind Speed and **Energy Generation**

Power Curve:

A 1 MPH change in annual average speed can change production by 15%



South Dakota Prairie Winds

Wind Energy Project

Example Photos:

- **Turbine Construction**
- **Collector Substation**
- **Transmission Structures**
 - **Facility Layout**

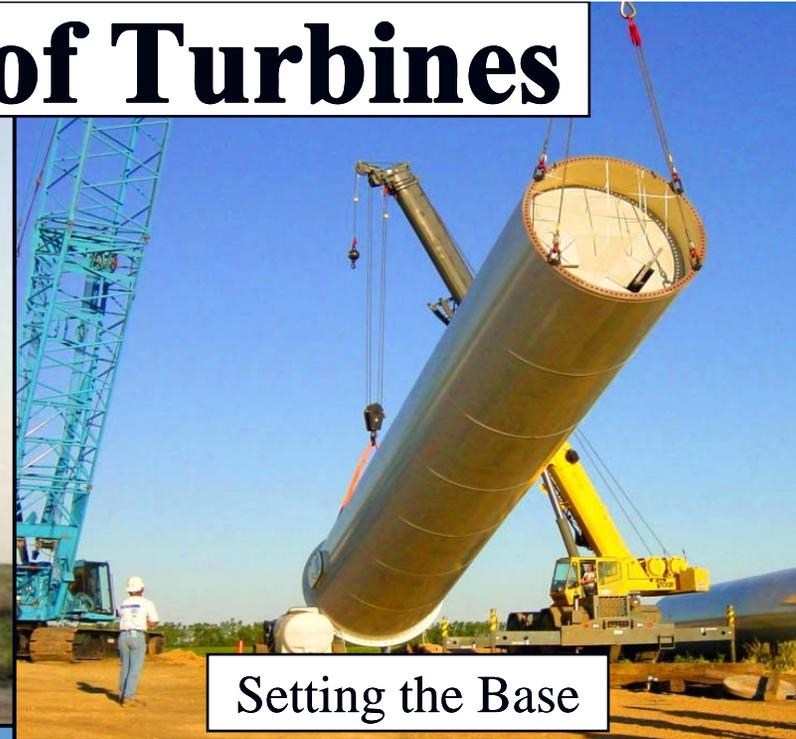
Initial Construction Step: Complete Foundation



Construction of Turbines



Tower Section Delivery



Setting the Base



Nacelle (includes Generating Components) and Turbine Module



Blade Installation

Completed Turbines

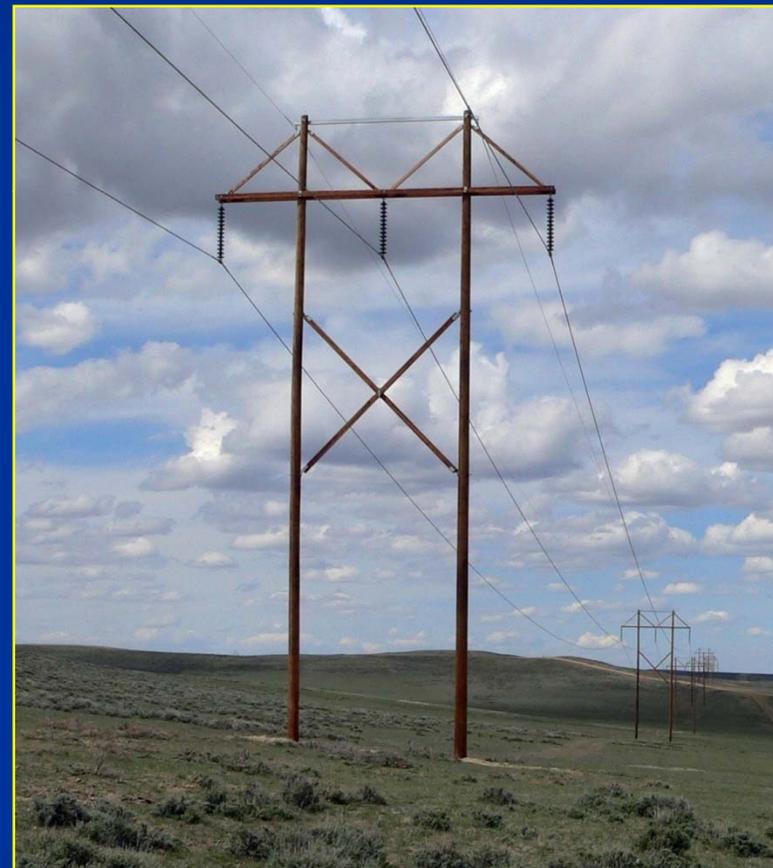
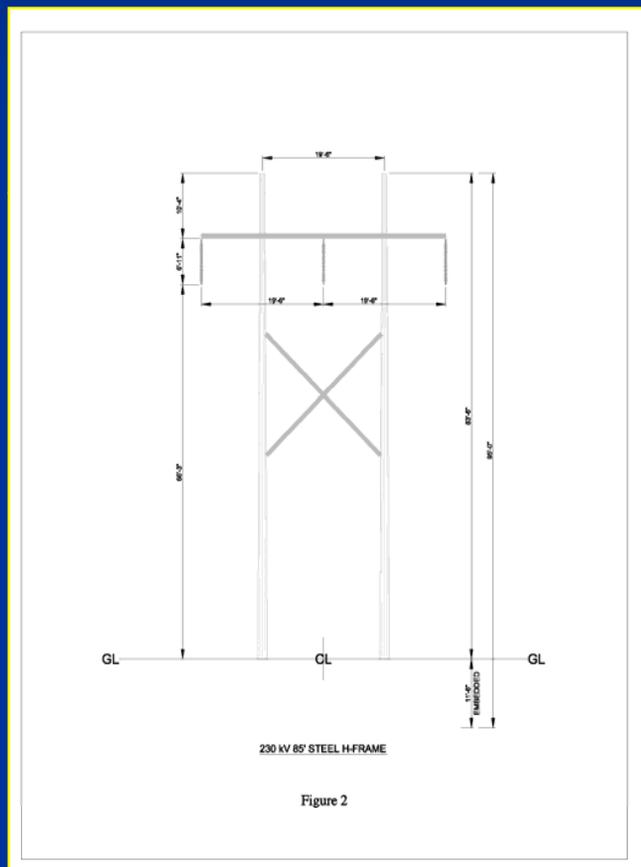


Collector Substation

(Example Only)

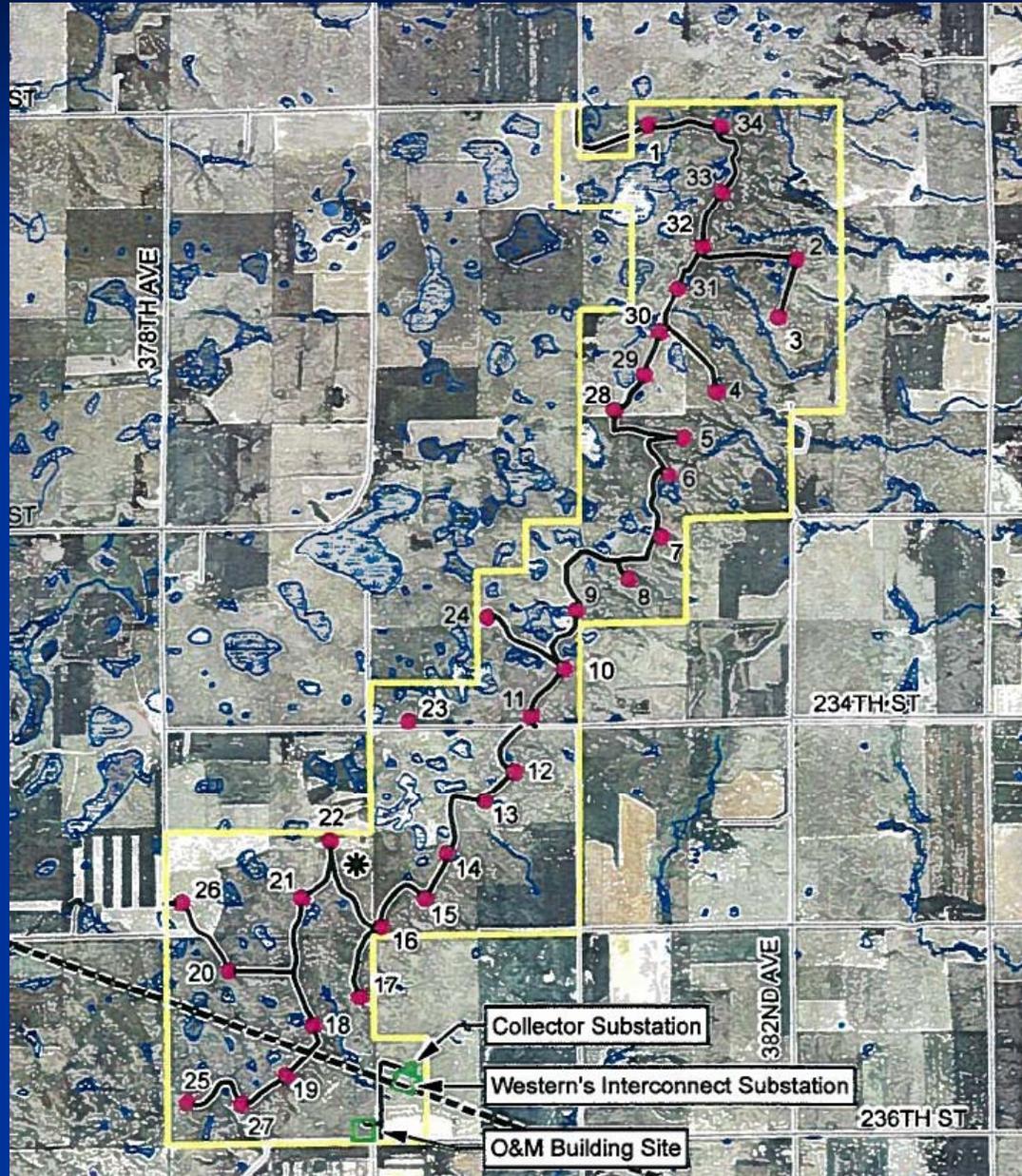


Typical Transmission Structure



Facility Layout

(Example Only)



South Dakota Prairie Winds

Wind Energy Project

Additional Considerations:

- **Potential Local Benefits**
 - **Schedule and Cost**

Potential Local Benefits

- **Project construction**
 - **Increase demand for local lodging, meals and construction materials**
 - **225 - 250 temporary jobs**
- **Project operation**
 - **10-12 permanent jobs**
- **Increase tax base**
- **Increase renewable energy capacity, and system reliability**

Proposed Schedule/Cost

- **Obtain permits/approvals – ongoing**
- **Summer 2010 – begin construction**
- **Fall 2010/Winter 2010 – commercial operation**
- **Project cost estimate = \$350 million**

South Dakota Prairie Winds

Wind Energy Project

Scoping Meeting Format

Open House Scoping Meeting

- **Please sign in at the registration table**
- **Feel free to visit the various stations around the room**
- **Ask questions**
- **Provide input**
- **Your comments are important to this process**

Thank You