

# Wind Energy

*“Reviewing all aspects of your project—making sure environmental issues do not become a hindrance to potential profits.”*

## SERVICES:

### DEVELOPMENT STAGE

#### Environmental Engineering

- Fatal Flaw Screening Analysis
- Facility Siting
- Corridor Studies
- Prairie and Wetland Evaluation
- Biological Preservation Survey
- Archeological Reconnaissance Survey
- Prairie Protection/Management Plan
- Soil Erosion/Sediment Control Plan
- Site Development Plans

#### Permitting

- Federal/State/Local Site Permits
- Transmission Routing Permits
- NEPA and State Environmental Acts
- Noise Analysis
- 404 Permitting
- FAA Submittals
- GIS Data Management/Presentation

### CONSTRUCTION STAGE

#### Geotechnical Engineering/Exploration

- Soil Investigations
- Groundwater Investigations
- Foundation/Deep Foundation Design
- Soil Resistivity
- Piling Analysis
- Engineering Reports

#### Construction Materials Testing/Special Inspections

- Soil Tests
- Foundation Inspection
- Concrete Testing
- Soil Corrections
- Steel Inspections
- Deep Foundation Inspections
- Sub-grade Analysis

## OUR APPROACH:

Pinnacle has developed client partnerships on a variety of wind energy projects throughout the Midwest by providing both environmental and geotechnical engineering services. Pinnacle provides assistance from the initial planning and development stage through construction including environmental permitting and regulatory agency documentation.



## BENEFITS TO YOU:

Pinnacle’s involvement throughout the project creates engineering continuity, allowing for design changes and construction modifications early on in the project. We address soil capacity, permitting, and structural issues—achieving comprehensive design and timely response.

## PINNACLE SOLUTIONS:

Pinnacle has provided engineering services for a number of wind power development projects. A sampling of projects is listed below.

- Cottonwood County, Southern MN - 68 turbine sites.
- Knox County, Nebraska - 27 turbine sites.
- Traverse County, Minnesota - 10 turbine sites.
- Grant County, Minnesota - 10 turbine sites.
- Stevens County, Minnesota - 10 turbine sites.
- Palo Alto County, Ayrshire, Iowa - 10 turbine sites.
- Spanish Fork, Utah - 9 turbine sites.
- Harper County, Oklahoma site - 9 turbine sites.