

Wind Energy Services

As the demand for renewable energy resources evolves, CEC is well-equipped to help strategize for renewable energy facility development. CEC is familiar with providing innovative design solutions and integrated expertise for professional services to support wind power generation projects.



CEC engineers, surveyors, biologists, geologists and scientists understand the issues related to the development of sites for wind energy generation and are experienced in accomplishing the entire range of renewable energy development, civil and environmental tasks including:

- Permitting and GIS services
- Design and construction services
- Policy and regulatory drivers
- Mitigation management

ROBUST ECOLOGICAL SERVICES

CEC provides a suite of support services including bird, bat, wetland/stream, and cultural resources investigations, National Environmental Policy Act documentation, and Habitat Conservation Plan development, reducing the need to hire multiple consultants. A leader in field investigations for threatened and endangered species, CEC is known for having highly knowledgeable, federally permitted U.S. Fish & Wildlife Service-approved surveyors and biologists who maintain an excellent rapport with numerous USFWS regions while serving as advocates for clients.

- Bat Acoustic Monitoring and Mist-netting
- Bald Eagle and Avian Population Surveys
- Threatened and Endangered Species Evaluations
- Wetland and Stream Delineations
- Ecological and Cultural Resource Assessments and Mitigation
- Critical Issues Analyses
- Habitat Conservation Plans
- Incidental Take Permitting
- Invasive Species Assessments and Management

GEOTECHNICAL ENGINEERING

CEC supports the client's geotechnical needs throughout a project – from assistance with site selection through construction. As a full-service consulting firm, CEC geotechnical engineers work in-house with other disciplines during projects. This results in a more comprehensive approach to project planning and early identification of geotechnical-related issues. It also results in a more cost-effective approach to site development.

During the design phase, CEC geotechnical engineers perform analyses, prepare reports, and support the preparation of drawings and specifications. Analyses and designs performed include:

- Earthwork Design and Recommendations
- Foundation Analysis and Design
- Grouting and Ground Improvement Design
- Landslide Investigation and Stabilization
- Soil and Bedrock Stabilization
- Slope Stability and Retaining Structure Design
- Subsurface Investigation, Sampling, and Testing

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SITE INFRASTRUCTURE SERVICES

CEC provides design solutions and integrated expertise at all stages of wind energy development or expansion projects. CEC coordinates with land owners, agents, utilities, and regulatory agencies, and helps oversee completion of the design through implementation in the field. When it comes time for installation of equipment on site, CEC manages the civil engineering planning and logistics for lay-down, delivery, line drops, crane walks, and intersection improvements.

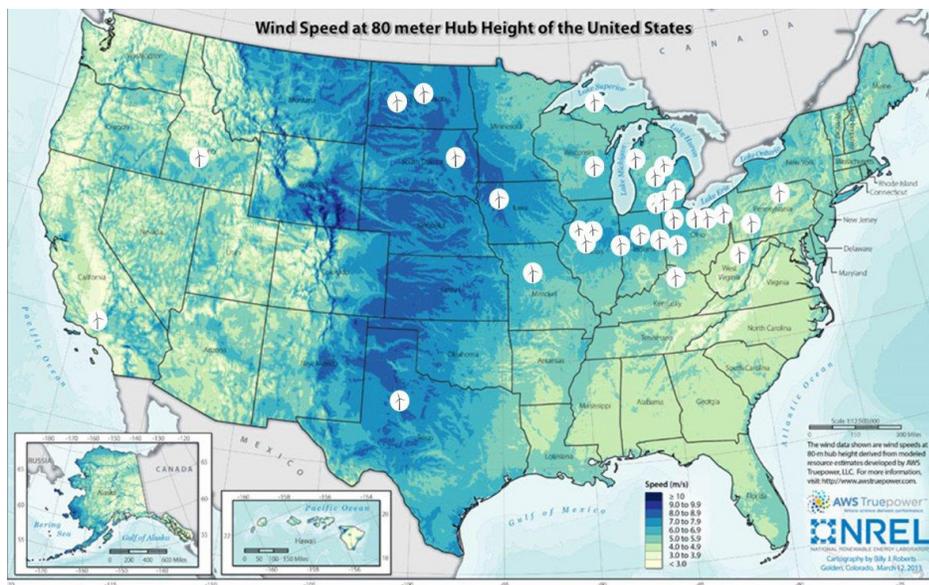
Additional wind energy-related services include:

- Meteorological Towers
- Inspections using small Unmanned Aerial Systems (UAS or drones)
- NPDES Permitting
- Stormwater Management Plans
- Geotechnical Subsurface Investigations
- Right-of-Way and Drain Permitting
- Road, Bridge and Culvert Analysis
- Electrical Design Coordination

CONSTRUCTION SERVICES

CEC's full suite of services enable productivity throughout various stages of a wind generation project, from addressing the turbine foundations, underground cable installations and power stations, to buffering properties.

CEC routinely monitors the construction of earthmoving operations, the installation of erosion control measures and building construction. CEC provides certified technicians for testing of soils, concrete, masonry and steel.



Locations of wind energy development project experience by CEC personnel