



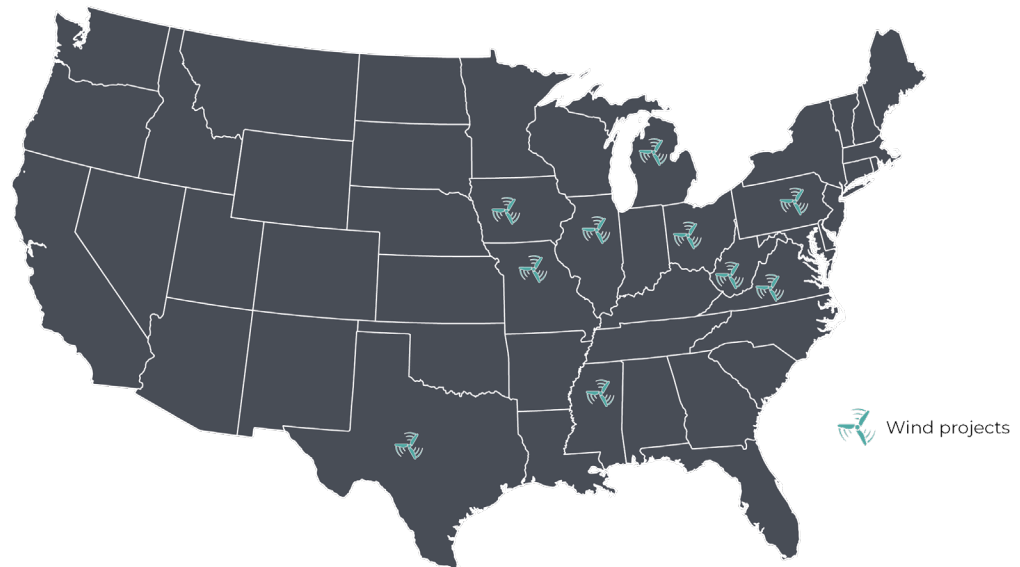
Civil & Environmental Consultants, Inc.

# Wind Energy Services

**CEC offers a wide range of site selection, permitting and planning, design and construction, and operations services that help our clients consider, plan, construct, operate, and monitor wind energy facilities.**

CEC understands the regulatory, construction, and operational challenges our clients face with wind energy generation. We treat each project as a unique opportunity to serve our clients with senior leadership and technical expertise from within our organization and our many partners.

## WIND ENERGY PROJECT EXPERIENCE



## SITE SELECTION SERVICES

Our multi-disciplinary teams guide our clients through the site selection phase of projects. CEC coordinates with landowners, real estate agents, utilities, and regulatory agencies. We understand the value of taking the time to understand potential project challenges up front so delays can be avoided as projects progress. As such, we stress the importance of identifying potential challenges that may interrupt or delay an individual project as soon as possible. Then, based on project needs and goals, we develop screening criteria (e.g., avoidance of threatened and endangered species impacts) that help our clients develop a strategic pathway to the timely and cost-efficient completion of their project.

## PERMITTING AND PLANNING SERVICES

During the permitting and planning phase, permit applications are developed that rely on developed project plans, defined project requirements, results of various field investigations and consultations, and the project schedule. Ultimately, this phase helps guide our clients through construction and operation. As a leader in biological field investigations, CEC's knowledgeable and qualified biologists, wetland scientists, conservation ecologists, and permitting specialists maintain excellent rapport with regulatory agencies, including numerous



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U.S. Fish & Wildlife Service regional offices, U.S. Army Corps of Engineers districts, and state agencies, while serving as advocates for our clients. CEC's biologists also include numerous federally permitted, USFWS-approved surveyors for various threatened and endangered species. Examples of relevant services include:

- Bat Acoustic Monitoring and Mist-netting
- Bald Eagle and Avian Population Surveys
- Incidental Take Permits
- Bald Eagle Conservation Plans
- Threatened and Endangered Species Evaluations
- Habitat Conservation Plans
- Wetland and Stream Delineations
- Section 401/404 Permits and Mitigation
- Cultural Resource Consultations and Surveys
- Invasive Species Assessments and Management
- National Environmental Policy Act (NEPA) Compliance



## DESIGN AND CONSTRUCTION SERVICES

CEC can support wind projects during the design and construction phases. We routinely monitor 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. Examples of relevant services 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



## OPERATIONS SERVICES

Implementing ecological mitigation requirements as well as post-construction monitoring are important elements of the operation phase of a project. Our multidisciplinary teams help guide our clients through this phase. CEC is skilled at addressing challenging issues that might arise, such as endangered species impacts or the need to implement adaptive management programs and operational changes. Our professionals are fully prepared to help clients navigate through any challenge that might arise.