

POWER GENERATION & TRANSMISSION | Wind



**SPEARVILLE WIND FARM
SPEARVILLE, KS**

Industry Challenges

Wind energy is a growing renewable alternative for electricity generation. Terracon is uniquely qualified to help clients optimize wind energy project design and minimize risk, saving time and money.

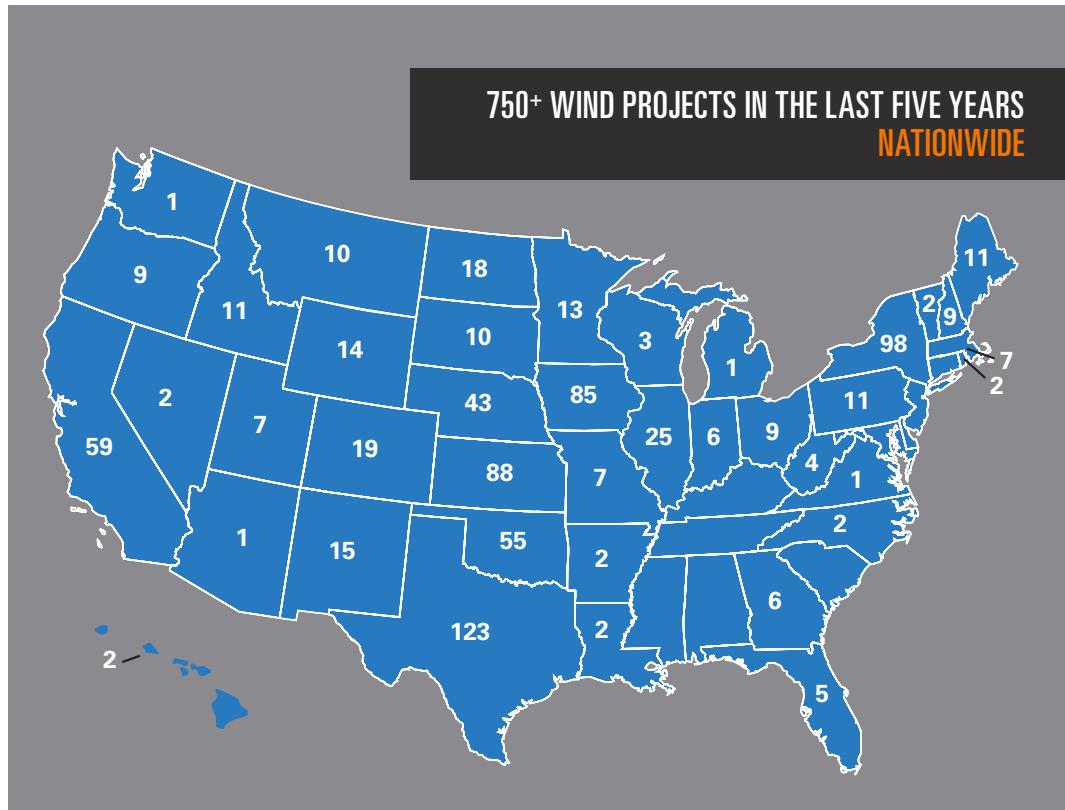
In the past three years, Terracon has supported more than 500 wind projects across 31 states. We understand the challenges of project siting and the importance of foundation optimization. Engaging with our clients early in the feasibility process mitigates risk and ensures site compatibility, allowing you to make informed decisions in qualifying your wind sites for further development.

Experience and Expertise

Terracon's focus is maximizing prudent allocation of development capital while minimizing capital at risk through our Desktop Constraints Analysis (DCA) and Report of Expected Geotechnical Conditions (REGC), both of which are quick and economical.

Project Siting

With DCA, we evaluate critical issues associated with wind project siting and development such as zoning, sensitive



habitats, wetlands, etc., allowing us to identify potential encumbrances that can impact CAPEX and identifying the path of least resistance.

Report of Expected Geotechnical Conditions (REGC)

Our REGC includes a focused site geology evaluation to determine the compatibility of wind turbine generator (WTG) foundation design options. The REGC draws from public domain data, but unlike other firms, also includes Terracon's proprietary \$1 billion repository of more than 50 years of nationwide geotechnical data.

Site Compatibility

Information gathered during the DCA and REGC enables us to determine the best approach to meet specific project needs and complete environmental surveys and geotechnical characterization. Our network of professionals include environmental scientists, who understand jurisdictional regulatory nuances and have working relationships with local regulators, and geotechnical engineers experienced in their local regions.

Design Optimization

Terracon is the engineer of record for the Patrick & Henderson (P&H) Tensionless Pier, P&H Anchor Foundation, and P&H Rock Anchor Foundation which are alternatives to traditional gravity spread WTG foundations. These options have various applicability based upon site soil and geologic conditions, but all provide considerable material and cost savings (up to 50 percent in some cases) relative to the gravity foundations. They also reduce risk related to seismic hazard, flood inundation, scour, and foundation fatigue, and can be re-certified for use in project repowering.

Construction Support

We assist with construction quality assurance/quality control, inspection, testing, and observation through our certified construction technicians and more than 130 testing laboratories nationwide. Our innovative reporting platforms offer clients near real-time access to testing results so deficiencies can be corrected immediately.

WHY TERRACON?

Resourceful. Terracon applies new processes, methodologies, and techniques to solve project challenges cost effectively. Our innovative tools and resources enable us to customize an approach to efficiently mitigate and prevent risks.

Responsive. Through our national network of offices, accredited laboratories, and exploration fleet, Terracon can act quickly to develop a customized approach to provide you the most cost-effective program to develop the right data for you.

Reliable. We deliver high-quality, expert soil and rock characterization using diverse exploration methods and software. This ensures the accurate and precise results you need to successfully mitigate risks.

"Terracon's innovative wind foundation design will literally change the industry. As the generators increase in size, towers increase height, and rotors increase in length, our foundation design makes the most sense. The cost savings and risk reduction are irrefutable."

-BLAIR LOFTIS, VICE PRESIDENT AND NATIONAL DIRECTOR OF POWER GENERATION & TRANSMISSION, TERRACON

BOLT CAGE INSTALLATION P&H TENSIONLESS PIER



FOUNDATION CONSTRUCTION



ENR Rankings | 2017



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