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Wind Energy Services

Contact a Professional

To find the best solution to your needs contact a professional.

Related Capabilities

- » Composite Structures
- » Ecological & Environmental Risk Assessment
- » Electric Power Failure Analysis & Prevention
- » EMF / RF Exposure & Health
- » Engineering Mechanics
- » Environmental Assessment of Technologies & Products
- » Environmental Modeling & Risk Assessment
- » External Hazard & Risk Assessment: Earthquakes, Floods, Explosions & Earth Movement
- » Fire & Flammability Testing
- » Life Prediction & Fitness for Service
- » Reliability Engineering
- » Transmission & Distribution Services

Overview



Exponent has been involved in all sectors of the energy field including wind, solar, oil and gas, hydropower, fossil-fueled and nuclear power plants. Most of our work centers on helping clients with their technical issues in support of their businesses and development of new solutions.

Exponent's Energy Consulting Experience

Exponent entered the energy consulting business in 1974, when the firm, then known as Failure Analysis Associates, was selected to provide technical support to the Electric Power Research Institute (EPRI) in the areas of structural integrity, materials behavior, and life prediction. Exponent has been active in the wind energy consulting business since the 1980s, when we were retained to investigate various engineering aspects at a large wind farm in California.

Since then, the firm has entered into commercial services, instrument manufacturing, engineering evaluations, and environmental, health, and materials risk assessment in direct support of electric utilities and original equipment manufacturers. We continue to rank among the largest consulting firms in the number of projects we have performed in the areas of energy generation and power plant component remaining-life assessments and failure investigations.

How We Can Help

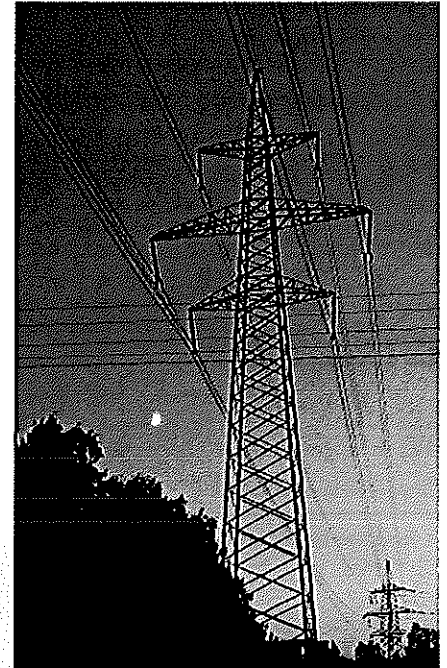
We can assist utilities, wind energy developers, transmission developers, and investors with all steps in a wind power project from the project feasibility stage through commercial operations. Exponent's overall energy management approach includes three steps: situational assessment, detailed implementation plan and budget/business case preparation, and plan execution. By completing these steps, our team ensures that an energy project is viable and the path to development is clearly charted.

The value that Exponent brings to its clients faced with the rapidly evolving wind energy area includes:

- » Power generation, transmission, and distribution regulatory, systems, and

operational knowledge

- » Deep, functional knowledge of engineering fundamentals: mechanical, structural, metallurgical, material, chemical, electrical, and economic
- » Wind turbine design reviews covering the aerodynamics, electronics, controls, and grid issues
- » Expertise to solve complex health and environmental issues in permitting; Exponent has testified at several wind farm permit hearings
- » Environmental, social, and public health impact and risk management capability, including EMF, acoustics, and aesthetics
- » Fluid mechanics, aerodynamics, and acoustics analyses
- » Feasibility analyses, site selection (including geotechnical assessments), and wind resource assessment based on large-scale data harvesting and numerical modeling
- » Convergence of our skills in risk, reliability, and vulnerability analyses to identify and resolve potential issues
- » Assessments of testing programs, failure analysis and prevention, and remaining-life assessments
- » Evaluation of subsystems and components, including turbine engine components, generators, rotor blade aerodynamics, transmissions, bearings, rotating machinery, gear boxes, hydraulics, pressure vessels, and piping
- » Instrumentation, monitoring, and evaluation of a wide range of mechanical, electrical, and thermal systems
- » Proven success in high-profile projects
- » Organizational assessment, change management, and business startup expertise
- » Expertise in technical and business facets of the energy system and markets, providing a one-stop shop for support in this critical area
- » Evaluating and managing the unique challenges of offshore wind platforms and operations.



Services Areas for the Wind Energy Industry

Exponent is unique because of the depth of expertise available within the firm. The service areas that collaborate on wind energy development projects are summarized in the figure below.

For more in-depth information on our wind energy-related services, please download our Wind Energy Services brochure.

