

**3DEXPERIENCE®**

ENERGY, PROCESS & UTILITIES

SUSTAINABLE WIND TURBINES

Faster time-to-market with improved reliability and lower costs



IMPROVE TIME-TO-MARKET AND RELIABILITY WHILE REDUCING COSTS

Focus on green energy has increased the demand for wind energy, giving rise to thousands of inland and offshore wind farm projects worldwide. To meet this growing market, wind turbine manufacturers must develop innovative products and increase production capacity while keeping costs down amid increased competition. Dassault Systèmes Sustainable Wind Turbines Industry Solution Experience, powered by the 3DEXPERIENCE® platform, helps you innovate and be cost-efficient by reducing waste, accelerating time-to-market, and improving quality.

INDUSTRY CHALLENGES AND TRENDS

The drive for cleaner energy has caused significant demand for wind energy, providing wind turbine manufacturers the opportunity to significantly ramp up production. But increased competition, decreased government grants and subsidies, and lower natural gas prices in many countries have put tremendous pressure on the industry to reduce wind energy cost. Because wind turbines are the main cost (about 65 percent for onshore and 35 percent for offshore), manufacturers have to lower development and manufacturing costs while improving product performance and reliability. Successful manufacturers will need to continue developing innovative products to maintain their lead.

INNOVATE WITH SMARTER PRODUCTS

How do you develop smarter products and differentiate yourself? Using a unique RFLP (Requirements, Functional, Logical, and Physical) systems engineering approach, companies can manage requirements, systems architecture, modeling, and simulation with full traceability. Individual control systems and the entire wind turbine can be modeled and validated, helping companies develop smart and innovative products.

INCREASE PERFORMANCE AND RELIABILITY

How do you reduce failure rates while minimizing weight and cost? How do you maximize performance and reliability under varied operating conditions? Manufacturers can accurately predict complex real-world behavior of the wind turbines, including vibration, nonlinear deformation and stresses, fracture and failure, and multi-physics effects (like fluid-structure interactions). Using sensitivity studies, manufacturers can identify optimum design parameters and quickly engineer market-leading wind turbines.

INTEGRATED PROJECT AND PRODUCT MANAGEMENT TO DELIVER ON TIME AND ON BUDGET

How do you reduce design-to-manufacture time? How do you manage project data and collaborate with stakeholders? The Sustainable Wind Turbines experience enables companies to integrate information as they plan and execute projects, such as costs, resources, and suppliers, to minimize new product introduction risks. Manufacturers can manage wind turbine development from preliminary design to certification in an integrated manner. Project dashboards and reports with accurate up-to-date information help create better decision making to optimize resource utilization, minimize risks, and ensure projects are completed on time and on budget.

Key Benefits

The Sustainable Wind Turbines experience provides unparalleled engineering, manufacturing, and project management solutions that integrate multidisciplinary information in a global collaborative environment. This helps manufacturers decrease development and operating costs, reduce engineering and manufacturing time, and increase product quality to develop and deliver best-in-class wind turbines.

INCREASE PRODUCTION THROUGHPUT AND QUALITY

How do you simultaneously increase production throughput and quality? High quality manufacturing of composite blades with a sustained low rejection rate is very challenging. Many production variables need to be carefully analyzed and controlled. The Sustainable Wind Turbines experience lets manufacturers plan and validate manufacturing processes even at the early stages of product development.

Using data-driven, rules-based, continuous process improvement methodology, manufacturers can perform analysis of shop floor data for discovery of hidden root causes of defects. Continuous monitoring of the data helps quantify defect risks to enable preemptive corrective actions.

INDUSTRY PROCESS EXPERIENCES

Dassault Systèmes Sustainable Wind Turbines Industry Solution Experience includes:

- Collaborative & Social Intelligence
- Requirements Driven Project Management & Monitoring
- Structure and Systems
- Composite Blade Design & Simulation
- Advanced Simulation & Optimization
- Collaborative Sourcing
- Manufacturing Planning
- Composite Blade Production & Quality Control

Our 3DEXPERIENCE platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 170,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



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