

Enabling Cost Optimization through Product Cost Management

Renewable Energy Wind Turbines-
Onshore and Offshore



Abstract

At Tech Mahindra, we offer unparalleled **product cost management solutions for the renewable energy industry**. Our comprehensive solutions for the wind energy sector span across the entire product life cycle, from design to deployment. Our objective is to help you achieve profitability, save valuable time and resources, and reduce the need for ad hoc investments. We provide interventions on the assembly, systems, subsystems, components, and parts levels in both build-to-print and build-to-specifications approaches.

Our value engineering approach for the wind energy sector includes:

- ▶ Redesigning for manufacturability
- ▶ Sourcing new suppliers (from emerging markets)
- ▶ Optimizing functionality and application of technical business strategies
- ▶ Ensuring comprehensive product coverage and agile methodologies
- ▶ Reducing cost overruns across the value chain

Introduction

Wind energy has always existed as an alternative, greener, and more sustainable source. It is a renewable, emission-free energy source, and its growing importance is imminent as the world seeks to reduce its dependence on fossil fuels. Wind power currently generates less than 1% of the world's electricity, and its steady technological growth suggests that it will be an indispensable energy source in the coming decade. Apart from being an environmentally friendly solution, wind power offers unique technological benefits. Not only do wind turbines positively impact their surrounding environment, they also do not come with any of the adverse effects of conventional energy sources, such as acid rain, global climate change, radioactivity, as well as land and water contamination.

Renewable energy is going mainstream in the power sector with significant growth in installed power capacity worldwide. In developing and emerging countries, distributed renewable energy systems provide access to electricity to an increasing number of households. Most importantly, wind energy aligns with the three major trends shaping the future of energy production—decarbonization, decentralization, and digitization.

Tech Mahindra's product cost management solution for the renewable energy sector is integrated with an advanced value engineering approach that benefits the product life cycle. With multiple centers of excellence (CoE) spanning across domains with global delivery models, we get involved in the early stages of the product development process to enable cost optimization through:

- ▶ Should Costing
- ▶ Direct Material Productivity Ideas
- ▶ Teardown and Benchmarking
- ▶ Value Analysis and Value Engineering and Automation
- ▶ Data Analysis
- ▶ Additive Manufacturing
- ▶ Feature and Functional Analysis
- ▶ Turnkey Consulting
- ▶ Digital Twins

Our Solution



Tech Mahindra is a leading solution provider in the energy and utility industry, serving sectors such as power, water, renewables, electric vehicles, and mining. Our extensive expertise allows us to help customers achieve strategic growth through innovative digital technologies, engineering services, infrastructure and enterprise security, platforms, and network services. We also address incumbent challenges in the utility industry with our continuous investments in innovative ideas and solutions. Our solutions cater to a range of portfolios such as mechanicals, electricals, composites, and plastics.

▶ **New Product Introduction (NPI): Build-to-Print Design**

- Organizational methodology to integrate cost management for decision-making at the design stage
- Comparison between different concepts to arrive at an optimized design and manufacturing process

▶ **Teardown and Benchmarking**

- Physical data collection
- Cost comparison
- Value engineering
- Function-to-cost analysis
- Business cases report

▶ **Direct Material Productivity (DMP) Ideas**

- Discover product improvement potential
- Analyze the current methods
- Generate original ideas
- Develop an implementation plan
- Evaluate the new method for product and cost reduction

▶ **Customized Automation**

- Digitized tools across web and cloud
- Excel-based tools
- Standalone market tool automation

▶ **Should Costing: As-Is Condition**

- Rough order magnitude
- Concept costing
- Target costing
- NRE costing
- Detailed costing

▶ **Alternative Suppliers**

- Supplier identification
- Soft benchmarking
- RFQ preparation and floating
- Clarifications and concept reviews
- Receipt of commercial proposal
- Quote comparison statement

▶ **Supply Chain and Automation**

- Pre-order spend analysis and category management
- Order execution with real-time performance tracking and analysis
- Productivity improvement initiatives post completion



Benefits

- ▶ **Lower production costs** accrued in manufacturing of goods
- ▶ **Cost reduction** for inventory management and disposal of packaging and other product protection/transportation materials
- ▶ **End-to-end** supplier relationship management
- ▶ **Improved and modified** products, including costs of correcting defects
- ▶ **Reduced overheads** of supplier and customer transactions, including billing, collection, payment preparation, and receiving processes
- ▶ **Savings of up to 15%** on costs of different products
- ▶ **1000+** products delivered, reduced efforts by **30%** and increased productivity by **15%** YOY
- ▶ **Saved around \$500 million** on different products
- ▶ **Developed 15+** customized and automated templates

The NXT.NOW™ Advantage

Tech Mahindra has been helping renewable energy companies for over eight years, working on different product ranges—from 1.6 MW to 12 MW.

- ▶ Our renewable insights platform facilitates remote asset health monitoring, real-time production forecasts and alerts, advanced interactive plant performance analysis, and automatic fault localization.
- ▶ Our platform offers smart and digital features such as SCADA/grid status and location maps, which assist utilities in maintaining and lowering operations costs.
- ▶ Our end-to-end OMS solution for renewable energy (solar and wind), predictive maintenance and workforce planning, machine learning, and an engineering platform are all integrated with SAP/Oracle and the native command center.



About Tech Mahindra Engineering

Tech Mahindra's Integrated Engineering Solutions (IES) delivers solutions enabling your organization to be a "Digital Engineering Enterprise" across sectors, whether it is aerospace and defense, automotive, industrial, telecom, healthcare, energy and utilities, or ISV. With 50+ exclusive global engineering centers supporting new program launches and 350+ active global customers, Tech Mahindra IES is an established leader for Engineering Services in the industry.

Tech Mahindra delivers exponentially higher value to engineering enterprises by collaborating with them across three key tenets—**robust products, ubiquitous platforms, and cyber factories**. The vision for Tech Mahindra Engineering is founded on the new digital economy, considering emerging market trends like digital engineering, intelligent workplaces, adoption of tele-everything, an end-to-end connected and immersive approach covering smart manufacturing, and the need for an overall resilient business framework.

We call this approach of **accelerating** outcomes, **inventing** better products, and **transforming** businesses into digital as: Engineer Your NXT.NOW™

Contact Us:

ies_marketing@techmahindra.com

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www.twitter.com/tech_mahindra

www.linkedin.com/company/tech-mahindra

www.techmahindra.com

top.marketing@techmahindra.com

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