



# We are Black & Veatch.

The ever-increasing demand for renewable energy presents new challenges for power producers. From the variable nature of the generation to the distributed nature of the assets, wind energy projects have a unique set of factors to consider.

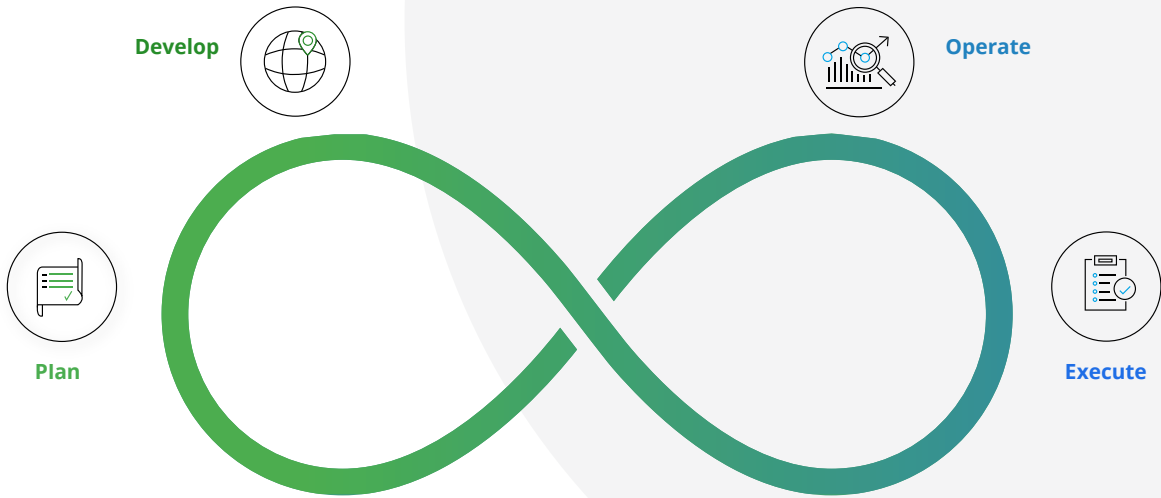


**BLACK & VEATCH**



# FULL SERVICE, LIFE-CYCLE SOLUTIONS

Developing a comprehensive energy portfolio that includes renewable assets can be daunting. Black & Veatch provides a scope of services that spans a project's entire life to simplify the process for our clients and ensure they get a solution that meets their business requirements and operational needs.



## PLAN & DEVELOP

Project success is dependent on a thorough strategy. With the ability to analyze markets, perform technical and financial evaluations, identify viable project sites, and complete detailed feasibility studies, Black & Veatch provides the inputs needed for clients to make informed decisions.

### PLANNING STAGE OFFERINGS

- Market Assessment & Analysis
- Program Strategy Development
- Prospecting/Site Identification
- Feasibility Assessment

### DEVELOPMENT STAGE OFFERINGS

- Project Development Management
- Facility Conceptualization

- Land Acquisition
- Resource Assessment
- Environmental Studies
- Engineering Studies
- Permitting
- Project Cost / Scheduling Estimating
- Interconnection Application
- Financing/Capitalization Evaluation
- OFE Procurement Support
- Execution Contracting Support

# EXECUTE

Once projects reach the execution stage, ensuring the project stays on budget and schedule becomes a priority. With more than 4,000 engineering, construction, and procurement professionals in our worldwide Power organization and our extensive OE and EPC experience, we can provide experienced professionals to support a project in any role, anywhere in the world. In addition to experienced wind professionals, we have teams with substation, transmission, and battery storage experience to support the entire scope of a typical project.

## EXECUTION STAGE OFFERINGS

- Market Assessment & Analysis
- Program Strategy Development
- Program/Portfolio Execution Management
- Design Reviews
- Procurement Support
- Construction Management/Support
- Site Surveying & Investigation
- Electrical Studies & Design
- Site/Civil Studies & Design
- Structural/Foundations Studies & Design
- Commissioning
- Operator Training

# OPERATE

Our life-cycle approach maximizes “after market” operations. Black & Veatch professionals help identify performance indicators, conduct tests and monitor operations. We develop tools clients can use to confidently manage assets for top performance and the highest financial reward. Additionally, we provide performance assessment services which can protect you from underperforming assets and mitigate issues before they begin to affect your ROI.

## OPERATION STAGE OFFERINGS

- Warranty Management
- Preventative Maintenance
- Major Corrective Maintenance
- Predictive Maintenance
- Performance Improvement
- Remaining Life Assessment
- Asset Disposition Studies
- Decommissioning or Decommissioning Support

# PROJECT EXPERIENCE

With advanced engineering experience and deep knowledge of diverse power generation and distribution systems, Black & Veatch has excelled at delivering a comprehensive set of services that span the life of a wind project.

**56+ GW**

of wind project experience, globally

**1+ GW**

of partial and full wind repowering project experience

**30+ PROJECTS**

as Independent Engineer since 2016

**275 MW**

of wind EPC experience

**100+ PROJECTS**

as Owner's Engineer, Detailed Designer, Construction Manager since 2016



# EXCELLENCE IN WIND ENERGY

- More than **50 years** of supporting clients through the entire lifecycle on wind projects
- **440 years of experience** from more than 25 wind professionals
- Instrumental in client earning **Platinum verification from the Institute of Sustainable Infrastructure's Envision Program** (the first two wind projects to receive the honor which is the highest level based on a consistent, consensus-based framework for assessing sustainability, resiliency, and equity in infrastructure)



## SUPPLY CHAIN

- Worked with all major turbine manufacturers to purchase more than **\$26 Billion in wind equipment** for clients globally
- Execution support on all types of wind energy procurement and construction contracts globally
- Turbines ranging from 1 KW – 5 MW, project sizes from 1 KW to 500 MW and **fleets totaling up to 5,000 MW**



## ENVIRONMENTAL EXPERTISE

- Environmental support for more than **90,000 MWs of renewable energy**
- Support obtaining federal, state and local environmental approvals in more than **30 U.S. states and 10 countries**



## INTERCONNECTS

- Completed renewable integration projects in **9/10 U.S. Electric Power Markets**
- **40+ interconnection projects** with renewable generation since 2016



## WHY CHOOSE BLACK & VEATCH

- Reduced risk and higher ROI
- Gained efficiencies and convenience
- Safety and reliability
- Higher constructability and quality

