



Conventional Power Generation Services

Prepare and Protect Your New and Operating Assets



BLACK & VEATCH

New Generation Engineering

Comprehensive project implementation from concept through facility commissioning and commercial operation for combustion turbine and renewable energy technologies.

Project Development Support

- Scenario Planning
- Market Assessment
- Site Evaluation/Selection
- Technology Evaluation
- Performance Estimate
- Permitting Plan
- Feasibility Study
- Conceptual Design
- System Studies/Analysis
- Preliminary Engineering
- Contracting Strategy
- Cost Estimate (Capital and Operations and Maintenance)
- Schedule Development and Assessment
- Permit Engineering Support
- Renewable Energy Portfolio Planning and Strategy
- Advanced Combustion Turbine Technology Risk Assessment
- Combined Cycle Startup Time and Ramp Rate Optimization
- Risk Mitigation and Planning
- Project Execution Planning

Owner's Engineer

- Detailed Design of Portions of New Generating Facilities
- Engineering, Procurement and Construction (EPC) Bid Document Development and Bid Process Support
- EPC Contract Administration and Technical Review
- Equipment Procurement Support
- Equipment Shop Inspection Services
- Construction Monitoring and Compliance Planning
- Startup/Commissioning Monitoring

Project Implementation

- Detailed Design/Engineering
- Procurement
- Construction Management
- Project Planning and Scheduling
- Project Cost Control
- Startup/Commissioning Management
- Plant Performance Testing
- Operator Training

Asset Management

Focus on improving the performance of your power generation assets with services for: fuel, performance, operations, maintenance, outages and optimization.

Fuels Consulting

- Fuel Impact Analysis and Fuel Flexibility
- Fuel Switching and Blending, including Biomass and Gas
- Integrated Capital, Fuel and Environmental Strategy
- Fuel Sourcing and Transportation

Performance Engineering

- Integrated Performance, Maintenance and Reliability Design
- Monitoring and Diagnostics
- Performance Consulting and Assessment
- Performance Monitoring
- Performance Testing
- Plant Optimization

O&M Consulting

- Maintenance and Reliability Improvement
- O&M Assessment
- Equipment Failure Root Cause Analysis
- Turbine Generator Vibration Analysis and Troubleshooting
- Outage Management and Assessment
- Plant Life Assessment
- Reliability Analysis (HAZOP and RAM Modeling)
- Retirement and Decommissioning Assessment

O&M Training Programs

- Plant Operator Systems Training
- Heat Rate Training Programs
- Power Generation Industry Fundamentals Programs
- Operating Procedures Development

Retrofit and Plant Betterment Engineering

Our unparalleled experience and expertise in consulting, engineering, design, procurement, construction and owner's engineer services ensures your power generation facilities are ready for the market demands of today and tomorrow.

Feasibility Studies | Conceptual Design | Detailed Design | Permitting Support | Owner's Engineer | Procurement Support | Construction Support | Repowering

- Environmental
 - Air quality control
 - Cooling water intake/outfall
 - Plant effluents
- Ash Ponds/Landfills
- Bulk Material Handling
- Auxiliary Electric System
 - Equipment replacement
 - Load flow, short circuit, voltage drop, arc flash
 - Arc flash hazard
 - Black start
 - Protective relaying
- Compressed Air
- Distributed Control Systems
- Cycle Heat Rejection and Equipment Cooling
- Security
 - Cyber security (CIP)
 - Protection and control (PRC)
- Fire Protection
- Fuel Gas/Fuel Oil Supply
- High Energy Piping
- Steam Generators/HRSGs
 - Air heaters
 - Draft system
 - NOx modifications
 - Mill upgrades/inerting
 - Soot blowing
 - Fire protection
 - Surface replacement
- Steam Turbine Generators
 - Upgrades/recovery
 - Exciter replacement
 - Generator evaluation modification
 - Turbine water induction prevention
- Feedwater, Boiler Feed and Feedwater Heaters
- Water Management
- Material Application
 - Welding and metallurgical services
 - Protective coatings and linings
 - AC interference/corrosion
- Decommissioning Studies
- CT Combined Cycle Upgrades

Combined Heat & Power

CHP facilities are key assets in the daily challenge of supplying reliable, resilient and sustainable energy. We focus on providing the key services that deliver CHP facilities suited to the unique needs of industrial, municipal, and campus applications.

Strategic Planning | Feasibility Studies | Detailed Design | EPC Services | Operations Support

- District Heating
- Packaged Power and Heat Solutions
- Tri-Generation (Power, Heat, Chilled Water)
- Digester Gas and Biogas Systems

Environmental

Support clients in addressing environmental regulatory compliance and permitting requirements for new and existing energy and industrial facilities.

Project Development, Planning and Permitting

- Facility Siting, Pipeline and Transmission Line Routing Studies
- Permitting Requirements Identification
- Agency Consulting Support/Permit Negotiations
- Public Hearing and Community Relations Support
- Technical Design Input to Permitting Activities
- Preparation of Permit Applications

Air Quality

- Environmental Permit Applications
- Regulation Planning
- Air Dispersion Modeling
- Operating Permits

Environmental Science

- Environmental Impact Assessments and Mitigation Plans
- Wetland Delineation and Mitigation
- Noise Surveys, Assessments and Mitigation Design
- Protected Species Surveys and Habitat Mapping
- Aquatic Studies, Water Conservation and Reuse

Compliance Planning and Analysis

- Regulatory Analysis and Scenario Planning
- Compliance Risks and Solutions Feasibility Studies
- Prevention and Response Plans and Studies
- Management Programs and Reporting Support

Distributed Generation

As world leaders in next-gen energy infrastructure, our experts in distributed generation are focused on delivering economically viable solutions that meet your expectations for reliability and resiliency.

Strategic Planning | Feasibility Studies | Detailed Design | EPC Services | Operations Support

- Utility Sited Reciprocating Engines
- Behind the Meter Microgrids and Nanogrids
- Renewable Energy Integration To Microgrids
- Utility Distribution, Feeder, and Island Microgrids
- Asset360® Remote Performance Monitoring, Public Kiosks and Web Pages
- Microgrid Controls Integration and SCADA Systems
- Energy Storage
- Campus Utilities Systems, Including Central Plants
- Mission Critical Facilities
- Large-Scale End-User Sited Distributed Generation Programs
- Stand-By Generation and Resiliency Solutions
- Biomass Power Generation
- Biomass-To-Gas or Liquid Fuels
- Biomass Pelletizing Facilities