

Tetra Tech has supported the energy industry for nearly four decades. We have experience in siting, permitting, designing, and constructing electric transmission and distribution facilities across North America. Our staff experience ranges from maintenance and upgrade projects, to new 345 kilovolt (kV), 500 kV, and 765 kV ac lines, and +400 kV dc lines. Projects have extended to lengths over 1,100 (1,770 km) miles long and involved multiple jurisdictions. One example is the Gateway West Transmission Line Project that runs through Idaho and Wyoming. As a result of Tetra Tech's vast experience, we can proactively handle the challenges associated with upgrading and expanding the grid to meet future energy needs.

Tetra Tech's financial strength and depth of resources enable us to provide comprehensive and integrated services to support any size transmission project. We self-perform the majority of our work. Our international competence and local delivery means we can rapidly mobilize and cost-effectively support siting, permitting, designing, and construction of transmission facilities throughout North America. Tetra Tech has strong working relationships with regulatory agencies across North America and works with citizens and local governments to successfully site and permit transmission projects. Our tried and true processes, and commitment to our clients, ensure you will consistently receive professional and high quality service.

PERFORMANCE HIGHLIGHTS

- In the past 10 years, supported more than 1,000 energy projects throughout North America
- Experience from hundreds of transmission and distribution line and substation projects
- In-house staff experience includes:
 - Multi-jurisdiction projects
 - Lines over 1,100 miles (1,770 km) long
 - 46 kV to 765 kV, ac and dc
 - Underground and submarine cable
- Grid connection feasibility studies for over 350 renewable energy projects
- Depth and breadth of resources with more than 12,000 employees in 330 offices worldwide, including 3,600 employees in 50 Canadian offices
- Financial strength to stand behind large engineer, procure, and construct (EPC), balance of plant (BOP), and other construction projects, with \$2.29 billion in revenues

Services

Tetra Tech provides a full suite of capabilities for utilities and other transmission owners and developers.

Development

- Facilities Siting and Feasibility Studies
 - Corridor Analysis and Route Selection
 - Substation and Converter Terminal Siting
 - Phase I and II Environmental Site Assessments
 - Critical Issues (Fatal Flaw) Analysis
 - Due Diligence Support
- Licensing and Permitting
 - Permit Strategy Development
 - Federal, State, and Local Permit Applications
 - NEPA and State Equivalent Assessments
 - State Siting and Need Certificates
 - Agency Consultation and Negotiation
 - Expert Testimony
- Capital Cost Estimating
- Preliminary and Detailed Design
- Geographic Information System
- Public Involvement Programs
 - Presentation Support
 - Open House Meetings
 - Community Outreach
- Project Management
 - Cost Control
 - Schedule Control
 - QA/QC

Construction

- Construction Support
 - Environmental Management and Construction Plans
 - Stormwater Pollution Prevention Plans
 - Environmental Specifications for Engineering and Construction
 - Wetland Mitigation Plans and Specifications
- Environmental Inspection Services
- Engineering Design
- Engineering Services
- Construction Permits
 - DOT Highway Access and Highway Crossing Permits
 - Federal Aviation Administration Notifications
 - State Pollutant Discharge Elimination System Permits
- Construction Management
- Conductor Stringing and Clipping
- OPGW/Fiber Optic/Fusion Splicing
- New Construction/Pole Replacement/Rebuilds/Maintenance
- Clearing/Grading
- Access Roads
- Foundations and Structures
- Right-of-Way Restoration
- Environmental and Safety Training for Construction Staff

Operation

- Compliance Monitoring
 - Revegetation and Site Restoration Monitoring
 - Habitat Recovery Monitoring
- Right-of-Way Vegetation Management Plans
- Compliance with NERC and PSC Reliability Standards
- Integrated Vegetation Management
- Engineering Substation and Transmission Lines
 - Asset Management
 - Condition Assessment
 - Investigating and Solving Operations and Maintenance Issues
 - Rehabilitation, Replacement, and Upgrade





Representative Clients and Projects

Tetra Tech staff have supported public utilities, transmission owners, public power authorities, and independent project developers with the siting and permitting of thousands of miles of electric transmission and distribution lines, ranging from 46 kV to 765 kV. This transmission and distribution line experience includes more than 100 transmission line projects in the U.S. and Canada consisting of new and upgraded overhead lines, underground and submarine cables, as well as substations and converter terminals.

- PacifiCorp and Idaho Power, Gateway West 230 kV and 500 kV Transmission Line Project, Idaho and Wyoming
- Okanogan Public Utility District No. 1 of Okanogan County, Methow 115 kV Transmission Line Project, Washington
- Blythe Energy LLC, Blythe 230 kV Transmission Line Project, California
- Hydro One, Bruce to Milton 500 kV Line, Tower Foundation Design, Ontario, Canada
- New York Power Authority, Tri-Lakes Reliability Project, Adirondack Park, New York
- Bluewater Wind LLC, Delaware Offshore Wind Park, 138 kV and 230 kV Submarine Cables and Interconnections, Delaware
- Ketchikan Public Utilities, Swan Lake – Lake Tyee 115 kV Intertie Project, Alaska
- Yukon Energy, Carmacks Transmission Line Project, 138 kV and 25 kV Transmission Lines and Substation Project, Yukon, Canada
- Western Area Power Administration, 500 kV Transmission Line Project, Palo Verde, Mexico to Arizona
- Florida Power & Light Company, 230 kV Line, Broward County, Florida
- Castle & Cooke, Inc., Lanai Wind Project, 150 to 200 kV dc Submarine/Underground Cable, Hawaii
- Hydro Ottawa Limited 230 kV-27.6 kV substation, composed of two (2) 230kV incoming lines and six (6) 27.6kV feeders, Ontario
- Hydro Québec, Wemindji 120kV-25kV Station equipped with two 22.5 MVA power transformers and four 25kV feeders, Quebec



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