The Transmission group of Quanta Technology is comprised of industry experts with extensive utility experience. Quanta Technology has a strong customer focus to ensure that our clients’ objectives are fully and effectively met. Our service offerings are flexible so that they can be tailored to meet specific client objectives.

Advances in high power electronics systems including FACTS Controllers and HVDC transmission technology have enabled power systems designer and operators to more efficiently and effectively design and operate the future and existing systems. VSC-based HVDC transmission, asynchronous operation of renewable energy sources with the bulk energy system, and control over transmission reactive and active power flow are among many the novel benefits of these advancements. For example, as the process of establishing new transmission corridors has effectively become tedious and complicated, utilities consider measures to maximize the established ROW power density, including AC to DC conversion. Such a solution requires a merger of both AC and DC systems knowledge to accommodate practical solutions. Quanta Technology team has the expertise and capability to assist clients with this and similar challenges.

Quanta Technology has a highly proficient staff skilled in a broad spectrum of topics that Control Schemes, Simulation and Modeling, System Studies, Harmonics and Power Quality, Environmental Planning, Economic assessment, EMF studies, Compliance Regulations, Design review, Business drivers, and Policies affecting the industry. Our Transmission service teams demonstrate great agility in tailoring services and solutions that integrates these capabilities into products that completely satisfy the client’s needs now and for the future.

Our service offerings in this space include:

**HVDC & FACTS Technology**
- Economic Assessment and Feasibility studies
- Power Quality
- Filter Design
- EMF and Environmental Planning
- Railroad and Pipeline Interference
- Transmission and Substation ground Design
- Transmission and Generation feasibility/interconnection studies
- Simulation and control system modeling:
  - HVDC (LCC & VSC)
- Integration of on-shore and off-shore wind energy into the AC system
- Insulation coordination (AC and DC):
  - Lightning studies
  - Switching surge studies
- AC/DC interaction studies
- Conversion of AC transmission lines to HVDC Transmission lines
- Real-Time Digital Simulation (RTDS)

**Simulation & Control**
- SVC, STATCOM, TCSC,
- Reactive power management
- Detailed modeling and simulation of digital and analog controls in electromagnetic transient, stability and other technical programs:
  - PSS/E, PSLF, PowerWorld, DSATools, Power Factory
  - PSCAD, EMTP-RV, ATP
  - Small Signal Analysis
- Contingency Analysis
- Special Protection Scheme, Remedial Action Schemes
- Voltage Stability
- Transient Stability analysis
- Analysis of sub-synchronous resonance phenomenon:
  - Thermal generators,
  - Wind turbines
  - Series capacitors, HVDC & FACTS

For more information regarding Quanta Technology’s HVDC, FACTS & High Power Electronics capabilities, please contact Bryan Rushing at (919) 334-3021 or brushing@quanta-technology.com.