

# TRANSMISSION PLANNING & SYSTEM STUDIES

RMS Energy brings extensive expertise in transmission planning and system operations, delivering comprehensive studies in system impact, cluster projects, restoration planning, and regional planning. Our strategic approach to planning and design ensures precise modeling of complex transmission systems, enabling our clients to address growing electricity demand, integrate renewable energy resources, and strengthen overall system reliability.



- ⚡ COMPREHENSIVE ANALYSIS OF COMPLEX TRANSMISSION SYSTEMS ⚡
- ⚡ DETAILED STEADY-STATE, DYNAMIC, AND TRANSIENT BEHAVIOR INVESTIGATIONS ⚡
- ⚡ INDUSTRY STANDARD TOOLS – PSSE, PSLF, DSA TOOLS, PSCAD, ASPEN, CAPE ⚡
- ⚡ SOPHISTICATED MODEL DEVELOPMENT FOR DIVERSE RENEWABLE ENERGY SOURCES ⚡
- ⚡ FEASIBILITY ASSESSMENTS, SYSTEM IMPACT, AND CURTAILMENT STUDIES ⚡

# OUR SERVICES

TAILORED SOLUTIONS DRIVING RESILIENT, FUTURE-READY TRANSMISSION SYSTEMS

## Transmission Planning & System Study Challenges

### ⚡ AGING INFRASTRUCTURE

- Reduced capacity and efficiency.
- Increased risk of failure on older assets.
- Upgrading or replacing legacy equipment without compromising reliability.
- Difficulty accommodating new technologies.

### ⚡ RENEWABLE ENERGY INTEGRATION

- Location constraints often requiring significant new transmission buildout.
- High penetration of inverter-based resources can reduce system inertia impacting frequency and voltage stability.
- Traditional protection schemes may not function properly with bi-directional and variable flows from renewables.
- Integrating batteries or other flexible storage resources require new modeling and system studies.

### ⚡ GRID CONGESTION

- Interconnection requests facing delays or costly upgrades due to limited transmission capacity.
- Finding cost effective mitigations to address congestion and avoid curtailment.
- Persistent congestion can limit operators' flexibility to reroute power during outages or contingencies.
- Congested lines prevent full utilization of renewable generation which undermine clean energy goals.

## RMS Energy Offerings

### ⚡ TRANSMISSION PLANNING

- Steady-state, dynamic, and transient analysis using industry-standard simulation tools.
- In-depth system impact, cluster project, restoration, and regional studies to assess impact of proposed transmission projects on existing power system.
- Power system modeling expertise to accurately represent complex transmission systems.
- Short-circuit fault mitigation, Remedial Action Scheme (RAS) studies, and Under voltage load shedding scheme studies to enhance system reliability and security.

### ⚡ GENERATION INTERCONNECTION

- Modeling, simulation, analysis, and technical studies for generation interconnection projects.
- Extensive experience and accomplishments across all major ISOs/RTOs within North America.
- Steady-state, dynamic, protection system, and electromagnetic transient simulations

### ⚡ MODEL DEVELOPMENT

- Rigorous model checking, validation, and tuning to ensure accuracy and integrity of system model.
- Sophisticated model development for diverse renewable energy sources including PV solar, battery energy storage systems, and pump storage facilities.
- Support converting user-defined models (UDM) to generic models that maintain similar transient responses.

## WHY CHOOSE RMS ENERGY?



EXPERTISE



CUSTOMER FOCUS



INNOVATION



RELIABILITY



SAFETY



Connect with us to learn more about how we can support your power system needs and help you achieve your energy goals.



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