
Senior Engineer

Renewables Modeling and Studies

About Elevate Energy Consulting

Elevate: to raise, uplift, promote, upgrade, improve, advance, elate

Elevate Energy Consulting was formed to *elevate* clients across the electricity ecosystem as we strive for a reliable, resilient, and affordable clean energy future. With a blend of deep expertise across bulk power system planning, design, control, protection, and operations, we support our clients tackling the most challenging issues facing the energy transition. Our experience and deep regulatory background in North America also enable us to support clients to ensure compliance with existing and future obligations.

We work on diverse projects to help *elevate* our clients across a broad spectrum of reliability-centered topics – modeling, studies, protection settings, event analysis, optimization, systems integration, process improvements, internal controls, compliance evidence, etc. Our goal is to *uplift* and *elevate* our clients and to ensure that our work has positive impact for the betterment of our industry and society. Join our rapidly growing team to tackle imminent challenges facing the grid of the future.

Position Summary

As an early stage startup with big plans to have a significant positive impact on the electricity sector, this role will play a key part in helping the organization tackle exciting projects related to studying the reliability impacts of a world dominated by inverter-based resources (IBRs), such as solar, wind, and energy storage resources. Projects will range from developing IBR models and conducting model quality checks, to conducting detailed powerflow, dynamics, short-circuit, and electromagnetic transient (EMT) studies, to supporting clients with conducting root cause analysis of real-world IBR grid events. This is a unique and rare opportunity to join highly technical industry leaders with a clear mission and vision.

Roles and Responsibilities

This role will be specifically responsible for serving as a subject matter expert on power system modeling and studies, inverter-based resource modeling and study work, and a range of other engineering projects to support renewables integration and analyses.

The following are a list of roles, responsibilities, and projects related to this position:

- Conduct power system reliability studies (powerflow, dynamics, EMT, and short-circuit) to study the reliability of interconnecting IBRs to the bulk power system.
- Develop power system models of IBRs and conduct model quality checks; test those models in interconnecting systems.
- Develop automation scripts and tools in-house to effectively conduct reliability studies at-scale, and help build systems and tools to drive business efficiencies in this area.

- Support industry in improving tools, processes, requirements, and understanding of the changing resource mix, grid transformation, and the energy transition broadly.
- Serve as a subject matter expert and provide expert advice/support to transmission service providers, transmission planners, system operators, renewable energy project developers, generator owners and operators, and regulatory entities across North America.
- Conduct transmission planning reliability studies to support transmission planners and utilities in studying future scenarios and grid reliability impacts of a changing resource mix. These could include local reliability studies, regional studies, interregional studies, or even Interconnection-wide studies.
- Leverage first principles, engineering fundamentals, and microcosm systems to help drive best practices around emerging reliability risk areas and other topics of interest.
- Study the changing resource mix and its impacts on bulk power system reliability including areas involving low system strength conditions, grid forming inverter technology, impacts to protection and control systems, frequency response, voltage stability, control interactions, and subsynchronous oscillations.
- Develop modeling and study reports and documentation to successfully accomplish and complete project deliverable requirements.
- Deliver technical presentations to clients and broadly across industry to help *elevate* industry best practices; be and continue to grow as a leader across the electricity industry overall.
- Meet with clients (virtual and in-person as needed) to understand needs; successfully communicate with clients both verbally and in writing.

Qualifications

Candidates should have the following **required** qualifications:

- A Bachelor's degree in electrical engineering from an accredited four-year college or university with a specialization in power engineering.
- Specialization through experience or coursework focused on grid reliability, inverter-based resources, renewable energy interconnection, modeling, power system studies, protection and control systems, etc.
- Understanding of power system dynamics, controls, protection, operations, and planning areas.
- At least 3 years of deep technical experience in renewable energy resource and power system modeling and planning areas.
- Expertise conducting powerflow, dynamics, short-circuit, and EMT simulations, including the modeling and representation of renewable energy resources.
- Experience and expertise conducting large-scale reliability studies on a regional or Interconnection-wide basis.
- Experience with inverter control and protection systems and how to model and represent these devices in power system studies.
- Experience using power system analysis tools, specifically PSS/E, PSLE, PSCAD, and ASPEN.

- Excellent communications skills including both written and verbal communication.
- Strong interpersonal skills and compelling presentation skills that are clear, concise, and applicable to the audience.
- A self-starter, motivated, and driven individual with the ability to work independently and in the face of uncertainty.

Successful candidates should also have the following **desired** qualifications:

- An advanced degree (i.e., Master's or PhD) from an accredited college or university with specialization in power system reliability topics broadly and deeply.
- At least 5-10 years of industry experience conducting reliability studies and modeling of inverter-based resources and a changing grid.
- Experience studying, configuring, and/or tuning inverter protection and control systems or conducting forensic analysis of inverters and grid events.
- Experience studying inverter control systems, control interactions, subsynchronous oscillations, and other related reliability issues.
- Experience with North American Electric Reliability Corporation (NERC) standards, requirements, and regulatory framework.
- Experience working with utility industry partners on challenging problems.
- Knowledge and experience in multiple regions across North America (CAISO, ERCOT, PJM, MISO, etc.) or around the world.
- Proficiency with programming, automation, database management, and other software skills.
- Proficiency and knowledge of a broad range of software and simulation tools beyond those listed above, such as DSATools (PSAT, TSAT, SSAT), EMTP, Python, MATLAB, PSS®CAPE, ETAP, CYME, SEL SynchroWAVE or ACCELERATOR QuickSet, etc.

Physical requirements for this role include:

- Must be able to sit and/or stand for prolonged periods of time at a computer.
- Ability to travel to job sites, both in an office environment and in the field.

Additional Details

- The final title for this role will be determined based on the qualifications of the candidate and on performance through the interview process.
- A background check will be conducted prior to employment.
- All persons hired will be required to verify identity and eligibility to work in the United States and must complete employment eligibility verification documentation upon hire, in compliance with federal law.
- This is a fully remote role with some travel expected; a passport is required for North American and other international travel.
- This position has been classified as exempt.

To apply for this role, please send a resume and cover letter to careers@elevate.energy.

Elevate Energy Consulting is an equal opportunity employer committed to diversity and inclusivity in the workplace. We prohibit discrimination and harassment of any kind based on race, color, sex, religion, sexual orientation, national origin, disability, genetic information, pregnancy, or any other protected characteristic as outlined by federal, state, or local laws. Elevate Energy Consulting makes hiring decisions based solely on qualifications, merit, and business needs at the time.