

Distribution Planning

Smarter Planning for an Evolving Energy Landscape

Planning the Modern Grid

Customer demand continues to rise and load behavior is changing significantly, much of it driven by electrification, increasing load complexity, accelerated distributed energy resources (DER) adoption, and the introduction of new use case strategies. The priority of maintaining utility reliability, safety, resilience, and affordability remains unchanged. In fact, these priorities are now more important than ever.



Why EPE

At EPE, we partner with utilities to proactively plan and optimize the future grid. As the industry continues to transform, we remain committed to supporting utilities with practical, forward-looking solutions that strengthen their systems and position them for long-term success.



Strategic Evaluation and Roadmapping

Our team of experts helps utilities define their priorities and deliverable measurable value by identifying near-term improvements that support and improve long-term objectives.



Load and DER Interconnections

We use large load and DER studies to help utilities design and optimize interconnection processes that are efficient, scalable, and delivered on time and on budget.



Integrated System Planning

Our analyses help utilities address distribution system constraints. We forecast load and DER growth, analyze system performance, and evaluate solutions such as non-wires alternatives and traditional infrastructure upgrades.



Automate System Planning Analysis

We help utilities modernize and automate system planning analysis. Our work spans multi-year time series power flow, non-wires evaluations, interconnection studies, and AI-enabled analytics. Through ENER-i integration or custom scripting, we improve speed, consistency, and decision quality.

Our Focus Areas

Strategy-Driven Roadmapping

- Current-state assessments and gap analysis
- Strategic and implementation roadmaps
- Business cases for planning and investments
- Training curriculum on various topics
- Integrated system planning roadmaps

Integrated Studies

Capacity Planning

- Time series forecast; power flow studies
- Contingency analysis; dynamic analysis
- Load hosting capacity; heat map development
- Large load interconnection studies
 - Data centers
 - Beneficial electrification
 - Electric vehicle (EV) charging
- Load flexible interconnection studies

Distributed Energy Resources (DER) Planning

- DER interconnection studies
- Flexible interconnections
- DER and dynamic hosting capacity
- Scenario planning
- EV penetration studies

Reliability

- Contingency analysis, automation schemes
- Fault, location, isolation and service restoration (FLISR) implementation

Resiliency

- Risk assessment
- Mitigation evaluation and scoping

Protection

- Protection and coordination
- SCADA
- Protective device placement (fuse, recloser, trip saver)

Multi-Objective Planning

- Risk-based planning
- Planning across multiple drivers

Streamlined Processes

- Load and DER technical interconnection requirements
- Large-load interconnection studies; process design
- Streamlined evaluation frameworks for DER
- Optimized workflow interconnections
- Time-series and fast-track study approaches for DERs
- Technical screening and mitigation strategies
- Interconnection studies delivered on time, on budget
- Training and stakeholder support

System Planning Analysis Automation

- Scripting of 8760 time series power flows
- Automation of traditional grid solution evaluation
- Automation of non-wires alternative solutions
- Automation of interconnection and impact studies
- Integration with EPE's ENER-i platform
- Custom scripting and automation of processes
- Data analytics/data science on SCADA, AMI, or other
- AI integration into system planning processes

Your Trusted Energy Partner

EPE supports clients across the energy ecosystem with end-to-end solutions. Our work spans utility engineering, grid integration, regulatory compliance, and advanced analytics—delivered with the expertise needed to navigate the energy landscape. As consultants, engineers, and technologists, we act as an extension of your team, bringing decades of experience and a shared commitment to building a resilient, reliable, flexible, and affordable energy future.

Let's Engineer Success Together

Visit epeconsulting.com/distribution-planning-engineering to learn how EPE can accelerate your next project with confidence.

