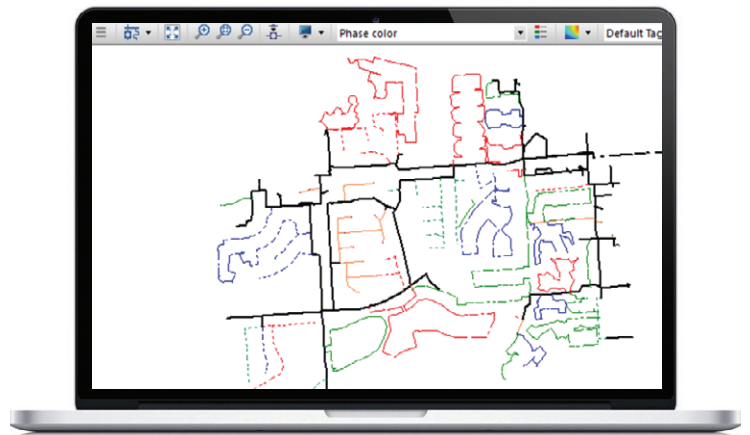


DISTRIBUTION SYSTEM ANALYSIS AND PLANNING

OUR SOLUTIONS

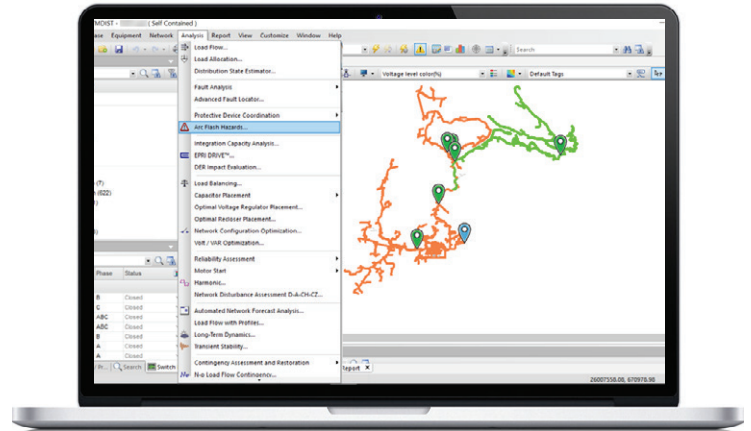
EN Consulting offers a suite of comprehensive distribution system analysis and planning services that analyze, identify, explain, and solve complex technical issues. Our team of industry experts offers decades of direct utility analysis and consulting experience spanning a wide range of services from downtown secondary networks to grid modernization and the emergence of alternative energy resources such as DER, EV, BESS, and microgrids. Whether it is traditional capacity planning in dense load centers, electrification, or alternative approaches using dispersed resources, EN Consulting partners with our clients from solution conception to project completion.



DISTRIBUTION ANALYSIS

Our range of capabilities includes:

- Utility distribution capacity and reliability planning assessments and power system model development using CYME, PSS/E, Synergi, ETAP, SKM, Aspen, EMTP / PSCAD™ or other required modeling/analysis software
- Distributed Energy Resource (DER) interconnection process support and system impact studies:
 - » Renewables including solar (PV), wind turbines, Battery Energy Storage (BESS), fuel cells, and hybrids
 - » Combined Heat and Power (CHP), simple cycle gas turbines, and other thermal generation
 - » Application screening support, system impact studies and system upgrade identification and support
- Distribution capacity and energy forecasting, GIS analytics, and assessments of alternative energy:
 - » DER hosting capability maps
 - » Electric Vehicles (EV)
 - » Electrification (heat pumps, electrical appliances, or other new building load sources)
- Utility-scale microgrid analysis and design for net-zero/carbon-neutral/carbon-free initiatives, off-grid operation, and backup resiliency
- Secondary network grid analysis, planning, and reinforcements for urban metropolitan city load centers
- Grid modernization analysis and settings for smart grid, distribution automation/FLISR/self-healing schemes:
 - » Scheme logic design and operational location optimization
 - » Protective device coordination and settings for automatic switching devices (reclosers, switches, and fuses)
 - » Volt-Var Optimization (VVO) studies defining control parameters



- Protection coordination studies and relay settings of distribution substation bus circuit breaker relays and step-down transformation
- System disturbance, event, or power quality root cause analysis

DISTRIBUTION PLANNING

Our capabilities include:

- 5/10 year capital plans, programs or electric master plans to evaluate improvement program alternatives with project ranking to establish final capital forecast and schedule
- Assess reliability and operational analytics to improve reliability metrics and address 'worst performing' areas of the system
- Evaluate system-wide asset programs focused on aging assets and/or systemic equipment issues
- Voltage conversions, replacements, rebuilds, substation retirements/conversions, and safety programs targeting high-risk operational equipment
- Assess the viability of modern approaches as an alternative to asset replacements or conversions