



Optimizing telecommunications networks



Total communications solutions for the energy industry



Managing a utility's telecommunications infrastructure has always been a challenge. As telecommunications play an increasingly critical role in utility operations, staying ahead of the curve becomes more difficult.

New smart grid and advanced metering initiatives, distribution automation technologies, North American Electric Reliability Corporation's (NERC) more stringent reliability standards, and Federal Communications Commission (FCC) licensing changes are some of the many challenges utilities face in developing and maintaining a robust telecommunications infrastructure. KEMA works with proactive managers throughout the energy industry to develop and implement responses to new challenges and capitalize on opportunities for positive impacts on current utility operations and future growth potential.

Today's decisions shape tomorrow's opportunities

Make the right decisions now to optimize growth and flexibility options. Make the wrong decisions, and options could be limited for decades. KEMA's telecommunications team provides insight, analysis, strategy, and state-of-the-art technology to help utilities make the best investment decisions within the constraints of capital and operations and management budgets.

KEMA combines extensive knowledge of best practices among the world's leading utilities and telecommunication firms with our leadership in planning and operations strategy. We apply our knowledge of the entire utility enterprise from generation and transmission and distribution planning, to SCADA/EMS implementation and automation to enhance our clients' successes. We empower them to address the complex challenges they face, while building and managing their telecommunications infrastructure.



Telecommunications strategies for success

KEMA's telecommunications team can effectively address the many phases of network enhancements. From mobile and fixed network planning, to site acquisition and construction, to implementation, operation, and optimization, KEMA helps clients achieve strategic and tactical goals and reach business objectives. Our expertise spans an array of areas, such as:

- > Industry trend analysis and market forecasting
- > Business and strategic planning
- > Enterprise-wide telecommunications strategy
- > Network planning, implementation management and optimization
- > Performance analysis
- > Vendor proposal evaluation
- > Commercial specifications
- > Security testing and remediation
- > Technical specifications
- > Technology assessment and testing to verify the viability of current technology, connectivity, and protocol performance
- > Contract negotiation and management
- > Systems implementation oversight
- > Network testing, certification and cut-over
- > Litigation and arbitration support

KEMA offers a combination of technical, engineering, and managerial skills to provide clients broad-based, impartial expertise in all aspects of network and substation communication planning, assessment, and procurement processes. With an average of 20+ years of experience, KEMA telecommunications experts are well versed in analyzing and preparing for on-going developments in telecom technologies and trends. We are recognized throughout the industry for our technical expertise and our business acumen, which, coupled with our wealth of experience, creates tangible client success.

About KEMA

Founded in 1927, KEMA is a global provider of business and technical consulting, operational support, measurement and inspection, and testing and certification for the energy and utility industry. With world headquarters in Arnhem, the Netherlands, KEMA employs more than 1,700 professionals globally with offices and representatives in more than 20 countries. KEMA's U.S. subsidiary, KEMA Inc. is headquartered in Burlington, Mass., and serves energy clients throughout the Americas and Caribbean.



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KEMA telecommunications projects

- > Ameren Services, Inc. – Planned and designed a new microwave and synchronous optical network transport for voice and data to support operational and service office locations. Developed technical specifications for vendor procurement, installation, test, and acceptance.
- > District of Columbia Water and Sewer Authority (DCWASA) – Reviewed and evaluated internally developed DCWASA SCADA communication design, using a variety of owned and leased wireline and wireless communications facilities.
- > E. ON U.S. (formerly LG&E) – Updated telecommunications system architecture and infrastructure to optimize current assets, ensure support of core functions, and accommodate new technologies and systems.
- > E. ON U.S. (formerly LG&E) – Designed and procured an enhanced digital ultra-high frequency land mobile radio system, including detailed design, FCC application package, technical and functional specifications, and project management and implementation support.
- > Hydro Quebec – Identified and defined security and performance issues related to the migration of legacy networks towards networks based on Internet protocol/multiprotocol label switching.
- > Imperial Irrigation District – Reviewed current telecommunications infrastructure, requirements, and historical communications usage; identified “gaps” in accommodating current and future requirements to support the establishment of a new primary and backup EMS.
- > ISO – Assessed load shed communications infrastructures and procedures to prevent or isolate a cascading power outage in the region. Developed short- and long-term remedial recommendations.
- > Long Island Power Authority – Evaluated and supported proposal for “Broadband Over Power Lines and Wireless Communications Demonstration Project.”
- > Oklahoma Gas and Electric – Tested security of smart grid communications and customer interfaces. Characterized physical and cyber security risks and described potential remediation.
- > Southern California Edison – Analyzed, validated, and reviewed technology options for a satellite communications system.
- > Southern Nevada Water Authority and the Las Vegas Valley Water District – Developed a strategic plan to optimize utilization of the telecommunications network infrastructure.
- > Technology Developer – Oriented firm to utility communication requirements in support of smart grid. Assessed product development roadmap and recommended commercial partners and strategy.
- > Washington Gas – Reviewed cyber security to determine the extent NERC and other related security standards should be applied to gas infrastructure, either as anticipated requirements in the future or an application of prudent business cyber security practice.