

GEOGRAPHIC INFORMATION SYSTEM (GIS) BEST PRACTICES

A GUIDE ON GIS FOR ELECTRIFICATION

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FACT SHEET FOR REGULATORS

The GIS Best Practices report can help utilities and regulators to identify value propositions for GIS applications, recognize deployment challenges and trade-offs, learn from best practices, and develop a roadmap for GIS investments.

Why is GIS so vital?

GIS is integral to many utility business functions. GIS is a database-driven digital map of utility assets. The mapping capabilities and asset information data are used by many different utility departments to perform basic functions, like maintenance and asset tracking, or to provide locational or connectivity information. In addition, the GIS database is used by many other software systems across the utility business, including in operations (e.g., Advanced Distribution Management System, etc.), planning (powerflow studies), and work order management.

What are the benefits of GIS?

The specific benefits of investing in GIS depend on the starting point of the utility and the level of investment. Regardless, investing in a modern, enterprise-wide GIS implementation can provide the following:

Efficiency: GIS will be used by many different teams as a quick and reliable portal to the most up-to-date, authoritative information.

This fact sheet was developed from the report Geographic Information System (GIS) Best Practices: A Guide on GIS for Electrification, which was developed as part of a CHARGED working group and released in January 2026.

Functionality: Many advanced software capabilities, such as DERMS and ADMS, cannot realistically be implemented without a GIS backbone to provide detailed, reliable, and up-to-date information about assets.

Safety and reliability: GIS supports a host of relevant functions for safety and reliability including compliance, inspections, maintenance, vegetation management, and management of the system during emergencies such as extreme weather events.

What specific lessons or recommendations should regulators consider?

The following recommendations are primarily intended for regulators of utilities that do not yet have a GIS, but can also apply for utilities that continue to invest in their GIS:

- ▶ Examine utility budget proposals for clear project phases and ensure costs include any required IT infrastructure upgrades.
- ▶ Determine the utility plan for mapping operations and asset management before, after, and during the implementation process. Ensure there is a process to address the backlog of mapping work that will arise during any upgrades.
- ▶ Ensure sufficient resources for training, quality control, and process improvement have been committed.
- ▶ Have utilities provide clear plans for GIS ownership and organizational structure, along with plans for evolving GIS capabilities over time.
- ▶ Utilities should be prompted to clearly define expected benefits of GIS investments and ensure the necessary actions are taken to realize these benefits.

Investing in GIS can be an expensive and time consuming process, but the benefits for the utility and customers can be significant, and the counterfactual — not investing in GIS — could ultimately be more costly. Commissions should therefore support the creation of suitable benefit-cost analyses to assess utility GIS investments and include the holistic benefits of GIS in their considerations.

For much more detailed information on minimum GIS system capabilities and ways to make sure they are delivering the full potential benefits they are capable of, read our [full guide](#).



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