

Career Pathway Spotlight

Discover a Career as a Geographic Information Systems (GIS) Technician

Discover your career in energy!

Geographic Information Systems Technicians are the cartographers or mapmakers of the modern energy industry — turning location data into insights that guide where infrastructure is built, permitted, and operated.

Energy Infrastructure Siting & Mapping

Before a single solar panel is installed or a pipeline is laid, GIS Technicians map the land — analyzing terrain, land ownership, environmental constraints, and proximity to existing infrastructure to identify where projects can be built and how to route them.

Environmental & Land Use Analysis

Energy projects must navigate complex environmental rules and land use requirements. GIS Technicians support permitting and regulatory review by analyzing habitats, waterways, protected lands, and community impacts — helping projects move forward responsibly.

Grid Operations & Emergency Response

When storms hit or outages occur, GIS Technicians help utilities understand what's affected and where to send crews. Their maps and spatial data support outage management, infrastructure inspection, and long-term grid hardening and resilience planning.

CAREER PATH

Start with:

- » High school diploma or GED
- » Interest in geography, maps, data, or environmental science

Get Educated:

- » Associate's or bachelor's degree in GIS, geography, or a related field
- » Esri technical certification programs (ArcGIS Desktop or Pro)
- » Community college GIS programs or online geospatial training pathways

Specialize With:

Knowledge in:

- » Transportation & Infrastructure
- » Environmental & Natural Resources
- » Emergency Management
- » Precision Agriculture
- » Energy & Renewables Development

OCCUPATIONAL SKILLS

- » Collect, organize, and maintain geographic data from field surveys, satellite imagery, and public sources
- » Create maps and visual displays that communicate complex information clearly
- » Analyze geographic data to support planning, permitting, and project decision-making
- » Work with field crews to gather location data and verify information on the ground
- » Maintain and update geographic databases to ensure accuracy and completeness
- » Collaborate with engineers, planners, and environmental teams across project stages
- » Prepare reports, maps, and data deliverables for internal teams and external stakeholders

BENEFITS

These energy industry careers offer:

- » Competitive wages with growing demand across energy and infrastructure sectors
- » Employer-sponsored health, dental, and vision insurance
- » 401(k) or pension retirement plans
- » Support for technical certifications and continuing education
- » Variety of work environments — office, field, and remote
- » Career pathways into project management, environmental consulting, or data science

What Might You Do As A Geographic Information Systems Technician?

ENTRY LEVEL

1-4 years

What you will do:

- » Collect, process, and organize geographic data from field surveys, satellite imagery, and public databases
- » Produce maps and visual displays to support project planning, permitting, and reporting
- » Maintain and update geographic databases, ensuring accuracy and consistency
- » Assist with field data collection using location-tracking equipment and mobile tools
- » Support land rights research and environmental review for energy project siting
- » Respond to data requests from engineers, project managers, and regulatory teams

MID- CAREER

5-8 years

- » Lead geographic analysis and mapping efforts on energy infrastructure and development projects
- » Build and maintain geographic databases and data management workflows
- » Perform spatial analysis to support site selection, environmental review, and route planning
- » Coordinate with engineering, environmental, and regulatory teams to meet project data needs
- » Develop data standards, quality control processes, and documentation for GIS operations
- » Train and support junior technicians in data collection, processing, and mapping tasks

EXPERIENCED

8+ years

- » Oversee geographic information programs and teams supporting large-scale energy projects
- » Define data standards, system architecture, and technology investments for mapping operations
- » Serve as technical lead on complex siting, routing, and environmental analysis projects
- » Partner with leadership, regulators, and community stakeholders on data-driven decisions
- » Evaluate and implement emerging geospatial technologies to improve operations and analysis
- » Mentor staff and build organizational capacity for spatial data use across the enterprise

What knowledge, skills and abilities will you need to succeed?

- » Basic proficiency with mapping software such as ArcGIS or similar platforms
- » Understanding of geographic concepts including coordinate systems and data formats
- » Attention to detail for maintaining accurate and consistent geographic records
- » Ability to follow technical procedures and produce reliable, repeatable results
- » Strong organizational skills for managing large datasets across multiple projects
- » Come to work on time and prepared

- » Advanced proficiency with mapping platforms, spatial analysis tools, and database management
- » Strong understanding of land use, permitting, and environmental review in the energy sector
- » Ability to manage multiple projects and deliver accurate results on deadline
- » Experience combining geographic data with engineering and project management systems
- » Clear communication skills for presenting spatial findings to non-technical audiences
- » Familiarity with aerial imagery, remote sensing, and field data collection technologies

- » Deep expertise in geospatial analysis, data management, and mapping technology platforms
- » Leadership and project management skills for directing teams and complex workflows
- » Comprehensive understanding of energy project development, permitting, and land rights
- » Ability to align geographic information strategy with organizational and regulatory priorities
- » Strong communication skills for engaging executives, regulators, and community stakeholders
- » Experience with advanced tools including remote sensing, three-dimensional modeling, and real-time data integration

GET PAID!

Entry Level:

- » \$43,600 / year*

As You Gain Seniority:

- » \$70,700 / year*

Later in Your Career:

- » \$124,800 / year*

*Source: Zip Recruiter (May 2026). These figures are based on aggregate job posting data because the role is not included in the United States Energy & Employment Report and has no precise match in BLS OEWS. Compensation figures should be used as a guide; actual compensation may vary depending on education, geography, experience, and many other factors.



ENERGY INDUSTRY CAREERS OFFER:

- » Excellent salaries
- » Opportunities for advancement
- » Job growth & stability
- » Professional development and training
- » Great benefits

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