

Gujarat Gas Limited Manages Gas Assets Optimally with ArcGIS

Client

Gujarat Gas Limited

Industry

Utilities

Organization Profile

Gujarat Gas Limited (formerly known as GSPC Distribution Networks Limited), is India's largest City Gas Distribution player with its presence spread across 44 Districts in the State of Gujarat, Punjab, Haryana, Madhya Pradesh, Rajasthan and the Union Territory of Dadra & Nagar Haveli making GGL a PAN India Company.

The company has more than 37,000 (Thirty-Seven Thousand) km of gas pipeline network. It has more than 800 CNG stations and distributes approximately 9 mmcmd of natural gas to more than 20.25 lakh households, approximately 3.5 lakh CNG vehicles (serving per day), and to over 4,300 (Four Thousand and Three Hundred) industrial customers.

Website

www.gujaratgas.com

Project

GIS system for City Gas Distribution Networks

Highlights

- Esri India's GIS solution allows GGL to map and manage gas assets efficiently.
- The GIS solution has led to significant cost savings through optimized route planning, efficient project estimating, and streamlined maintenance activities.
- Manpower utilization has improved as a result of enhanced crew monitoring and efficient emergency response.
- Productivity gains are notable in terms of reduced hours spent on planning and increased operational efficiency.
- The GIS system has substantially improved data accuracy, contributing to better decision-making across various operational domains.

Project Summary

Gujarat Gas Limited (GGL), as India's largest City Gas distribution company, has undertaken a comprehensive project to enhance its operational efficiency through the implementation of a Geographic Information System (GIS) on the Esri platform. This project involves mapping all gas assets and associated infrastructure using ArcGIS and ArcFM. The GIS system is instrumental in various aspects of GGL's operations, including commercial activities, engineering and design, construction and projects, maintenance, and emergency response.

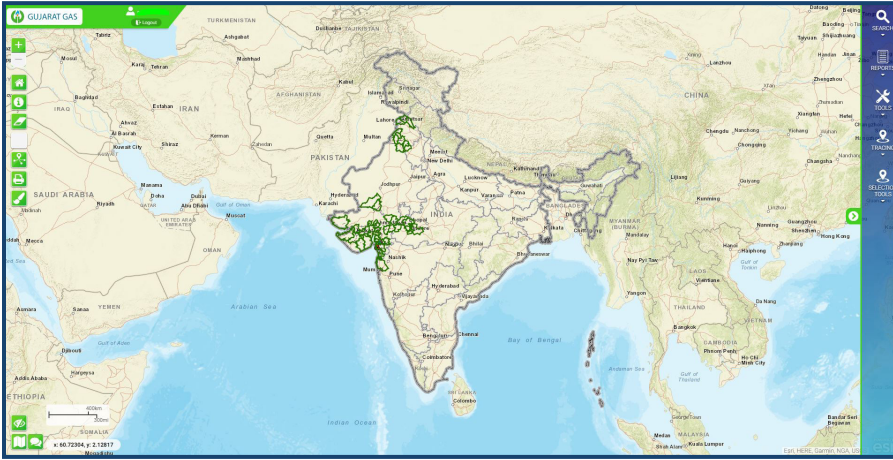
Challenges

Before the implementation of the GIS system, GGL faced challenges in terms of data accuracy, operational efficiency, and response time. The lack of a centralized and spatially enabled system made it difficult to conduct feasibility studies, and desktop studies for alternative projects. Route planning, project estimating, network simulation, and maintenance planning were cumbersome processes. The absence of a robust GIS system also hindered quick response to emergencies, efficient complaint handling, and crew monitoring during critical situations.

Solution

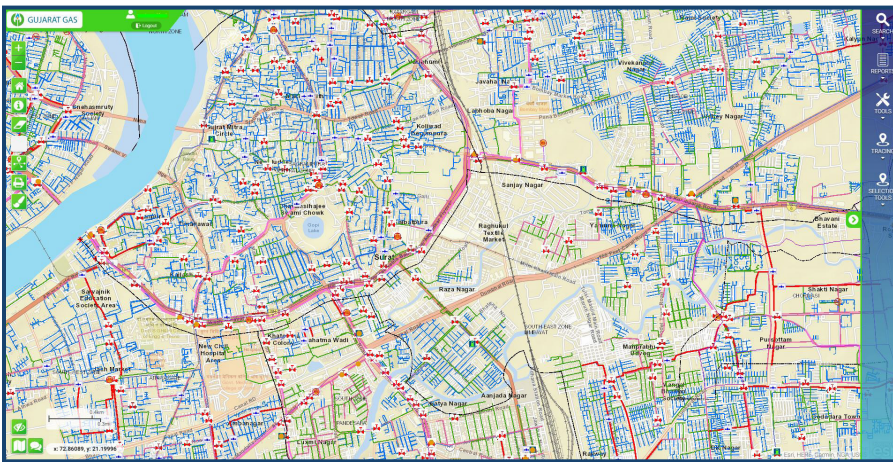
Esri India provided a comprehensive GIS solution. This system allows GGL to map and manage gas assets efficiently. The solution enables commercial activities such as feasibility studies, and desktop studies for alternates. In terms of engineering, planning, and design, the GIS system facilitates route planning, project estimating, network simulation, design clearances, and reinforcement and replacement planning. For construction and projects, it aids in construction planning, network identification, route analysis, and risk assessment. Maintenance activities benefit from the system through maintenance planning, patrolling, valve chamber maintenance, shutdown planning, and providing data for root cause analysis. In emergency response, the GIS system ensures quick response, isolation and squeeze-off analysis, efficient complaint handling, and crew monitoring.





“ Esri India’s GIS solution has revolutionized our operations, providing us with a holistic platform to manage our gas distribution network. The quantifiable benefits in terms of cost savings, manpower use, productivity, and data accuracy are remarkable. This solution has not only resolved our operational challenges but has also positioned us at the forefront of technology in the gas distribution industry. It has empowered us to respond swiftly to customer needs, emergencies, and market dynamics, ensuring the seamless delivery of services to our consumers. ”

-Subrata Banerjee, Manager (Technical Services), GGL & Nautam Akbari, Sr. Engineer (Technical Services), GGL



Benefits

The implementation of Esri India’s GIS solution has yielded several quantifiable benefits for GGL. These include significant cost savings through optimized route planning, efficient project estimating, and streamlined maintenance activities. Manpower utilization has improved as a result of enhanced crew monitoring and efficient emergency response. Productivity gains are notable in terms of reduced hours spent on planning and increased operational efficiency. The GIS system has substantially improved data accuracy, contributing to better decision-making across various operational domains.

The GIS system plays a crucial role in maintenance activities by facilitating maintenance planning, patrolling, valve chamber maintenance, and shutdown planning. It provides real-time data for root cause analysis, enabling proactive maintenance measures and minimizing downtime. In emergency response scenarios, the GIS solution enables quick decision-making by providing tools for isolation and squeeze-off analysis. It also supports efficient complaint handling and crew monitoring during critical situations, ensuring a rapid and effective response to emergencies.

The GIS system allows for continuous monitoring of the gas distribution network. It provides real-time data on asset status, performance, and potential issues. This data is analyzed to identify trends, assess network health, and proactively address any emerging challenges.

