

Role of Geographic Information System (GIS) in E&P Business

Masood Akhtar, Ahmed Irfan, Abdul Hakeem, and Nicolai Egger

OMV (Pakistan) Exploration GmbH, Islamabad-Pakistan

GIS tools have been effectively used in Oil and gas industry for many years. With the advancement in technology, GIS can be used to manage the complete E&P life cycle from exploration and production to abandonment. Major oil companies in the world use it to manage their location-based information from E&P Leases, well sites, and pipelines to environmental sites, facilities, and retail outlets. OMV Pakistan has established an ESRI based GIS system to store, manage and analyze Geo spatial and related metadata. The GIS database stores information related to acreage, leases, culture, satellite imagery, and pipeline and land rights. The database is available to other G&G applications via specified workflow and customized connectors and also acts as a repository to store G&G data coming from other applications. GIS desktop tools (ArcInfo and ArcView) are used to analyze the spatial and associated data. Major benefits of GIS system are:

- E&P data management
- Geospatial data analysis
- Identification of prospective areas by integrating all available data
- Analysis and understanding of complex tectonics
- Estimation of potential volumes
- Workflow for “non GIS but G&G” specialists

The paper provides a landscape of the current GIS infrastructure in OMV Pakistan and its usage in day to day operations. A detailed GIS workflow has been under taken to analyze and understand the complex tectonics and structure of a fold belt, which has resulted in developing new ideas and concepts.