



OIL AND GAS

Fugro NV

Veurse Achterweg 10
2264 SG, Leidschendam
The Netherlands

More information available at WWW.FUGRO.COM

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UNDERSTANDING
your operational objectives

TACKLING
your complex challenges

DELIVERING
your global success stories

PIPELINES

Planning, constructing, installing and maintaining onshore and offshore pipelines involves several specialist disciplines, which need coordination and alignment at every stage of a project. Fugro acquires and processes the necessary data to guide each step. We handle the logistical, political and physically demanding obstacles that present themselves. We assess and interpret all the data and turn it into meaningful analyses for designers, construction companies and maintenance specialists.



Our Expertise

Fugro is an integrated source of engineering advice, advanced data acquisition and multidisciplinary expertise, ideally suited to supporting the pipeline industry. Our capability to analyze satellite imagery, and perform aerial, land and marine surveys using the latest measurement and mapping technology, assists initial site and route selection. Our geological assessments and soil investigations confirm the suitability of the preferred route, facilitate engineering design and aid the selection of construction techniques, while our offshore services support the installation, burial and monitoring of pipelines.

The Benefits of Working with Fugro

From the tropics to the Arctic, both onshore and offshore, Fugro delivers a comprehensive pipeline service portfolio comprising multiple integrated disciplines, coordinated and managed by a single project team. From concept definition and routing, through FEED and construction, to operations and maintenance, Fugro's quality data, geoconsultancy and management provide support across the entire lifespan of a project.



Concept Definition

Fugro provides initial desktop studies, feasibility work, initial permitting and comprehensive pipeline route assessments for onshore and offshore pipelines.

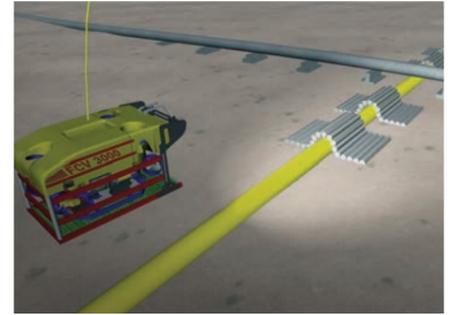
- Permitting
- Environmental surveys
- Geographical Information Systems (GIS) and data management
- Photogrammetry and remote sensing
- Airborne LiDAR mapping topography and bathymetry
- Pipeline planning and routing
- Geohazard surveys and risks assessments to assist pipeline routing
- Geophysical data acquisition and processing
- Digital modeling, data interpretation and integration



Design and Construction

Fugro provides advanced data gathering, processing and interpretation; risk assessments and design expertise that, together, help in the development of construction solutions and techniques.

- Survey permit requirements and drawings
- Deepwater Autonomous Underwater Vehicle (AUV) surveys
- Geotechnical data acquisition
- In situ pipe-soil interaction evaluation using SMARTPIPE®
- Pipeline alignment design surveys
- Pipe-soil interaction and trenching assessments
- State-of-the-art finite element software for pipeline analyses
- Construction site survey and measurement
- Installation support, precise signal positioning
- Metocean services
- ROV pipe-tracking and data processing
- Environmental inspection and monitoring



Operation and Maintenance

Fugro provides monitoring and pipeline inspection surveys designed to ensure the stability, integrity and safe operation of infrastructure. We also maintain an up-to-date GIS asset database to facilitate project communications.

- Regulatory services at the design phase
- Pipeline inspection surveys
- Geohazard monitoring using remote sensing and in situ techniques
- Depth of cover analysis using LiDAR and Geopig
- Ground motion trends
- Data management and visualization

