



UNIVERSITY OF BALAMAND

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Romgaz Site Visit Report

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CHAPTER 1: INTRODUCTION

Romgaz is the largest natural gas producer and the main supplier in Romania. This company is distinguished by its great experience in the gas exploration field and production. Romgaz works to discover new gas reserves, produces methane, stores natural gas in the underground deposits, and performs interventions, workover and technological transport. This company is listed on Bucharest and London Stock Exchange.

Romgaz mission:

Its mission is to produce and supply natural gas in order to ensure the energy independence in Romania in agreement with the governmental energy policy.

Romgaz objectives:

Its objectives are:

- ✓ Enhancing the gas resources by discovering new resources and improving the ones already explored.
- ✓ Increasing partnership on the energy supply markets.
- ✓ Reconsidering the importance of safety, continuity and flexibility of the natural gas supply.
- ✓ Improving the company's performance.
- ✓ Ensuring new growth and diverse opportunities.

Romgaz opportunities:

- Liberalization of gas prices and market deregulation
- Development of access conditions on the regional energy market
- Increase of gas demand in Romania against the economic recovery
- Improvement of programs focused on employee training and retention

CHAPTER 2: SITE VISIT TO A NATURAL GAS COMPRESSION

The storage of natural gas of Romgaz is done by Depogaz that we had the opportunity to visit and learn more about the process of storage in a natural gas compression.

Depogaz is a modern company having a vast experience in underground storage of natural gas with 90.31% of the total active storage capacity of Romania.



Figure 1: Depogaz natural gas compression

Underground storage of natural gas done by Depogaz presents a major role to secure the supply of natural gas by covering seasonal consumption peaks. The storage capacity of Depogaz is estimated to 1310 million m³/day. During winter, there is a high consumption of natural gas due to different environmental parameters contrary to the case during summer.

The extraction of the natural gas estimated to 14.5 million m³/day is done throughout the year but is mainly done in winter following the proper steps: heating, separation, dehydration done in a gas dehydration to clean the gas , fiscal measurement ending up to the national transport system.

Whereas the injection mainly done in summer includes: a separation in horizontal three-phases separator to separate oil, gas and water followed by a compression in two phases: the first stage includes increasing the pressure from 20 to 50 bars then to 125 bars in the second phase. In the compression station, the volume is minimized to gain additional space for better storage since

each storage well has some capacity and depth that should be taken into consideration during injection whereas the pressure maximizes according to the ideal gas law $PV = nRT$. After compression, an extra separation for oil vapour is done in a two-phases separator to separate the gas from left over oil.



Figure 2: Two-phase separation

The gas is then transported to a total line to measure the total flow and other important parameters such as pressure and temperature using ultrasonic devices before being delivered to a group. In the group, the gas is transported from a big pipe to ten lines each going to be injected in

a well through a Christmas tree composed of an eruption head and tubing head with a fire protection system for safety.



Figure 3: Lines in the group



Figure 4: Christmas Tree for gas injection

CHAPTER 3: CONCLUSION

Our site visit to the natural gas compression station done by Depogas was very fruitful. Through this visit I have acquired an interesting knowledge about the different steps followed during injection and extraction. This interesting visit will be very beneficial for my future career and for serving my country Lebanon in the natural gas sector.

REFERENCES

www.romgaz.ro

www.depogaz.ro