MERCURY

Gas Supply Chain

21 – 25 November 2027
Istanbul (Turkey)



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Introduction

Gas supply chain management is a critical framework governing how natural gas moves from extraction sites to final consumers through a complex network of processing plants, transportation systems, storage facilities, and distribution channels. This Gas Supply Chain course provides a theoretical foundation to understand how each stage of the gas value chain contributes to operational continuity and energy security. It explores the integration between upstream production, midstream logistics, and downstream delivery within modern energy systems. Participants will gain insight into LNG operations, pipeline networks, storage balancing, and demand management mechanisms. The program highlights how risk, regulation, and sustainability influence supply chain decisions in global gas markets. It builds the analytical capability to understand and evaluate gas logistics systems in a professional and strategic context.

Targeted Groups

This Gas Supply Chain training targets professionals seeking knowledge and skills:

- Energy sector employees working in gas operations.
- LNG facility operators and coordinators.
- Oil and gas supply chain analysts.
- Pipeline operations and maintenance staff.
- Utility company planning and distribution teams.
- Logistics and transportation professionals in energy markets.
- Engineering graduates entering the gas industry.
- Commercial and contract management personnel in the energy sector.

Course Objectives

Participants will achieve the following objectives by completing the Gas Supply Chain course:

- Understand the structure of the gas supply chain and its key components.
- Explain the relationship between upstream production and downstream delivery systems.
- Identify the roles of processing plants in gas conditioning and quality control.
- Describe pipeline transportation systems and LNG logistics operations.
- Analyze storage systems and their role in balancing supply and demand.
- Evaluate the importance of scheduling and capacity management in gas flow.
- Understand fundamentals of gas market dynamics and demand variability.
- Interpret risk factors affecting the continuity and reliability of gas supply networks.

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Targeted Competencies

Participants will gain the following competencies during the Gas Supply Chain program:

- Gas flow analysis across integrated supply networks.
- Understanding of LNG operational processes and logistics cycles.
- Ability to interpret pipeline capacity and transport constraints.
- Competence in gas storage utilization and balancing strategies.
- Awareness of supply chain risk identification and mitigation logic.
- Understanding of demand forecasting and distribution planning.
- Ability to assess operational coordination across energy systems.
- Knowledge of compliance, safety, and performance monitoring frameworks.

Studying Scenarios

In this Gas Supply Chain training, participants develop skills through the following scenarios:

- A sudden disruption in pipeline transport affects delivery schedules.
- Seasonal demand increases create an imbalance in storage pressure.
- LNG shipment delays impact downstream distribution planning.
- Variations in gas quality require adjustments to processing operations.

Course Content

Unit 1: Foundations of Gas Supply Chain

- Meaning of gas supply chain and gas value chain.
- Journey from production fields to final consumption points.
- Structure of upstream, midstream, and downstream operations.
- Role of infrastructure in ensuring continuous gas delivery.
- Connection between production systems and market demand.
- Importance of integration in gas logistics networks.
- Overview of natural gas supply chain and LNG supply chain systems.
- Fundamentals of energy flow and system reliability in gas markets.

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Unit 2: Gas Production, Processing, and Quality Control

- Characteristics of raw natural gas after extraction.
- Role of gas processing in removing impurities and contaminants.
- Importance of dehydration, sweetening, and conditioning processes.
- Quality standards required for pipeline and LNG compatibility.
- Influence of gas composition on transport efficiency.
- Relationship between processing operations and system safety.
- Monitoring systems are used for maintaining gas quality consistency.
- Impact of processing performance on downstream supply reliability.

Unit 3: Gas Transportation, Pipeline Networks, and LNG Movement

- Function of pipeline networks in large-scale gas transportation.
- Role of compression stations in maintaining gas flow pressure.
- Importance of transmission corridors in regional energy supply.
- Learn how to use scheduling systems to allocate pipeline capacity.
- Differences between pipeline transport and LNG shipping logistics.
- Overview of LNG liquefaction, transport, and regasification processes.
- Coordination between transport operators and market demand cycles.
- Impact of infrastructure constraints on gas supply continuity.

Unit 4: Storage, Distribution, and Demand Balancing

- Purpose of underground and surface gas storage systems.
- Role of storage in managing seasonal demand fluctuations.
- Function of distribution networks in final consumer delivery.
- Importance of load balancing in maintaining system stability.
- Relationship between forecasting and inventory optimization.
- Use of storage facilities as operational buffers during shortages.
- Coordination between distribution operators and supply planners.
- Influence of demand variability on gas network performance.

Unit 5: Risk, Compliance, Sustainability, and Supply Chain Performance

- Identification of operational and strategic risks in the gas supply chain.
- Impact of geopolitical instability on global gas markets.
- Importance of regulatory compliance in energy operations.
- Role of safety standards in gas transportation and storage.
- Influence of market volatility on pricing and supply planning.
- Sustainability practices in modern LNG and gas systems.
- Monitoring performance indicators across supply chain stages.
- Strategies for improving resilience and operational efficiency.

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Final Insights & Key Takeaways

Gas supply chain systems require integrated coordination across production, processing, transportation, storage, and distribution to ensure continuous and reliable energy delivery. Understanding these interconnected stages enables better decision-making, improved operational efficiency, and stronger resilience in dynamic global energy markets.