

LNG Fuel for the Future by Mr. Malcolm Johnson 21-23 November 2016 | Brunei



Overview

The course is designed to provide an overview of:

1. The LNG industry as a whole and focuses on the supply chain including: Upstream gas supply; Liquefaction; shipping and regasification;
2. LNG Commercial arrangements across the value chain including gas supply arrangements; Joint Venture Agreements; LNG Supply Purchase Agreements; shipping and LNG receiving terminal arrangements;
3. LNG Supply/Demand balance-Supply sources and

the growth of the LNG industry. Individual markets for LNG in the three main consuming regions Americas (Atlantic Basin), Europe and Asia including regional pricing and trading.

Objective

The course provides an understanding of the scope and size of the LNG industry, the value chain elements, the basic technologies involved, supply/demand and the commercial considerations within the industry. It also shows how the LNG industry links to the natural gas industries.

Who Should Attend?

The course is designed for participants with little or no previous knowledge of LNG, other than the web based introduction.

Course Summary

Part 1 LNG Value Chain

1.1 An introduction to LNG

- What is natural gas/LNG?
- Terminology
- LNG Properties

1.2 LNG Value Chain

- Elements (Upstream, Liquefaction, shipping regasification)
- Indicative costs (cost split)

Commercial Structures (examples from existing supply projects)

Project Development/execution

- Stages (FEED/FID)
- Timescales
- Implications for the market (supply/demand, price developments)

Learning points: Understanding the integrated nature of the industry and its constraints. Implications of the high costs of development. Alternative commercial structures in the industry and the long term nature of developing new LNG projects and its implications for competitiveness of LNG

1.3 LNG Technology

Basic principles (refrigeration)
LNG liquefaction process (gas treatment)
Gas Quality (market implications)
Technologies (Cascade, PMR, DMR)
Project Costs (inc recent developments in costs)
Developments

- Capacity developments (train capacity)
- Floating LNG

Learning points: Understanding the liquefaction process and the requirements for gas treatment. An outline of the alternative technologies available. The importance of economies of scale and the impact of rising costs on the decision making process. An outline of floating LNG and the commercial implications of monetising stranded gas.

1.4 LNG Shipping

Cost comparison vs pipeline
Shipping costs
Requirements (delivery capacity/ship size)
Shipping capacity
Shipping technology (membrane vs Moss)
Boil off (implications)
Scheduling (ADP)
Shipping market (ship availability)

Learning points: Provide an understanding of how shipping fits in to the overall LNG value chain and its competitiveness versus pipeline. Indicate the requirements for ships and the various technologies and their relative importance. Provide an understanding of the constraints due to the specialised nature of the ships and the commercial implications of boil-off and scheduling.

1.5 LNG Regasification

Overview of terminals
Terminal capacity
Terminal operations/development issues

- Technology
- Terminal/Jetty/Berthing
- Measurement and testing
- Storage
- Send Out
- HSE

Regional Summaries

Learning points: The focus will be on how a regasification terminal operates including technical and commercial issues. In addition regional summaries will be provided to give perspective on the capacity and offtake and regional comparisons of the availability.

Part 2 LNG Commercial Arrangements

2.1 LNG Commercial

Contract chain
Contractual developments (LoI, HoA (Key Terms), SPA)
Gas Supply Agreements
Contractual arrangements and timing (EPC contracts and requirements of integration)
LNG SPA Contracts (including Master Sales Agreement MSA for short term Agreements)
LNG Pricing (Regional pricing basis, US, Europe, Asia)
Shipping arrangements (FOB/CIF/DES)
Import terminal arrangements
LNG financing

Learning points: Provide a comprehensive understanding of all of the contractual arrangements required to develop an LNG project. Details of LNG SPA clauses and their implications. This includes details of the LNG pricing principles in the various regions and how these are being integrated with local/regional pricing arrangements for natural gas.

Part 3 LNG Supply/Demand

3.1 LNG Supplies

Supply sources
Reserve requirements
Overview (Existing supplies)
Asia (Australia, Malaysia, Brunei, Indonesia, Sakhalin)
Middle East (Qatar, Abu Dhabi, Oman, Yemen)
Atlantic Basin (Nigeria, Algeria, Libya, Equatorial Guinea)
Prospective supplies (summary)

Learning points: Understanding of LNG supplies with details of the individual projects in the Asia, Middle East and Atlantic Basin regions. An overview of the potential new supplies coming on stream and the challenges of developing new projects in potentially oversupplied markets. The supplies are common to all markets. The individual markets and specific details will be covered in Day 2 in the appropriate regional markets.

3.2 Natural Gas/LNG Markets

Overview of Natural gas global consumption
Market Sectors (Residential, Commercial, Industry, Power Generation)
Competing fuels (inc pipeline gas)
Overview of Regional markets and growth potential

Learning points: Understanding of the natural gas uses and competing fuels and market requirements

3.3 Europe Market Overview

Overview of European natural gas market developments
European Gas Production
End user markets
Import dependency
Role of LNG cf pipeline gas (growth of LNG)
European pipeline network and potential new developments
Future developments
LNG Drivers (lack of indigenous gas, security of supply etc)
Overview of European terminals
EU Policies

3.4 Americas Market Overview

Overview of natural gas market developments in North and south America
Gas Production
End user markets
Import dependency
Role of LNG cf pipeline gas)
Pipeline networks and potential new developments
Changes taking place in the US market from import dependence to exports
LNG Drivers

Learning points: Provide an understanding of the European natural gas business as a backdrop for the LNG potential in North and South America. Comparison of the pricing principles of natural gas in individual markets with the long term pricing basis of LNG. Future trends and the growing relevance of LNG.

3.5 Asia Market Overview

Overview of Asian natural gas market developments
Comparison with US/European markets
End user markets
Import dependency
Role of LNG cf pipeline gas (growth of LNG)
Pipeline network and potential new developments
Future developments
LNG Drivers (lack of indigenous gas, security of supply etc)
Overview of Asian terminals
Map of terminals to indicate range and scope

Learning points: Provide an understanding of the Asia Pacific natural gas business as a backdrop for the LNG potential. Key messages are the lack of indigenous gas; limited role of pipeline gas imports. Comparison of the mature markets with the newly emerging markets. Understanding the pricing principles of natural gas in individual markets with the long term pricing basis of LNG. Future trends and the growing relevance of LNG.

3.6 LNG Trading

Global trade flows
Historical trade flows
Current trade 2008 Long term forecast
Evolution of trade (LT ToP contracts to spot/short term markets)

Diversions/swaps/arbitrage

Learning points: Understanding the nature and extent of trade flows and how they are changing. Reviewing the nature of long-term Agreements with little flexibility to more global trade. Provide an appreciation of LNG trade growth flows as more projects come on-stream.

About the trainer



Malcolm Johnson has more than 30 years of experience in all aspects of the LNG/Natural Gas value chain. He has project development experience from identification stage through final investment decision based on a range of commercial and marketing roles in the Sakhalin Energy project. He has done Value Assurance for LNG projects as part of the development process to ensure the integration of activities across the value chain.

He is an excellent communicator with good presentation skills. Malcolm develops courses at all levels including technical, commercial and marketing requirement of the LNG value chain. He handled several roles in different countries for Shell. He graduated BSc Hounours in Materials Technology, University of Surrey and Masters Degree in Materials Technology also from the same university.

Investment Fee

SG\$ 2,985.00 per person

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- Full payment for the course should be made 2 weeks prior to event date
- Cancellation 3 weeks prior to event date or no shows are liable to pay the full course with no refund, however you may substitute delegates at any time
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