

## Liquefied Natural Gas Bunkering

**2 days**  
**Overview**

**GER/LNGB**

### LEVEL

Foundation

### PURPOSE

This training provides an overview of the economic and contractual aspects of the LNG (Liquefied Natural Gas) bunkering.

### LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

- identify the main LNG markets and their evolution,
- understand the evolutions of the LNG prices,
- identify the stakeholders involved in the LNG bunkering activity,
- evaluate the economics and the technical aspects of the LNG bunkering,
- analyze the key-drivers of the LNG bunkering development.

### WAYS AND MEANS

Quizzes.  
Videos.

### LEARNING ASSESSMENT

Participants will be evaluated during the training through quizzes and exercises.

### PREREQUISITES

No prerequisites for this course.

## Agenda

### LNG SUPPLY & DEMAND

**0.5 d**

Evolution of natural gas demand and supply.  
Importance of the LNG in the international gas flows.  
Evolution of the LNG markets:  
Atlantic LNG market (North & South America, Europe).  
Asian-Pacific LNG markets (Japan, South Korea, China, India, Australia...).  
Emerging LNG markets (Africa & Middle East).  
New outlets for LNG (retail LNG).

### REGULATION ON LNG AS A FUEL

**0.25 d**

Evolution of environmental regulations.  
Evolution of specifications for bunker fuels: IMO (International Maritime Organization) regulation, ECA (Emission Control Areas)...  
European regulation.  
Technical solutions (scrubber, diesel, LNG).

## TECHNICAL ASPECTS OF LNG BUNKERING

0.75 d

LNG: properties and specifications.

Design of the different parts of the LNG chain and small scale LNG.

The stakeholders involved in LNG bunkering: LNG producers, shippers, port operators, utilities, final customers...

LNG receiving terminals and port infrastructures designed for LNG bunkering.

Technical evolutions related to small scale LNG for LNG and port operators, and shippers.

Specific challenges regarding LNG bunkering:

LNG barge vs. onshore LNG supply.

The management of LNG storage, partial fill and sloshing.

Boil-off gas (BOG), reliquefaction and subcooling.

LNG transfer.

## LNG CONTRACTS

0.5 d

Factors impacting LNG prices and their evolutions on the markets.

Costs of investments of LNG bunkering infrastructures.

The investments dynamics in road transportation and shipping.

Costs related to the transportation and distribution networks.