Join the new introductory LNG Bunkering Course to gain a solid foundation in all aspects of LNG bunkering, design and the operation of LNG fuelled ships including:

- Cryogenic nature of LNG
- Optimum conditions for storing LNG
- Background to the LNG supply chain
- LNG transfer and bunkering operations
- Safety and regulation for design and operation
- Risk assessment
- LNG crew training
- Onboard and shoreside LNG containment systems
- Vessel design and tank location
- LNG fuelled engines and propulsion systems

PLUS Interactive Workshop Sessions

- Work in groups, develop a strategy and put knowledge into practice
- Participate in practical case study projects on creating risk assessments, selecting LNG transfer operations and calculating payback time
- Debriefing sessions with industry experts provide the perfect opportunity to clarify content and consolidate learning
LNG bunkering procedures
An introductory guide to LNG fuel for ships: Understand LNG operations, regulation, safety and vessel design

10.15 Session 1.2 Introduction to the properties and behaviour of LNG
This session will provide a background to the key physical characteristics of LNG. Learn how LNG behaves in different conditions to better understand how this can influence design, safety and operational decisions when using LNG as a fuel for ships.
- What is LNG? Introduction to the composition of liquid natural gas
- Optimum conditions for LNG: Understanding the impact of temperature and pressure on LNG
- Methane number and LNG energy content compared to traditional marine fuels

11.15 Coffee break

11.45 Session 1.3 Safety and regulation
The cryogenic and flammable nature of LNG makes ensuring safety during design and operations of the utmost importance. Understand potential safety hazards, how they can be avoided and what the regulations and guidelines state.
- Learning the safety and structural risks of using a cryogenic fuel
- Gas detection and control systems
- Safety considerations of LNG and gas containment systems
- Minimising venting
- Preparing for the risk of cryogenic spills

12.45 Lunch

13.45 Session 1.4 Risk assessment
Examine the best ways to determine, minimise, reduce and remove risks at ports and during LNG bunkering operations in order to ensure safe operations.
- How to determine safety zones and minimum safety distances
- Assessing the external parties to include in risk assessments
- Understanding the different tests available to reduce risk
- Emergency response plans for gas leaks, LNG spills and other incidents
- Class society recommendations for vessel safety
- The importance of establishing a safety culture

14.45 Coffee break

DAY TWO: Thursday 26 February 2015

09.00 Coffee

09.30 LNG transfer and bunkering operations
The transfer of LNG fuel from bunker source to receiving vessel can vary greatly between different operations. The following sessions examine how LNG fuel is transferred during bunkering operations including an examination of:
- LNG bunkering procedures
- Typical quantities of LNG transferred during each type of LNG bunkering operation
- Cause and effect of boil-off gas
- Custody transfer: Legal and operational implications

16.15 Session 2.5 Training for crew and shoreside personnel
This session provides insight into the knowledge requirements for all those involved in LNG bunker operations and the training available to provide this. Key training topics are:
- Understanding bunkering activities different crew members are involved in
- Certification and requirements for different levels of onboard crew
- Training requirements for shoreside and port authority personnel
- Safety hazards when handling gas and LNG
- Where do the different responsibilities lie?

16.20 Close of day one followed by networking drinks reception
Mingle with fellow attendees and network with course leader and fellow course attendees to clarify areas of uncertainty.

16.45 Debriefing session
Review key take-away points from the day’s sessions, share questions with the course leader and fellow course attendees to clarify areas of uncertainty.

17.00 Session 1.5 Risk assessment project
Transfer what you have learnt into practice. Work in groups to create your own risk assessment. Assess potential risks to establish safety zones, emergency procedures and necessary knowledge requirements for all stakeholders involved. A great way to consolidate your learning.

17.45 Workshop 1 Risk assessment

21.00 Coffee break

SAVE £200! BOOK BY 5 DECEMBER
An introductory guide to LNG fuel for ships: Understand LNG operations, regulation, safety and vessel design

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An introductory guide to LNG fuel for ships: Understand LNG operations, regulation, safety and vessel design

Wednesday 25 – Friday 27 February 2015
Radisson Blu Hotel Amsterdam

LNG Fuel Forum
@MaritimeEvents
MaritimeEventTV

PRACTICAL WORKSHOP

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Learn the implications of the
09.00
08.30 Coffee

DAY THREE: Friday 27 February 2015

19.00 Course dinner
Continue networking long after the day’s proceedings have come to a close.

11.00 Coffee break
11.30 Session 3.3 LNG fuelled engines and propulsion systems
This session offers a background into the key operational differences and assessment of engine pros and cons. Examples of different fuel consumption and operational variations from high power to mostly idle applications will help you to select the optimum engine type for different operations.
• Dual fuel engines
• Spark engines
• LNG engine fuel consumption compared with traditional bunker fuel
• Understand how variations in LNG quality can impact engine performance
• 4 stroke engines
• 2 stroke engines

12.30 Lunch

13.30 Workshop 3 Business model and payback time workshop
Assess the optimum design solutions for the specific operation and location. Explain your decision with proposals for to ensure optimum compatibility for the operation of the LNG fuelled ships. From the LNG methods explained earlier in the programme assess the best solution for the specific operation and location. Explain your decision with proposals to maximise safety or efficiency.

14.30 Debriefing session
Review key take-away points from the day’s sessions, share questions with the course leader and fellow course attendees and clarify areas of uncertainty.

14.50 Close of course

Workshop 2 LNG transfer and simultaneous operations case study
Consider a case study example of a vessel using LNG fuel. From the LNG methods explained earlier in the programme assess the best solution for the specific operation and location. Explain your decision with proposals to maximise safety or efficiency.

16.15 Session 2.6 Debriefing session
Review key take-away points from the day’s sessions, share questions with the course leader and fellow course attendees and clarify areas of uncertainty.

16.35 Close of day two

10.00 Session 3.2 LNG containment: Pressurised and non-pressurised storage systems
The properties of LNG require methods of fuel storage new to traditional shipping. The containment system chosen can greatly impact design, and the operation of the LNG fuelled ships. This session explores the ways in which LNG tanks vary and what to look for to ensure optimum compatibility for each vessel’s operations.
• Overview of shape, fabrication and pressure of tanks
• Understanding the operational implications of pressurised and non-pressurised containment systems: How does this compare to operations using traditional marine fuels?
• Understanding key differences between the available onboard storage tanks

8.30 Coffee

09.00 Session 3.1 IGF code and LNG vessel design
Learn the implications of the developing IGF code on all aspects ensuring safety during the design of LNG fuelled vessels. Align this knowledge with an understanding of the commercial implications of design including how much space LNG tanks take up on different vessel types and the implications this has on vessel payload for different applications.
• Fuel system arrangement
• Control system and safety mechanisms
• Firefighting systems
• Tank location and implications on vessel payload
• Retrofit considerations and examples

11.00 Coffee break

Your expert trainers include:
David Haynes
SOCIETY FOR GAS AS A MARINE FUEL (SGMF)
Senior Representative
DNVGL
Dr. Yacine Zellouf
GDF SUEZ
Claudia Beumer
EMERSON PROCESS MANAGEMENT
Nigel Draffin
LQM PETROLEUM SERVICES
Gianpaolo Benedetti
HOULDER
Dr. Alan Whitcher
GTT TRAINING
Bas van dem Beemt
TNO

Top 5 reasons this a must attend course:
1. Interactivity – in groups work through practical exercises and create strategies for your business
2. Experts on hand throughout to provide up to date guidance and coaching
3. Learn from your fellow workshop group participants – what did they do differently and why?
4. No prior knowledge assumed – build a solid foundation on all aspects of LNG bunkering
5. Ample opportunity to network ‘out of hours’ during the Drinks Reception and Course Dinner (included in the course fee)

The perfect course to attend for:
✔ Both maritime and natural gas professionals
✔ Those involved in operational, design, regulatory and commercial aspects
✔ People new to industry, with increased responsibility or who want to refresh their knowledge

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**FEE:** Bookings made within two weeks of the event must be accompanied by a credit card confirmation.

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