COURSE OVERVIEW TM0133
Technology and LNG Chain

Course Title
Technology and LNG Chain

Course Date/Venue
November 17-21, 2024/SAS Meeting Room, Holiday Inn Muscat al Seeb, an IHG Hotel, Muscat, Oman

Course Reference
TM0133

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Technology and LNG Chain. It covers the natural gas and LNG; the importance and of LNG; the milestones and major developments of LNG; the major LNG producing countries and regions; the global reserves and their implications; the major companies in the LNG value chain and the role of governments and regulatory bodies; the environmental impact of LNG production and consumption and mitigate strategies; exploration and extraction technology; the advanced drilling techniques and subsea production systems; and the natural gas treatment by removing impurities and desulfurization and dehydration.

During this interactive course, participants will learn the liquefaction process and technologies, liquefaction trains and modular units; the LNG storage solutions covering on-site storage facilities and cryogenic storage tanks; the LNG transportation and safety measures in LNG shipping; the regasification technologies, floating storage regasification units (FSRUs) and LNG distribution networks; the safety systems in regasification, digitalization in the LNG industry and small-scale LNG developments; the new liquefaction technologies, advanced LNG carrier designs and carbon capture and storage in LNG; and the economics of the LNG value chain, contracts and trading in LNG, challenges and risks in the LNG business and sustainability and LNG's role in the energy transition.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on technology and LNG chain
- Differentiate natural gas and LNG and discuss the importance and of LNG
- Explain the milestones and major developments of LNG
- Recognize the major LNG producing countries and regions including the global reserves and their implications
- Identify the major companies in the LNG value chain and the role of governments and regulatory bodies
- Explain the environmental impact of LNG production and consumption and mitigate strategies
- Determine exploration and extraction technology covering advanced drilling techniques and subsea production systems
- Carryout natural gas treatment by removing impurities and desulfurization and dehydration
- Discuss liquefaction process and technologies, liquefaction trains and modular units
- Identify LNG storage solutions covering on-site storage facilities and cryogenic storage tanks
- Illustrate LNG transportation and safety measures in LNG shipping
- Recognize regasification technologies, floating storage regasification units (FSRUs) and LNG distribution networks
- Explain the safety systems in regasification, digitalization in the LNG industry and small-scale LNG developments
- Identify new liquefaction technologies, advanced LNG carrier designs and carbon capture and storage in LNG
- Discuss the economics of the LNG value chain, contracts and trading in LNG, challenges and risks in the LNG business and sustainability and LNG's role in the energy transition

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of technology and LNG chain for engineers, supply chain managers, analysts, environmental and regulatory experts, technicians, investors, operations and maintenance personnel, energy industry professionals, researchers and academics, risk and safety professionals.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Mike Taylor, PhD (on-going), MScLI, MBA, MBL, BSc, HDE, is a **Senior Management Consultant** with over **25 years** of extensive experience in the areas of **Data Quality Control**, **Data Quality Assessment**, **Data Quality Planning**, **Data Quality Strategy Management**, **Data Modelling**, **Root Cause Analysis & Solution Development**, **Project Planning, Scheduling & Cost Control Professional**, **Project Scheduling & Cost Control**, **Facilitation & Leadership** Skills, **Coaching**, **Human Resource** Development, **Psychometric** Testing, **Career Development** & Competence, **Succession Planning**, **Self-Development & Empowerment**, **Personal Learning Needs Identification**, Critical Success Factors (**CSFs**), Key Performance Indicators (**KPIs**), Productivity **Creativity & Thinking** Modes, **Human Resource Scorecard** Management, **Career Laddering**, **Fast-Track Career Progression** Application, **Knowledge** Management, **Customer** Management, **Leadership** Skills, **Presentation** Skills, **Negotiation** Skills, **Decision Making** Skills, **Communication** Skills, **Emotional Intelligence**, **Performance** Management, **Contract** Management, **Quality** Management, **Commercial Strategy**, **Project** Management, **Risk** Management, **Leadership & Business** Management, **Human Resource** Management, **Planning**, **Budgeting & Cost Control**, **Business Development**, Innovation, Sales Strategy and Knowledge & **Intangible Asset Assessment** Design. Further, he is also well versed in **Organization Management & Business Consulting**, **Stakeholder & Supplier Evaluation**, **Data Collection & Information Gathering**, **Value & Supply Chain** Management, **Intellectual Property & Innovation** Assessments, **Logistics & Supply Chain** Management, **Budgeting & Cost Control** and **Marketing** Management. Mr. Taylor is the **Founder & CEO** of Mitakon Innovation Pty Ltd wherein he is responsible for the development of Executives & Senior Managers specializing in innovation, knowledge management and commercial negotiation as well as authored, implemented and executed a global 21st century facilitation and leadership methodology.

During his career life, Mr. Taylor has gained his practical and field experience through his various significant positions and dedication as the **Knowledge-Solutions Service Provider**, **Founder-Principal/CIO**, **Subject Matter Expert**, **Consulting Partner**, **Executive/Management Development Facilitator**, **Multinational/Corporate Senior Management Consultant**, **Senior Quality & Management Consultant**, **Executive Management Development/Facilitator**, **Business Consultant/Facilitator**, **Business & Quality Consultant/Coach**, **Client Director**, **Administration Manager**, **Quality Manager**, **International Sales & Business Development Executive**, **Regional Sales Manager**, **National Key Accounts Manager**, **Commercial Sales & Marketing Consultant**, **Admin Assistant**, **Sales & Marketing Representative**, **Key Note Speaker**, **Lecturer** and **Instructor/Trainer** for various international companies such as the Highland Group (Business Consulting), **Anglo American**, **BHP Billiton**, Rio Tinto, DI Management Solutions (BPO), Master Deal Making Institute (MDMI), RMG/Contact Media & Communications, Paul Dinsdale Properties (PDP), Giant Leap Architects, Wise Capital Investments (HOD), Evolution® Advertising, Collaborative Xchange, Leatt Corporation, Dentsply SA, FMCG/Binzagr Company, **Unilever**, **Kellogg's**, BAT, **Hershey's**, CORO, Lilly Direct/Lennon Generics and Bausch & Lomb.

Mr. Taylor has **Master** degrees in **Leadership & Innovation**, **Business Administration** and **Business Leadership** as well as a **Bachelor** degree in **Physical Education** and pursuing **PhD** in **Global Governance & Energy Policy**. Further, he is a **Certified Instructor/Trainer**, **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and a member of Incremental Advantage, Da Vinci Institute, Black Management Forum, Institute of Directors (IOD), World Future Society (WFS), Social Science Research Network, University of Kwazulu Natal (Alumnus), Anthropology & Archaeology Research Network and National Research Foundation (NRF). He has further delivered numerous trainings, courses, workshops, seminars and conferences globally.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Sunday 17th of November 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	**Welcome & Introduction**
0815 – 0830	***PRE-TEST***
0830 – 0900	***Basics of Natural Gas & LNG*** *Differences between Natural Gas & LNG ● Importance & Uses of LNG*
0900 - 0930	***Historical Context of LNG*** *Evolution of the LNG Industry ● Milestones & Major Developments*
0930 – 0945	*Break*
0945 – 1030	***LNG Reserves & Production Regions*** *Major LNG Producing Countries & Regions ● Global Reserves & their Implications*
1030 – 1230	***Key Players & Stakeholders*** *Major Companies in the LNG Value Chain ● Role of Governments & Regulatory Bodies*
1230 – 1245	*Break*
1245 – 1345	***Environmental Considerations*** *Environmental Impact of LNG Production & Consumption ● Mitigation Strategies*
1345 - 1420	***Interactive Session****: Discussion on the Importance of LNG in the Global Energy Mix*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2: Monday 18th of November 2024

0730 – 0830	***Exploration & Extraction Technology*** *Advanced Drilling Techniques ● Subsea Production Systems*
0830 - 0930	***Natural Gas Treatment*** *Removing Impurities ● Desulfurization & Dehydration*
0930 – 0945	*Break*
0945 – 1100	***LNG Liquefaction*** *Liquefaction Process & Technologies ● Liquefaction Trains & Modular Units*
1100 – 1230	***LNG Storage Solutions*** *On-Site Storage Facilities ● Cryogenic Storage Tanks*
1230 – 1245	*Break*
1245 – 1345	***LNG Transportation*** *LNG Carriers & Their Technology ● Safety Measures in LNG Shipping*
1345 - 1420	***Regasification*** *Importance of Turning LNG back to Gas ● Regasification Terminals*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3: Tuesday 19th of November 2024

0730 – 0830	***Regasification Technologies*** *Open Rack Vaporizers ● Submerged Combustion Vaporizers*
0830 - 0930	***Floating Storage Regasification Units (FSRUs)*** *Benefits of FSRUs • Key Technologies Involved*
0930 – 0945	*Break*
0945 – 1100	***LNG Distribution Networks*** *Pipelines & Infrastructure • Managing & Monitoring LNG Flow*
1100 – 1230	***Safety Systems in Regasification*** *Safety Valves, Barriers & Protocols • Emergency Response Measures*
1230 – 1245	*Break*
1245 - 1420	***Digitalization in the LNG Industry*** *Predictive Maintenance using Machine Learning*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4: Wednesday 20th of November 2024

0730 – 0830	***Small-Scale LNG Developments*** *Benefits & Challenges • Applications in Remote Areas*
0830 - 0930	***New Liquefaction Technologies*** *Efficiency Improvements • Reducing Carbon Footprint*
0930 – 0945	*Break*
0945 – 1100	***Advanced LNG Carrier Designs*** *New Propulsion Systems • Enhanced LNG Storage on Ships*
1100 – 1230	***Carbon Capture & Storage in LNG*** *Importance in Reducing Carbon Emissions • Technologies and Methods*

1230 – 1245	*Break*
1245 – 1420	***Interactive Session**: Group Discussion on the Future of LNG with Emerging Technologies*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5: ***Thursday 21st of November 2024***

0730 – 0830	***Economics of the LNG Value Chain*** *Cost Components in LNG Production, Transportation & Regasification • Pricing Mechanisms in Global Markets*
0830 - 0930	***Contracts & Trading in LNG*** *Long-term vs. Spot Contracts • Key Considerations in LNG Trading*
0930 – 0945	*Break*
0945 – 1100	***Challenges & Risks in the LNG Business*** *Geopolitical Risks • Market & Price Fluctuations*
1100 – 1230	***Sustainability & LNG's Role in the Energy Transition*** *LNG as a Bridge Fuel • Role of LNG in a Renewable-Dominant Future*
1230 – 1245	*Break*
1245 – 1345	***Interactive Session**: Scenario Analysis Exercise on Decision-making in the LNG Business*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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