AN LDI TRAINING COURSE

NATURAL GAS & LNG

FROM PRODUCTION TO COMMERCIALIZATION

(A 3 Days Masterclass in Managing Liquid Natural Gas Business)

by

Ir. Agoes Sapto Rahardjo Moerdi Hartono

INTRODUCTION

The most comprehensive 3 days workshops that cover LNG Business from its study, conception, development, operation to its operation from technical, engineering, regulatory, and financial perspectives. You will also learn the current LNG status, the most dvanced technologies used around the world and their pros and cons. You will also learn about risk factorthat comes from an LNG development and operations crucial for any stakeholders and regulators and many more.

WHY SHOULD YOU ATTEND

- The global push to reduce carbon emissions to net-zero by 2050 is intensifying, with every sector of the economy increasing targets and focus.
- Natural Gas will continue tobe an important energy source across board sector of the economy, particularly, transportation, heavy industry and manufacturing.
- Natural Gas, especially Liquefied Natura Gas, does have its challenges, particulary around the costs associated with storage, re-gasification and transportation

WHO SHOULD YOU ATTEND?

Investor, Project Manager, Engineers, Oil & Gas Companies, Management, Bankers and Regulators.

BENEFIT

- Materials training sofcopy (usb) Gain a comprehensive understanding of LNG and materials for future reference.
- Participants will receive a certificate after completing the training.

MATERIAL CONTENT

A. ENGINEERING.

A.1. GENERAL.

A.1.1. Introduction To Petroleum Operation Activities (Exploration, Exploitation, Abandonment, Reserve, Hydrocarbon Composition).
A.1.2. Natural Gas Monetization Option (Pipe Gas, CNG, LNG, GTL, Gas to Electricity).
A.1.3. Natural Gas (Pipeline Gas, LNG, CNG, LPG) Sales Composition & Specification.
A.1.4. Natural Gas & LNG Safety (Behaviour, Standard, Engineering Code & Standard).
A.1.5. Natural Gas & LNG Project Economic Yardstick (IRR, ROI, NPV, Investability, Bankability)

A.2. NATURAL GAS & LNG INFRASTRUCTURE.

A.2.1. Introduction To Upstream Production Facility (Fixed Platform, TLP, FPSO, FPU).
A.2.2. Onshore LNG, Floating LNG, Small-Scale LNG, LPG Extraction, Condensate Stabilizer.
A.2.3. LNG Receiving & Regasification Terminal (On Shore Receiving Terminal, FSRU).
A.2.4. LNG Retail Logistic & Distribution Mechanism (Hub, Milik-Run, Bulk-Breaking).

A.3. NATURAL GAS & LNG PROCESS EQUIPMENT.

A.3.1. Natural Gas & LNG Plant Design Consideration (Operation, Engineering Code & Standard).
A.3.2. Sweetening/Purification Unit.
A.3.3. Liquefaction Unit (Refrigeration Technology, Turbomachinery, Heat Exchange Process).
A.3.4. Technology & Equipment Selection.
A.3.5. Custody Transfer & Measurement System (CTMS).
A.3.6. LNG loading-unloading facility (Loading Arms, Cryogenic-Hose, LNG Dispenser).
A.3.7. Regasification Technology (Open rack Vaporizer, Submerged Combustion).
A.3.8. LNG Tank Containment Design (Single, Double, Full Containment, Cryogenic Iso-tank).
A.3.9. Containment System for LNG Carrier (Membrane Type, Prismatic, Moss Type).
A.3.10. Consideration of Reliability, Thermal Efficiency, & Availability Factor.

B. COMMERCIAL.

B.1. NATURAL GAS & LNG BUSINESS STRUCTURE.

B.1.1. Natural Gas Business (Pipeline Gas)
B.1.2. LNG Integrated-Business.
B.1.3. LNG Non-Integrated Business.
B.1.4. LNG Tolling Fee.

B.3. FIELD DEVELOPMENT PLAN

B.3.1. Selection Of Operation Scenario (Value-Risk Trade Off).
B.3.2. Project Justification (Feasibility – Cost – Revenue).
B.3.3. Project Risk Management (risk Identification & mitigation).

B.4. FINAL INVESTMENT DECISION (FID).

B.4.1. Project Capitalization (Feasibility Study, Pre-FEED, FEED, EPC).
B.4.2. LNG Finance (Equity, Bond, Project Finance).
B.4.3. Project Cost & Structure.
B.4.4. Procurement Strategy (single FEED-Single EPC, Dual FEED-Single EPC).
B.4.5. Condition Precedent for FID.

C. AGREEMENT

C.1. SALES AGREEMENT

C.1.1. Transfer Of Title (FOB, CIF, DES)
C.1.2. Gas Sales Agreement (GSA) and LNG Sales Purchase Agreement (SPA).
C.1.3. Negotiation Process (MOU/LOI, HOA, LNG SPA)
C.1.4. Terms of Agreement (Long Term Sales, Short Term Sales, Spot Sales)
C.1.5. Type Of Contract (Supply Contract, Dedicated Contract, Seller Nomination)
C.1.6. Condition Precedence (CP) of LNG SPA
C.1.7. Commercial Clauses (Quantities, Qualities, Flexibilities, Destination, Price, Etc).
C.1.8. Take or Pay (TOP), Take and Pay, Deliver or Pay (DOP), & Compensation Fee.
C.1.9. Right, Obligation, And Legal Aspects (Definition, Hard Ship, Force Majeure, Arbitration).
C.1.10. Commercial Flexibility (Price Review, Open Destination, Reducing Off Takes Volume).
C.1.11. LNG SPA Operation (Lifting Schedule, Lifting Operation, BTU Balance).
C.1.12. Buyer Creditworthiness & Offtakes Guarantees (Collateral & Back- To-Back Agreement).
C.1.13. Master Sales Agreement (MSA) & Confirmation Noticed (CN).
C.1.14. Producer, Customer, Seller, Buyer, Trader, Aggregator.
C.1.15. Interconnection Among LNG SPA, Transportation Agreement (TA), & GSA.

C.2. LNG TRANSPORTATION AGREEMENT

C.2.1. Type Of Contract (Bare Boat, Time Charter)

C.2.2. Important Commercial Clauses (Charter Period, Hire Rate, Delivery And Re-Delivery).

D.1. LNG MARKET & COMPETITION

D.1.1 Global Market Competition (Qatar, USA, Australia).

D.1.2. Domestic Market & Rencana Umum Energi Nasional (RUEN)

D.1.3. Domestic LNG & National Gas Infrastructure.

D.1.4. Domestic LNG Retail.

D.1.5. Emerging Of Global LNG Business (Aggregator, Trader, Derivative, Hedging)

D.1.6. Decarbonisation, sustainability development, & ESG.

D.2. LNG COMMERCIAL, RISK & MITIGATION

D.2.1 Buyer Creditworthiness & Offtakes Guarantees (Collateral & Back-To-Back Agreement

D.2.2. Market Fluctuation (Competion Among Players)

D.2.3. Emerging Of LNG Business Player (Aggregator, Trader).

D.2.4. Emerging Of LNG Commercialization (Derivative, Hedging, Etc)

ABOUT INSTRUCTOR

Ir. Agoes Sapto Rahardjo Moerdi Hartono

He has over three decades of experience in the Indonesian Oil and Gas sector, particularly in the gas and LNG sector, spanning the entire gas and LNG value chain through operational, commercial, managerial, and institutional roles. He has contributed as a guest lecturer, writer, and speaker, with a primary focus on sustainable national.

He currently serves as a technical and commercial consultant for the gas business and was an advisor to INPEX Indonesia on the technical, project, commercial, financing, marketing, and supply chain aspects of the Abadi Masela LNG Project. He also held various managerial roles in gas, LNG, and LPG marketing, project management, operations, facilities, and maintenance at BPMIGAS/SKK MIGAS. evelopment to optimize Indonesia's gas resources to support national energy security.

Professional Focus

• Hands-on experience in the Indonesian upstream Oil and Gas value chain, including field monetization planning, LNG plant design and technology, project management, operations and maintenance, transportation, supply chain (procurement), construction, and marketing and commercialization (sales and purchase agreements).

• Direct involvement in LNG marketing, commercial assessment, and domestic and international LNG commercialization processes.

• Continuous contribution to capacity development through roles as a guest lecturer, professional course facilitator, seminar speaker, and author.

• Professional orientation on optimizing the utilization of national gas resources to support Indonesia's energy security, by striving for natural gas distribution to meet the supply needs of industry and communities throughout Indonesia.

This course is presented by LDITraining.

For information about LDI Training please visit www.lditraining.com
If you have any question about our courses, please email your enquiry to lditrain@indo.net.id or contact to: 021- 6326911 / 0811 812857