

MASTER CLASS ON CURRENT STATE OF FSRU & POTENTIAL FOR FUTURE DEVELOPMENTS

Objective of the Master Class

The Master Class will provide a comprehensive overview of the FSRU technology, feasibility of commissioning, site studies comparative economics of FSRU, global FSRU locations along with pros and cons of the choice of different types of FSRU compared to onshore fixed facilities. The discussion will also focus on the FSRU technology in Indian context.

Director

Mr. Alexander Harsema-Mensonides of Marine Service GmbH, located in Hamburg, Germany, will direct the Master Class. Mr. Harsema studied economics and mechanical engineering being involved in the LNG industry since 1999. Previously he held various technical and commercial positions in the shipbuilding industry in the Netherlands, founded his own MPT Consultancy in 1999 and is working with Marine Service since 2008 taking care of business development in LNG shipping, Floating LNG and Small Scale LNG and has been involved in planning and design of FSRU, FSRU conversions and other LNG ship-shore interface installations around the world, namely, in China, Qatar, India, Germany, Italy, Greece, Norway, France and Brazil.

Format of the class

Mr Harsema will give a presentation in line with the programme content as outlined below for **one hour which will then be followed up by question and answer for a period of 30 – 45 minutes.**

Content

1. Introduction to FSRU
 - Technical explanation of FSRU;
 - Selection rationale for FSRU;
 - Current facilities in operation around the world.

2. Technology
 - i. Type of offshore terminals.
 - a. - Floating
 - FSRU - jetty moored, island type jetty moored, turret moored, turret yoke moored, STL buoy moored,
 - FSU, TORP, semi sub
 - Gravity based
 - b. Building new FSRU facilities v/s conversion of existing tonnage;
 - c. LNG transfer arrangements - moored to jetty, across the jetty, side-by-side, tandem.

3. Site selection
 - i. Location.
Offshore v/s inshore, currents, tide, wind, waves, water depth; accessibility, navigational hazards, connection to onshore gas grid.
 - ii. Environmental impact
Open v/s closed loop; exhaust gas emissions.
4. Economics
 - i. Onshore terminal v/s offshore terminal - cost, completion time frame, regulatory requirements, public acceptance;
 - ii. Cost comparison of different FSRU alternatives,
 - iii. Cost per MMBTU regasified
5. FSRU specifically applicable to India
6. Future developments – direction of FSRU technology in the medium to long term
7. Conclusions