



Press Release

Ballast-FREE LNG carrier project kicks off phase II

Paris – April 17, 2018. GTT, Lloyd's Register (LR) and Dalian Shipbuilding Industry Corporation (DSIC) today launched the second phase of their "30,000m³ B-FREE LNG carrier" Joint Development Project (JDP). A meeting was held today at Lloyd's Register premises in Shanghai to commence Phase II of the project, and to welcome Exmar as a new partner to the JDP.

The first phase of the project performed by DSIC, GTT and Lloyd's Register developed a new design of ballast-free medium-sized LNG carrier, fully compliant with the new IMO "Ballast Water Management Convention", and using membrane containment systems. It showed the potential for competitive advantages for the ship-owners, combining environmentally-friendly features with increased efficiency. It also indicated potentially lower construction and operational costs. The design received an Approval in Principle from Lloyd's Register in December 2017.

Phase II of the project aims to develop the design further, and to validate the initial results achieved during Phase I by applying more detailed analysis and verification, including model testing. The addition of Exmar brings a wealth of experience in operation of Gas ships to the project team, which will help take the design from a concept to a viable, practical vessel meeting the requirements of end users.

Pierre Dincq, Managing Director of Shipping at Exmar said at the occasion *"The ballast-free concept is a well-suited solution in the context of a shipping world with growing environmental requirements and concerns. By eliminating the need for ballast water, there is an absolute certainty that no invasive species will be transported on board of the vessel. Moreover, the ballast water treatment plant can be omitted, reducing the maintenance requirements and the energy consumption of the vessel which has a positive impact on the CO₂ footprint of the vessel. The combination of the long experience in their respective fields and a strong innovation culture of the several partners in the JDP will ensure this project will become a success."*

"After the encouraging results of the first phase, we are looking forward to delving into the details some more in the coming months. It's a pleasure to be working with such experienced and capable partners on an innovative new design", said Chris Hughes, General Manager Business Development of LR China.

Mr. Ma Yingbin, Deputy Technical Director of DSIC commented at the occasion: *"We have built experience on reduced ballast water oil tanker design such as VLCC, Suezmax and Aframax type vessels in the past and this experience will benefit to this ballast free medium size LNGC development. DSIC will focus on ship arrangement, performance calculation including hull line optimization by CFD and ship model test verification, propulsion selection and hull structure basic design"*. *"We are confident to end up with a solid design and a competitive offer both in cost and performance"* he added.

Lorenz Claes, naval architect in charge of the project at GTT, said at the occasion: *"We are excited to pursue the development of the promising ballast-free design and welcome Exmar, our long-time partner, in this project. Their involvement clearly demonstrates the interest of the industry in this new type of*

vessel, both environmentally-friendly and of high economic interest". Adnan Ezzarhouni, General Manager of GTT China, who took part to the ceremony, added: "Our Company really appreciates working on such joint development projects, enabling the sharing of the knowledge of stakeholders and maintaining our innovation goals".



Signing ceremony of Ballast-Free LNGC Phase II JDP

About GTT

GTT (Gaztransport & Technigaz) is an engineering company expert in containment systems with cryogenic membranes used to transport and store liquefied gas, in particular LNG (Liquefied Natural Gas). For over 50 years, GTT has been maintaining reliable relationships with all stakeholders of the gas industry (shipyards, shipowners, gas companies, terminal operators, classification societies). The company designs and provides technologies which combine operational efficiency and safety, to equip LNG carriers, floating terminals, and multi-gas carriers. GTT also develops solutions dedicated to land storage and to the use of LNG as fuel for the vessel propulsion, as well as a full range of services.

GTT is listed on Euronext Paris, Compartment A (ISIN FR0011726835 Euronext Paris: GTT) and is notably included in SBF 120 and MSCI Small Cap indices.

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About Lloyd's Register

Lloyd's Register (LR) is a global engineering, technical and business services organisation wholly owned by the Lloyd's Register Foundation, a UK charity dedicated to research and education in science and engineering. Founded in 1760 as a marine classification society, LR now operates across many industry sectors, with some 8,000 employees in 78 countries.

LR has a long-standing reputation for integrity, impartiality and technical excellence. Its compliance, risk and technical consultancy services give clients confidence that their assets and businesses are safe, sustainable and dependable. Through its global technology centres and research network, LR is at the forefront of understanding the application of new science and technology to future-proof its clients' businesses.

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About DSIC

Dalian Shipbuilding Industry Co. Ltd. (DSIC) was established in 1898. She is the biggest shipbuilding yard in China with the most comprehensive range of various products. Main businesses include shipbuilding, offshore engineering and construction, ship repair conversion recycling and heavy industry.

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About Exmar

EXMAR is a provider of floating solutions for the operation, transportation and transformation of gas. EXMAR's mission is to serve customers with innovations in the field of offshore extraction, transformation, production, storage and transportation by sea of liquefied natural gases, petrochemical gases and liquid hydrocarbons.

EXMAR creates economically viable and sustainable energy value chains in long-term alliances with first class business partners. EXMAR designs, builds, certifies, owns, leases and operates specialized, floating maritime infrastructure for this purpose as well as aiming for the highest standards in performing commercial, technical, quality assurance and administrative management for the entire maritime energy industry.

EXMAR is listed on Euronext Brussels (EXM) and is part of the BEL Small Index.

For more information, visit www.exmar.be.

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