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## **Marine Support to Offshore LNG Terminals**

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### **Abstract**

Export and import offshore LNG terminals have a bright future... and the technology is here.

As part of the most visible benefits are stranded gas monetization, no land availability issues, reduced administrative pressure, and distance from politically unstable regions.

The Floating LNG industry aims at operating anywhere with maximum uptime, while addressing those familiar and essential concerns: safety, security, environmental responsibility and cost.

Among the challenges presented: access to resources and markets are not always located in the most tranquil waters, and valuable gas reserves can be at a significant distance offshore.

Local regulations might still impose serious constraints. Lastly, LNG carrier maneuvers and cryogenic liquid cargo handling pose different problems while performed in unprotected waters.

Because its role is to assist, protect, supply, maintain, and build, Marine Support is critical to the success of this great adventure.

As it has been with the advances of offshore oil exploration, this industry is coming up with adapted means to serve the emerging Floating LNG activity.

The pioneer of offshore marine support to the oil and gas industry is actively supporting the development of optimized solutions. Its approach is a combination of early project involvement, procedure development, research participation, and innovative ship design.

This paper will develop the notion of "Terminal Integrated Marine Service" applied to offshore LNG, and describe the "anatomy of a modern LNG Multipurpose Offshore Support Vessel".

### **Introduction:**

It is assumed in this paper that not everyone is familiar with the emerging offshore LNG industry, its general economic environment, and recent technologies.

The purpose here is to provide an overview on the subject in order to afford an understanding of the marine service context around offshore LNG, and better show the contribution of our industry to its development.

Discussed during years, the move to offshore LNG operations is now clearly underway. It is a "new" industry with hesitations and complexities, determined to succeed and now evolving rapidly to a more mature stage.

On a marine support standpoint, this "newness" appears as a mix of "dejà-vu" and unprecedented challenges. In an offshore stormy environment, how can we safely berth/moor a \$200 billion, relatively fragile vessel so it can offload its hazardous cargo?

This view might look extreme...but this is the challenge. Fortunately, we will see that safety requirements, experience, research and technology are here to assist.

Some technology is around the corner that will also bring us closer to the comfortable "dejà-vu" situation.