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The Development of the First Energy Bridge Regasification Vessel

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Abstract

As an alternative to the expansion of onshore LNG import terminals Exmar has in cooperation with Excelerate Energy, DSME and APL developed the "Energy Bridge Regasification Vessel" (EBRV), an innovative concept and design allowing an LNG vessel to regasify the LNG on board and discharge the high pressure gas directly into the consumer grid system, through a dedicated mooring arrangement and subsea high pressure pipeline, thereby bypassing the need for an onshore LNG import terminal.

The first EBRV, the "Excelsior", was delivered in February 2005 from the Daewoo Shipbuilding and Marine Engineering shipyard in Korea, a leading shipyard in the construction of

the latest generation of LNG carriers. A second vessel, the "Excellence" was delivered in May 2005 and two more EBRV's are on order for deliveries in 2007 and 2008.

The first LNG cargo was delivered offshore at the Gulf Gateway deepwater port in March 2005.

The paper will discuss the development of the Energy Bridge Regasification Vessel from its conceptual stage to the development of the design and final execution of the project.

1. Introduction

As an alternative to the expansion of onshore LNG import terminals Exmar has in cooperation with Excelerate Energy and DSME developed the "Energy Bridge", an innovative concept and design allowing an LNG vessel to regasify the LNG on board and discharge the high pressure gas directly into the consumer grid system, through a dedicated mooring arrangement and sub sea high pressure pipeline directly or indirectly connected to a natural gas distribution network, thereby bypassing the need for an onshore LNG import terminal.

This new concept has several advantages:

1) Permitting:

The regulatory hurdles for Energy Bridge are much lower than with land-based terminals, especially considering the security concerns that have arisen post September 11th.

2) Flexibility:

The system is comparatively easy to move to meet the demand at varying locations. This will allow local markets to develop where the cost of onshore terminals would be prohibitive.

The Development of the concept started in early 2001. The first vessels were contracted in May 2002 with Daewoo Shipbuilding and Marine Engineering (DSME) in Korea, a leading shipyard in the construction of the latest generation of LNG carriers.



Fig. 1: Typical Energy Bridge field arrangement