OTC 19054

A New Era in CNG Transportation

Len Thompson, Floating Pipeline Co. Inc.

This paper was prepared for presentation at the 2007 Offshore Technology Conference held in Houston, Texas, U.S.A., 30 April–3 May 2007.

Introduction

Floating Pipeline Company Incorporated (FPC Inc), a Canadian Corporation based in Halifax, Nova Scotia, is the licensed manufacturer for TransCanada Pipelines' Gas Transportation Modules (GTMs) used for the volume transport of Compressed Natural Gas (CNG).

Compressed Natural Gas can be used economically in the niche market for stranded gas. “Stranded gas” is any gas that cannot today be economically brought to market using conventional pipeline or liquefied natural gas (LNG) technology. It is applicable to areas where companies are not willing to invest heavily in infrastructure, or in areas where physical limitations inhibit bringing the gas ashore. Approximately 50% of the world’s discoveries and expected discoveries fall into the “stranded gas” category.

Transporting CNG in GTMs to niche markets can offer substantial price advantages over conventional energy sources such as electricity, propane, and diesel fuels, which are the only alternatives today. Studies carried out for the offshore fields alone indicate conservatively that the potential market for this technology could be as large as 50+ projects over the next 20 years, with clients including all the major oil and gas companies, and companies in the transportation and delivery of gas.

Moving natural gas from the well to market is normally achieved by pipeline (as gas) or ships (as LNG). Several other methods are being investigated to improve the economics of transport, namely CNG, gas to liquids (GTL), and variations of these.

CNG transportation has been shown to be economical in a number of specific niche situations. Moving ‘stranded gas’ as CNG can be shown to be economically attractive, for distances of less than 1,500 miles, where it is either politically restricted, physically impossible, or where the volumes are too small to justify laying a pipeline or building an LNG facility, This niche market is not limited to sea transport. It also presents significant opportunities on land through road trailers.

TransCanada CNG Technology Limited (TCCNGTL) has the worldwide licence to a patented technology that enables sufficient quantities of gas to be transported under pressure economically for projects that fit the above niche markets. This technology – composite spiral wrapped, thin walled steel pressure vessels – was approved by ASME in October 2002, which now enables its use in the applications identified.

Approval in Principle for the use of GTMs in ships was granted by Lloyds Registry of Shipping in September 2003. FPC Inc. along with its UK engineering partner, WaveSpec (a wholly owned subsidiary of BraemarSeascope, London) provided the engineering services for the submission to Lloyds on behalf of TCPL. More recently, FPC/TCPL/OSG and Rolls Royce have been working with Lloyds Register for the full approval of the ship for a project in East Africa. This is expected to be complete within the 2nd Quarter 2007.

FPC recognizes the potential of this technology and:

- Is marketing and developing contracts for the transport of CNG worldwide utilizing this technology;
- Has established a manufacturing facility in New Brunswick, Canada to fabricate, under license, the GTMs;
- Plans to sell GTMs to third party project developers;