

Expedited Marine Market Development Becomes New Growth Point for LNG Consumption Hopefully

。 The current weak demand has become the bottleneck of LNG market development. The development of downstream demand has turned out to be of critical significance in push ahead with the LNG consumption growth in the course of developing the LNG market. A couple of days ago, Pinghu Huahai Shipbuilding Co., Ltd. signed the order of brand new “green” yachts featuring environmental hygiene with Jining Port and Shipping Administration Bureau, which will hopefully push ahead with the expansion of the marine LNG consumption sector.

The research and application in respect of retrofitting the LNG fuel powered ships have begun since 2010 in China, with the delivery of “Su Su Huo 1260” - China’s first kernel dual-fuel retrofitted ship for use in August of the same year. In the same month, “Wu Tuo 302” - China’s first inland LNG-diesel dual-fuel towboat retrofitted from the original fuel oil powered main engine made a successful trial trip in Wuhan, marking the beginning of the new era for the development of LNG fuel powered ships in China.

Up to now, the LNG powered ships in China have included the bulk cargo ships, the fishing boats, the towboats, the yachts, the dredging ships and the ocean-going vessels. This order for the brand new “green” yachts has become the new development in the market sector of the LNG powered ship.

Economic Benefits Giving Birth to Internal Market Momentum

Judging from the current operation of LNG powered ships already in use, they have their unique development stronghold in terms of economy, environmental protection and safety, while economy forms the internal momentum of market development.

Table 1: Comparative Economy Analysis of LNG Dual-fuel Powered ships and Diesel Powered Ships

Natural Gas Price (RMB/CBM)	Guo Si 0# Diesel Price (RMB/Liter)	Cost of 100% Diesel (RMB/Day)	Cost of Using 70% Natural Gas (RMB/Day)	Annual Saving (RMB)
4.3	7.29	4374	3312	387740
4.4	7.29	4374	3358	370767
4.5	7.29	4374	3405	353795
4.6	7.29	4374	3451	336822
4.7	7.29	4374	3498	319850
4.8	7.29	4374	3544	302877
4.9	7.29	4374	3591	285905

As for the majority of ships currently using LNG dual fuel power, the rate of LNG replacing diesel is approximately 70%. Take Jiangsu Province as an example, the current price of Guo Si 0# Diesel is approximately RMB7.29/Liter while the average retail price of LNG is RMB4.5/CBM (RMB6.3/Kg). According to the estimation of RMB1 million for the costs of “oil-turned gas” for a ship, the period for realization the return on investment is less than 3 years. As the approximate lifespan of a ship is over 25 years, the economic benefit is very obvious. If LNG is used as the fuel, the economic benefit will be increased further in future.

Policy Guidelines Providing Favorable External Environment

Apart from the market-oriented momentum, China has also launched a series of policies in recent years to support and encourage the development of LNG powered ships. The Administrative Measures of Standardization of Subsidy Funds on Inland Waterway Vessels implemented this April is apparently for pushing ahead with the shipbuilding and the new construction of LNG powered ships by direct means of subsidy funds.

Table 2 Policies Encouraging Development of LNG Powered Ships

Date	Department	Policy	Relevant Content
2011.06	Ministry of Finance & Ministry of Transport	Interim Measures for Administration of Special Funds for Energy Conservation and Emission Reduction in Road Transport	Setting up the special funds to support the project of energy conservation and emission reduction in road and water transport
2011.09	Ministry of Transport	Energy Conservation and Emission Reduction in Water Transport of the 12 th Five-year Plan	Pilot application of the combined power technology using diesel and LNG technology for inland ships
2012.03	Ministry of Finance	Notice on Vehicle and Vessel Tax Policies for Energy-saving or New Energy Vehicles and Vessels	Starting from 1 January 2012, energy-saving vehicles and vessels are entitled to “50% remission of vehicle and vessel tax”, and vehicles and vessels using new energy are entitled to “remission of vehicle and vessel tax”
2012.10	National Development and Reform Commission	Policy for Utilization of Natural Gas	“Transport ships powered by natural gas (LNG in particular) navigating inland waterways, lakes and coastal sea” are listed under the category of top priority.
2013.03	Department of Water Transport Ministry of Transport	Implementation Program for Promoting National Standardization of Inland Waterway Vessels	From 1 October 2013 to 31 December 2015, the government subsidy is granted to the construction of demonstration

		of the 12th Five-year Plan	ships capable of raising the efficiency of passing the ship lock at the Three Gorges, powered by clean energy/fuel or of benefit to energy conservation and emission reduction in line with the national development direction.
2014.04	Ministry of Finance & Ministry of Transport	Administrative Measures of Standardized Subsidy Fund on Inland Waterway Vessels	Identify the subsidy standard for new construction of LNG powered demonstration ships

At present, the National Maritime Bureau, China Classification Society and several departments related to maritime, vessel inspection and transport of the provinces along the river have paid greater attention and given greater support to the demonstration project of testing the LNG powered ships, and push ahead vigorously with the retrofit for ships to use LNG instead. At the same time, various energy companies have also formulated the layout planning for marine refueling stations. It is expected that China's speed of developing the LNG powered vessels will continue to be on the rise, which will bring about the increasing consumption of LNG resources.

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