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Rise in Shipping Cost; Need for Truck to Ship LNG Bunkering

Prices of Imported goods in Nigeria may rise due to increase in shipping cost.

Business Day has reported that Maersk Line, the world's largest container shipping group has joined rival Mediterranean Shipping Co (MSC) in raising freight costs in response to rising oil prices, which surged to their highest levels in four years.

Maersk Line in a note to customers claimed that bunker prices, as the marine fuel is known, have risen more than 20 percent since the start of the year, and that in Europe prices have hit \$440 per metric ton, the highest since 2014, which it said has forced it to introduce an "emergency bunker surcharge".

The managing director for Maersk Line East Coast South America, Antonio Dominguez was quoted to have said: "If you look at the emergency bunker surcharge, we are not planning to make money out of this, only cover costs."

MSC added: "Fuel prices are up more than 30 percent this year and almost 70 percent since last June. [Ship fuel] prices in Europe exceeded \$442 per metric ton last week. Crude oil is hovering around \$80 a barrel — the highest since 2014."

Almost 90 percent of the world's good trade travels by sea, and the higher fuel costs are ultimately likely to be passed on to consumers, with other shipping lines the following suit.

The Nigerian Ports Authority (NPA) has mandated all shipping companies to make use of their holding bays to store empty containers, Maersk Line in Nigeria, was reported to have stated that using the company's holding bay would add to the cost of doing business for the shipping company, that the **extra cost** will be transferred to the customers.

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Use of LNG as a Shipping Fuel

Aside, passing on the extra costs to consumers, what else can the shippers do?

Explore cheaper and cleaner fuels like natural gas.

LNG as a shipping fuel, offers the maritime industry, the opportunity to meet upcoming; stringent environmental regulations, improve air quality and reduce GHG emission.

A Danish Maritime Authority Study (DMA) showed that **LNG-fuelled ships are between 10- 25% cheaper.**

History of LNG...

The first commercial liquefaction plant was reportedly built in Cleveland Ohio in 1941. In January 1959, the world's first LNG tanker "MEHTANE PIONEER" carried its LNG cargo from Lake Charles Louisiana to Canvey Island, United Kingdom. This event established the fact that large quantities of LNG could be transported across the sea safely and possibly established LNG as an "Energy Transportation Industry" that makes gas available to markets near or far.

What Is LNG About?

LNG makes make "liquefied natural gas" available to the international market and when our local markets begin to consume LNG they probably will be willing to meet that need too.

Transportation of gas has always been an issue; the cost of laying the pipelines alone was a major issue then came in LNG which reduces the size of the gas volume by a factor of 600. LNG can be transported by Ship, Rail, Truck and all the other ways a liquid can be transported.

Uses of Small Scale LNG

Small Scale LNG plants supply LNG to end-users in places where traditional infrastructure like pipelines do not reach, or to consumers requiring LNG.

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There are three major end uses for Small Scale LNG: **marine fuel (bunkering)**, fuel for heavy road transport, and power generation in off-grid locations.

The National Gas Policy has made provision for domestic use of LNG.

The Federal Executive Council on the 28th of June 2017 **approved** the new **National Gas Policy (“NGP”)**. The NGP is designed to catalyze growth of the gas industry in Nigeria.

Prior to the NGP, Nigeria’s focus has been on oil, the NGP is designed to monetize the abundant gas assets Nigeria has and help accelerate Nigeria’s industrialization as gas has many by products.

LNG for export Vs Domestic Use

NIGERIA LNG Limited (NLNG) attained a milestone with the export of its 4000th cargo of Liquefied Natural Gas (LNG) from the Bonny Island Terminal in Rivers State to Mamara LNG Terminal in Turkey. Interestingly the Mamara LNG terminal also received NLNG’s historic 3000th cargo, 3 years ago.

An in-depth review of the NGP reveals the NGP provides a bit of balance and makes provision for LNG for domestic downstream applications:

Possible Domestic uses of LNG

LNG for Transport

LNG as a fuel for heavy duty vehicles

LNG for Buses and Taxis

LNG for Shipping

LNG for Rail

LNG for Agriculture

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LNG for Power

LNG as a gas source where no pipeline gas is available

LNG as a backup supply for natural gas pipeline network

LNG as a fuel for heavy duty vehicles like Trains, Tractors, Trucks and Buses is innovative and practical; this may be made possible by small scale LNG plants and LNG engines.

Truck-to-ship LNG Bunkering

There are various methods for in-port bunkering of LNG-fueled ships, Truck-to-Ship (TTS) transfer is currently most frequently used.

During TTS, the **LNG truck** is connected to the ship on the quayside, generally using a flexible hose. In 2008, half the Norwegian coastal ferries running on LNG were regularly supplied by tanker truck, mostly overnight.

Advantages

A major advantage of truck-to-ship bunkering is the limited investment costs for operators. In addition, the LNG trucks can also be used for LNG distribution for other purposes.

TTS is the most widely used bunkering method, because of the limited demand in combination with the lack of infrastructure and the relatively low investment costs.

Disadvantages

A limitation of TTS bunkering for large consumers is the limited capacity of trucks: approximately 40-80 m³.

This bunkering method is only suitable for bunkering quantities up to 50 tonnes and is therefore only suited to smaller-sized LNG-fuelled vessels. Owing to the limited flow rate, bunkering takes about an hour (around 1,000 l/min).

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The presence of truck and bunker processes also impacts other quayside activities like cargo and passenger handling and may conflict with the NPA directive to all shipping companies to make use of their holding bays to store empty containers,

Conclusion

Nigeria is import dependent, and the shipping industry plays a major role in such imports. With rising shipping costs due to the rise in cost of shipping fuel, the relatively stable price of natural gas seems to be a floating alternative. However, demand for Small Scale LNG is sure to rise rapidly, catalyzed by the increasingly stringent energy deficit in Nigeria, evolving environmental regulations for the shipping industry. Regardless of the rising price of shipping fuel due to rising crude oil prices, Natural Gas for shipping may very well be the game changer in Nigeria's quest to monetize its abundant gas resources and preserve its environment.

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