# Managing India's Inceptive Import Requirement of LNG Through Shipping Business

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**Abstract**

The growth in LNG trade is mainly due to the energy demands of the emerging economies, particularly India and China, and due to the fact that Liquefied natural gas (LNG) is relatively safe and environmentally friendly. The paper discusses the demand for LNG in India and the plans initiated from the Indian side to manage the import of LNG during initial phase of LNG import to meet its requirements.

**Keywords: LNG, Terminals, Tie – up, Import, Government.**

## 1. Introduction

The Indian shipping sector is undergoing a major transition from its traditional form in order to grab lucrative business opportunities. A major portion of cargo transport is occupied by the products of crude petroleum [1]–[3]. Deregulation in the oil sector has been welcome news for the shipping companies as crude oil carriers do not have to deal with fixed freight rates irrespective of the market condition [4]. However, there is another problem which has to be dealt with. Due to the emergence of domestic refineries and due to an achievement of higher production by them, there has been a reduction in imports. Also, the plans of the government to introduce pipeline networks will decrease the coastal transportation in future. But, the situation was not as that of now during inceptive period of LNG requirement in India.

## 2. Need for LNG trade

However, opportunities are huge even today. Globally, the only need is that the opportunities are to be grabbed by the shipping companies as there has been a tremendous growth in Liquefied natural gas (LNG) trade over the past few years [5]. LNG is to be imported to harness India's power and fertilizer projects. Even in the event of spillage, LNG evaporates quickly and has less long term adverse effect on the ecosystem, and so poses little or no risk to environment. Besides these, LNG is also non-corrosive in nature, which also contributes to longer life LNG carrier in comparison to other cargo carriers. However, the LNG trade involves huge volume of business for the shipping industry which amounts to several billion dollars. However, this process is expensive because it costs around US$200 million for one ship to carry LNG. Hence, to be competitive with the foreign counterparts, the Indian companies started looking for business tie –ups with them to attract more business opportunities [6].

## 3. Challenges for India in LNG trade

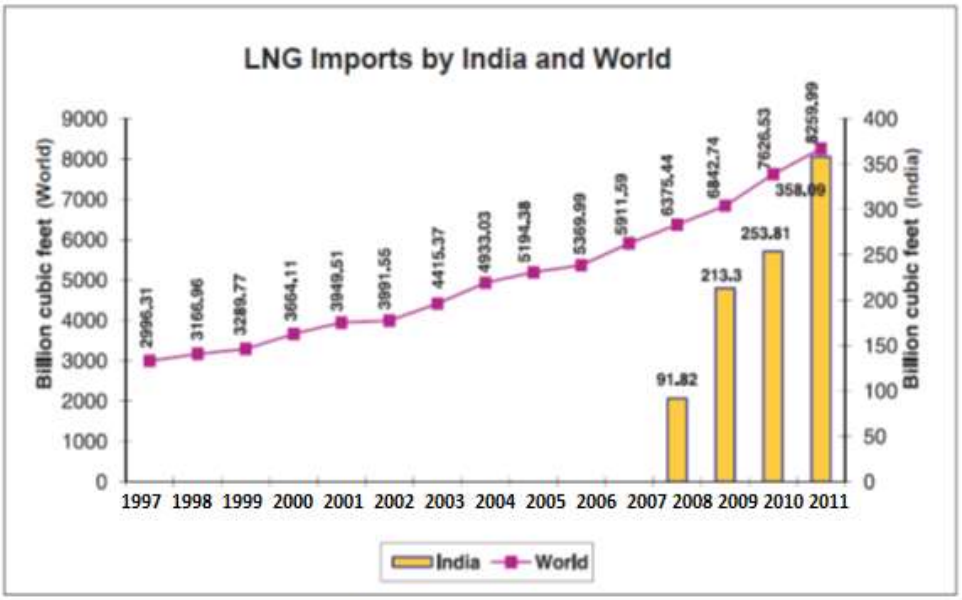
But, there were some initial problems like the port congestion as well as channels lacking depth which restricted the shipping industry in India. Recently, these two problems have plagued the Kolkata Port Trust's Haldia dock, resulting in huge loss of business. The Indian Shipping Summit 2009 that was held in Mumbai, from October 20-22, 2009 has focused on certain core issues related to shipping industry such as the manner in which the shipping industry in India has handled the financial crisis, the present state of Indian ship building and whether India has the capability to become the leading ship building nation in the world.

Earlier, even some of the guidelines of DG-Shipping (DGS) have also served as a restricting factor in utilizing the business opportunities. For example, the DGS demanded not to grant license for chartering an LNG vessel that are not registered under the flag of India. Also, the license is granted only when the full owner-ship is either by an Indian entity or with a partial owner-ship with not less 26% stake by an Indian entity in a joint venture tie – up with LNG tanker company. These were relaxed only in 2006 with modified guidelines, Also, the introduction of LNG Shipping Policy allowed the importers to transport the cargo either on FOB (free-on-board) or CIF (cost-insurance-freight) basis with flexibility using foreign or Indian flag ships [7], [8].

**4. Indian tie-ups with foreign counterparts**

Indian shipping industry currently does not own much LNG vessels; one of the main reasons is attributed towards the cost of acquisition of LNG vessels [9]. A LNG vessel with around 135,000 cubic metres capacity cost about US $ 200 million in the international market. This is the reason behind Indian shipping industry to explore this area through joint ventures [10]. Carrying LNG has been recognized as one of the significant and business sector by the Shipping Corporation of India (SCI). Hence, SCI was the first Indian company to involve in agreements with global companies for LNG shipping business. SCI acquired stakes in agreements with global companies through processes. Thus, SCI has joined hands with Mitusi Osaka Shosen Kaisha (OSK), a Japanese consortium, for building vessel to serve LNG requirement of India. Consequently, the private companies are even showing interest in LNG transportation now [10]–[12].

The import of LNG for the requirement of India started in 2004. In 2011, India imported 358 billion cubic feet of LNG, making it the seventh largest importer of LNG in the world. Qatar was by far the largest supplier, accounting for nearly 82% of India's imports. Some of the other major source countries for LNG imports by India include: Nigeria (6.3%), Algeria (4.3%), Trinidad and Tobago, and Oman (2.1% each). India achieve its LNG requirement through imports on long-term contracts basis as well as spot shipments basis.




*Source: US Energy Information Administration*

**Figure 1. LNG Imports by India and World**

During inceptive phase of import of LNG in India, we had only two LNG terminals. Some more were under planned proposal. India started receiving imports of LNG through shipping since January 2004. This was possible due to functional beginning of the Dahej terminal in Gujarat. Petronet LNG was India's first LNG importing company. It is a consortium of state-owned Indian companies and international investors, owns and operates the Dahej LNG terminal facility with a capacity of 5 million tons per year (mta) (975 bcf/y). India's second terminal, Hazira LNG terminal, started operations in April 2005, and is owned by a joint venture of Shell and Total. The capacity of the facility was 2.5 mta (488 Bcf/y) with an expansion capacity till 5 mta (975 Bcf/y) for the future requirements.

**4.1 Hiring of LNG Ships by Petronet**

Three more liquefied natural gas tankers were rented by Petronet LNG in order to meet transportation of LNG from Qatar/ Iran to the expanded Dahej terminal in Gujarat and for project at Kochi in Kerala. Paific International Lines (PLL), which already had a 138,000 cubic meter capacity ship ferrying LNG from Qatar to its Dahej terminal, also had a second similar tanker scheduled for delivery, required two more LNG tankers of similar capacity. This was for hauling additional 5 million tonnes gas to Dahej. For a requirement of 2.5 million tonnes per annum at Kochi terminal, PLL wanted a 152,000-165,000 cubic meter-capacity ship. PLL had floated global tenders for time-chartering three more LNG tankers as well as for engineering, procurement and construction (EPC) contracts for the expansion of Dahej terminal to 10 million tonnes. In addition to this, requirement for a greenfield re-gasification terminal at Kochi was also planned. The company is also expanding the capacity of Dahej LNG terminal from 5 million tonnes to 10 million tonnes per annum. Besides these the company has been setting up another LNG receiving terminal at Kochi. This was with an initial capacity of 2.5 million tonnes with plans to scale up towards 5 million tonnes per annum later. Also, the new guidelines of DGS for transporting LNG demanded to allot 26 per cent stakes to the Indian firm from the successful bidder. So, PLL was expected to hold that interest on its own or give it to any one of its promoters (IOC, ONGC, GAIL or BPCL)."

**4.1.1 Six in Fray for Petronet**

Six major shipping lines, including Mitsui, Exmar, Qatar Shipping and Essar, are left in fray for supply of three liquefied natural gas (LNG) tankers for Petronet LNG Ltd.

SCI and Great Eastern Shipping Company submitted two bids each,

- SCI teamed for bid with

  (i) Mitsui OSK line, NYK Line and K Line for one bid and

  (ii) Qatar Shipping and Isle of Man-based Dorchester Maritime for another bid

- Great Eastern teamed for bid with

  i) Malaysian International Shipping Corp for one bid and

  (ii) Teekay Shipping for another bid seperately

- Esmar Marine NV joined Indian Oil Corp and Varun Shipping wheras
- Essar Shipping and Golar LNG joined force to bid for the tender.

**4.2 Entry of GSPC LNG Shipping**

With the announcement of an ambitious third terminal in Gujarat to meet LNG requirement, the Gujarat State Petroleum Corporation (GSPC) which is a state owned enterprise, explored for their business opportunities. The company worked on a Rs 5,000-crore project to set up a joint venture company for transporting LNG for its proposed LNG terminal, which was expected to come up at either Pipavav or Mundra in western Gujarat. The companies with which GSPC tried for a tie - ups with GE Shipping, Varun Shipping on a joint venture node. The joint venture was also tried between Shipping Corporation of India and Mitsui. GSPC looked to set up an LNG shipping company, which would own LNG tankers with a capacity of 1.30 lakh to 2 lakh cubic metres and would transport LNG from liquefaction facilities to proposed terminals or LNG re-gasification terminal. The LNG ships which were LNG transport facility then, would bring LNG from the suppliers of Middle East and other countries. Then the LNG would be delivered to the existing LNG terminals as well as planned to deliver to the proposed LNG terminals at Pipavav or Mundra. The company had talks with companies that operate their own LNG carriers. GSPC also looked for a joint venture partner, which will transport all the LNG required by GSPC's proposed LNG terminal. The idea was to ensure continuous LNG supplies which would a possible if we have our own LNG transport company. GSPC invited expression of interest after finalization of the location of the proposed LNG terminal. There was an immediate requirement of about two LNG ships for 5mmtpa terminal and an increase to 6mmtpa once the LNG terminals gets fully operational. Then the the demand of natural gas in the state was expected to go up to 90mmscmd by the next three-four years. Gujarat already had two LNG terminals at Dahej and

Hazira with total capacity of 7.5 mmtpa. Post the expansion of LNG terminal at Dahej, the total capacity in State was increased to 12.5 mmtpa. A new LNG terminal was proposed at Pipavav/ Mundra with 5mmtpa capacity too.

## 5. Conclusion

India is very fortunate to have a geographic location, which is stationed strategically and is flanked by countries with abundant gas reserves on both of its sides i.e., the east and the west. India is relatively close to four of the world's top five countries in terms of proven gas reserves, viz. Iran, Qatar, Saudi Arabia and Abu Dhabi. Although the Indian shipping companies are interested in LNG transportation, the major obstacles are its (i) in – experience and (ii) the requirement of huge money for creating LNG related facilities. However, certain core problems must be dealt with before the Indian shipping industry can scale new heights.

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