

## **Project Feasibility Report (PFR)**

### **Project: Thiruvallur – Bengaluru RLNG Pipeline R-LNG Pipeline section of ETBPNMTPL**

#### **Introduction**

Indian Oil Corporation Ltd (IOCL) is pursuing development of a LNG storage & regasification terminal at Ennore with capacity expandable up to 15 MMTPA. In order to evacuate natural gas from this terminal to identified demand centers failing towards south and west of Ennore, synchronized commission of natural gas pipeline is essential with the states of Tamil Nadu, Karnataka & Andhra Pradesh.

For evacuation of gas and distribution of the same to various demand centers in the southern region of India (Tamil Nadu), Expression of Interest (EoI) was submitted by IOCL in January 2013 to Petroleum & Natural Gas Regulatory Board (PNGRB) for laying cross-country gas pipeline connecting Ennore Terminal to Puducherry, Tuticorin, Trichy, Madurai, Chittoor, Bengaluru etc. areas. This proposed pipeline would supply gas to major industries in energy starved region of southern India, particularly in Tamil Nadu and some parts of Karnataka and Andhra Pradesh. The project is expected to aid further industrial growth in the region.

The Gas will be transported through pipeline from Ennore LNG terminal for this section

Petroleum & Natural Gas Regulatory Board (PNGRB) has authorized IOCL for laying, building, operating or expanding aforesaid natural gas pipeline vide Letter of Authorization no. Infra/PL/NGPL/BID/ETBPNMTPL/01/2015 dated 10.12.2015.

The initial capacity of the line will be at least 35 MMSCMD expandable up to 84.67 MMSCMD in 25 years considering the available gas sources along the proposed route of the pipeline. Dispatch/Receipt terminals, Sectionalizing valves (SV), intermediate pigging stations (IPS), tap-off points and compressor stations will be provided en-route pipeline.

The pipeline will be supplying RLNG to category of customers namely anchor customer and city gas Distribution networks. In all total demand, major demand centers in the form of large industrial units (anchor industrial loads), other industrial agglomerations, various segments of CGDs i.e. domestic,

commercial, automobile & industrial segments have been considered for the districts through which the proposed pipeline passes.

**Advantage:** Pipelines are superior means of transportation of petroleum products compared to other modes in terms of reliability, economy, safety, flexibility, low energy consumption, low transit losses and negligible environmental impact. Construction of pipeline linkage would also provide relief to other modes of transportation for movement of essential commodities.

### **Nature of the Project**

Indian Oil Corporation Ltd (IOCL) is planning to lay a new 16" R-LNG pipeline from Thiruvallur to Bengaluru. The proposed project would involve laying new pipeline from Thiruvallur (Tamil Nadu) to Bengaluru (Andhra Pradesh) along with associated facilities. The designed capacity of this pipeline section is 4.5 MMSCMD. The pipeline will cater to demands of R-LNG to its anchor customer's en-route.

The length of pipeline envisaged is 311 kms pipeline (281 km-mainline and 30 kms- spurline) from Thiruvallur (Tamil Nadu) to Bengaluru (Karnataka) along with associated facilities. The pipeline shall traverse through states of Tamil Nadu, Andhra Pradesh and Karnataka.

### **System Configuration**

The proposal of laying the proposed branch pipeline system would broadly involve the following activities.

- ❖ 281 km of mainline (16" dia pipeline) along with connectivity to anchor customers through 30 km ( 6" dia Spurline)
- ❖ Connectivity with Sectionalizing valves, intermediate pigging stations
- ❖ Tap-off points for anchor customer en-route.
- ❖ Installation of custody transfer metering facilities for anchor customers at their premises
- ❖ Associated pipeline facilities at anchor customers
- ❖ Connectivity with ETBPNMTPL gas pipeline at Thiruvallur (Tap off)

### **Land form, Land use and Land ownership**

Pipeline will be laid in through common RoW and acquisition of Right-of use (ROU) .Ownership will remain with land owner. Provision of land acquisition/purchase has been kept only for new RCP/SV stations along the mainline route. Land acquisition/purchase has been envisaged for Scrapper station. The proposed pipeline will pass from number of roads, state highway,

rivers/canals, Agricultural land etc. There are no rehabilitation and resettlement (R&R) issues

### **Mainline Route**

This section of Pipeline branches from the Ennore to Trichy section of ETBPNMTPL in Thiruvallur district and follows the common ROW of existing Chennai – Bengaluru pipeline product pipeline upto Devanagonthi for a length of about 261 km after which it takes new ROW for a length of about 20 km till Sarjapur. This section of pipeline has a spurline for a length of about 30 km which will deliver R-LNG to the anchor customers located in Vellore. The Pipeline passes through Thiruvallur and Vellore districts of Tamil Nadu, Chittoor district of Andhra Pradesh and Kolar and Bengaluru rural districts of Karnataka.

- Length of Pipeline: Mainline -281 km
- Spurline –30 km

The pipeline would be provided motor operated sectionalized valves (SV) at regular intervals all along the pipeline route including providing additional sectionalized valves in one side each major river / canal crossings with a provision of NRV on the other side. Sectionalized block valves has been considered as per the provisions of OISD-214, which are based on population density index survey along the pipeline route

### **Operation Philosophy**

RLNG will be taken from Ennore LNG terminal and tapped from Ennore-Trichy section of ETBPNMTPL at Thiruvallur and further transported for delivery to Anchor customers en-route and terminate at Delivery of RLNG to anchor customer will be based on their individual requirements.

### **Project Schedule & Cost Estimates**

The project is scheduled to be completed in a period of 36 months from the date of receipt of authorization from PNGRB.

The estimate cost of laying new Ramanathapuram-Tuticorin RLNG Pipeline section of ETBPNMTPL project is Rs 720 Crore.

**Statutory Clearances**

Suitable action will be taken for obtaining environmental and forest clearance and other statutory clearances for the proposed pipeline system from the concerned authorities, as applicable.

**Conclusions and Recommendations**

This pipeline will ensure cost-effective transportation and uninterrupted supply of RLNG to anchor customer's enroute. The project is also a part of the proposed National gas pipeline Grid of Government of India.

\*\*\*\*\*