“PRE-FEASIBILITY REPORT OF JAIPUR-PANIPAT NAPHTHA PIPELINE”

PROJECT PROponent
M/S. INDIAN OIL CORPORATION LTD., PIPELINE DIVISION NOIDA-201301

Prepared By
MANTEC CONSULTANTS PVT. LTD.
QCI/NABET Accredited EIA Consultant at S.No.101 as per List of Accredited consultant Organizations/Rev.35/Oct. 08, 2015 and MoEF & NABL approved Laboratory

805, Vishal Bhawan, 95 Nehru Place, New Delhi-110019, PH. 011-26429294/95, Fax. 011-26463665/26842531, E-mail: mantec@vsnl.com,
Environment Division, D-36, Sector-6, Noida-201 301, U. P., Ph. 0120-4215000, 0120-4215807 Fax. 0120-4215809,
E-mail: environment@mantecconsultants.com
Website: www.mantecconsultants.com
**Table of Contents**

1 EXECUTIVE SUMMARY ........................................................................................................5
   1.1 INTRODUCTION ........................................................................................................ 5
      1.1.1 Project and project proponents ........................................................................... 5
      1.1.2 Nature of the project ....................................................................................... 5
      1.1.3 Demand supply gap ....................................................................................... 6
   1.2 PROJECT DESCRIPTION ............................................................................................ 6
      1.2.1 Location ........................................................................................................... 6
      1.2.2 Pipeline Capacities ....................................................................................... 7
   1.3 SITE ANALYSIS ......................................................................................................... 7
      1.3.1 Connectivity ....................................................................................................... 7
      1.3.2 Land form, Land use and Land ownership ....................................................... 8
      1.3.3 Topography ....................................................................................................... 8
      1.3.4 Climate of the area ......................................................................................... 8
      1.3.5 Infrastructure .................................................................................................... 8
   1.4 PLANNING BRIEF ...................................................................................................... 8
      1.4.1 Planning concept ............................................................................................... 8
      1.4.2 Population projection ....................................................................................... 9
      1.4.3 Infrastructure, amenities and facilities .............................................................. 9
   1.5 REHABILITATION AND RESETTLEMENT ................................................................ 9
   1.6 PROJECT SCHEDULE & COST ESTIMATES ............................................................... 9

2 INTRODUCTION ................................................................................................................ 10
   2.1 IDENTIFICATION OF PROJECT AND PROJECT PROпонENT ................................. 10
   2.2 BRIEF DESCRIPTION OF NATURE OF PROJECT ................................................. 10
      2.2.1 Project at a glance ......................................................................................... 10
   2.3 NEED OF THE PROJECT AND ITS IMPORTANCE .................................................. 11
   2.4 THE MAIN PURPOSE & IMPORTANCE OF THE PROJECT ...................................... 12
   2.5 DEMAND SUPPLY GAP ....................................................................................... 12

3 PROJECT DESCRIPTION .................................................................................................... 13
   3.1 TYPE OF PROJECT ................................................................................................... 13
   3.2 LOCATION ............................................................................................................... 13
   3.3 PROCESS DESCRIPTION .......................................................................................... 14
   3.4 RESOURCE OPTIMIZATION .................................................................................... 14
      3.4.1 Electricity ........................................................................................................ 14
3.5 WATER .................................................................................................................. 15
3.6 GENERATION OF WASTES ............................................................................. 15
   3.6.1 Solid & hazardous wastes ........................................................................... 15
   3.6.2 Liquid effluents ......................................................................................... 15
   3.6.3 Gaseous emissions .................................................................................... 15
3.7 INFORMATION OF EIA PURPOSE .................................................................. 15

4 SITE ANALYSIS ..................................................................................................... 18
4.1 CONNECTIVITY ................................................................................................... 18
4.2 LAND FORM, LAND USE AND LAND OWNERSHIP ...................................... 18
4.3 TOPOGRAPHY .................................................................................................... 18
4.4 EXISTING LAND USE PATTERN ..................................................................... 19
4.5 EXISTING INFRASTRUCTURE ......................................................................... 19
4.6 CLIMATE OF THE AREA ................................................................................... 19
4.7 INFRASTRUCTURE ............................................................................................. 19
   4.7.1 Telecommunication System .................................................................... 19

5 PLANNING BRIEF .................................................................................................. 20
5.1 PLANNING CONCEPT ....................................................................................... 20
5.2 POPULATION PROJECTION .......................................................................... 20
5.3 LAND USE PLANNING ..................................................................................... 20
5.4 INFRASTRUCTURE DEMAND ......................................................................... 20
   5.4.1 Physical Demand .................................................................................... 20
5.5 AMENITIES/FACILITIES ............................................................................... 21

6 PROPOSED INFRASTRUCTURE ............................................................................ 22
6.1 INDUSTRIAL AREA ............................................................................................ 22
6.2 RESIDENTIAL AREA ......................................................................................... 22
6.3 SOCIAL INFRASTRUCTURE ............................................................................. 22
6.4 DRINKING WATER MANAGEMENT ................................................................. 22
6.5 SEWERAGE SYSTEM ....................................................................................... 22
6.6 INDUSTRIAL WASTE MANAGEMENT .............................................................. 22
   6.6.1 Solid Waste Management ....................................................................... 23
   6.6.2 Waste water Management ....................................................................... 23
6.7 POWER REQUIREMENT & SUPPLY/SOURCE ............................................... 23

7 REHABILITATION AND RESETTLEMENT PLAN .............................................. 24

8 PROJECT SCHEDULE AND COST ESTIMATE ................................................... 25
8.1 PROJECT SCHEDULE ........................................................................................................... 25  
8.1.1 Pre-Project Activity ......................................................................................................... 25 
8.1.2 Project Construction ....................................................................................................... 25 
8.2 ESTIMATED PROJECTED COST ....................................................................................... 25  
9 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATION) ................................................. 26  

**TABLE**

Table 1: Detail of Employees ...................................................................................................... 12 
Table 2: Nearest City along with distance ................................................................................ 13 
Table 3: System Configuration Detail ...................................................................................... 14 
Table 4: Connectivity of Pipeline ............................................................................................. 18  

**Figure**

Figure 1: Schematic Representation of Prior Environment Clearance Process for Category A  
Project ........................................................................................................................................ 17  

**Annexure**

Annexure-1: Route Map of Proposed Jaipur-Panipat Naphtha Pipeline 
Annexure-2: Map showing 10km radius Environment Sensitivity along with Pipeline
1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Considering the higher capacity utilization of Naphtha at Panipat Naphtha Cracker Plant (PNCP) which is not met from the Mathura refinery as well as Panipat refinery hence requirement of naphtha will be met from Koyali refinery. The requirement of naphtha at Panipat refinery will be met from transportation of Naphtha from Koyali refinery through Koyali-Sanganer pipeline (KSPL) and laying of additional new 340 km pipeline from Mohanpura (Rajasthan) to Panipat refinery. Earlier Naphtha was transported from Koyali to Panipat through railway wagons.

1.1.1 Project and project proponents

Indian Oil Corporation Limited, a fortune ‘Global 500’ company, is a leading public sector undertaking (PSU) engaged in refining, transportation and marketing of petroleum products across the country. Pipelines division of IOCL owns and operates over 11,214 kms of cross country pipeline for transportation of crude oil, LPG, Naphtha and finished petroleum products across the country. Transportation through pipeline is the safest mode of transportation in comparison to other modes of transportation i.e. rail and roads. It is highly reliable, environment friendly, energy efficient and cost efficient.

1.1.2 Nature of the project

The proposed project will transfer Naphtha from Koyali refinery to Panipat refinery, The annual requirement of Naphtha at Panipat refinery for Panipat Naphtha Cracker Plant (PNCP) is 2900 TMT, for this partial requirement is met through naphtha available at Panipat refinery, and certain requirement from Mathura refinery and remaining 800 TMT of naphtha will be met from Koyali refinery through pipeline transportation.

The proposed project involves laying of 340 km long pipeline. All the facilities of pumping station like fire fighting, electrical system, Pump house, Pipeline etc. will comply with OISD standards, national and international codes and M.B. Lal committee recommendations.
Other facilities like administrative building, first-aid post, bore-wells, DG Set, etc. are also included in the project. The pipeline layout is attached as Annexure-1.

1.1.3 Demand supply gap

The demand and supply of Naphtha in Panipat refinery has increased for the Panipat Naphtha Cracker Plant (PNCP). The proposed project will transportation naphtha of around 800 TMT from due to the high demand of Naphtha at Panipat Naphtha Cracker Plant which is presently met by transportation of Naphtha through Rail wagons from Koyali refinery.

Employment generation

The manpower requirement would be 58 during construction and 29 during operation of the pipeline, which will be met through internal deployment as well as by induction of competent personnel, who will be trained suitably. Additional manpower required during construction phase will be met through local villagers.

1.2 PROJECT DESCRIPTION

The proposed project Jaipur-Panipat pipeline system has been designed for the transport of Naphtha from Koyali to Panipat for long term basis. The requirement of naphtha at Panipat refinery will be met from augmentation of Koyali-Sanganer Pipeline (KSPL) and laying new 340 km pipeline from Mohanpura (Rajasthan) to Panipat refinery. The proposed pipeline will originate at Jaipur (Mohanpura), would reach the existing right-of-way (RoW) of KSPL through a new 20 km hook up line and then follow the same RoW to reach Sanganer. After Sanganer, it would run parallel to the existing Sanganer-Panipat section of Mundra-Panipat crude oil pipeline up to Panipat, for a length of approximately 340 km and terminate at the existing Panipat refinery.

1.2.1 Location

The proposed naphtha pipeline will originate at Mohanpura(Jaipur), would reach the existing right-of-way(RoW) of KSPL through a new 20-km hook up line and would then follow the same RoW to reach Sanganer. After Sanganer, it would run parallel to the
existing Sanganer-Panipat section of Mundra-Panipat crude oil pipeline up to Panipat, for a length of approximately 340 km and terminate at existing Panipat station.

### 1.2.2 Pipeline Capacities

The capacity of the pipeline will be 8000 hr/yr. Overall 800 TMT naphtha will be transported from Koyali to Panipat. The proposed naphtha pipeline is used for the long term basis to deliver the naphtha to Panipat.

### 1.3 SITE ANALYSIS

The pipeline will originate from district Phagi (Rajasthan) starting point is Mohanpura pumping station and end point is Panipat Naphtha Cracker Plant. Augmentation work will carried out at already existing stations i.e Koyali, Viramgam, Kot and Sidhpur. The proposed naphtha pipeline will pass from number of rivers/canals; Agricultural land etc. there is no Rehabilitation and Resettlement (R&R) issues.

### 1.3.1 Connectivity

The pipeline route is well connected to rail and road ways.

**Jaipur-**

Sanganer Railway Station: Approx. 9.5 km, N-W (by road) from pipeline Near Sitapura.

Jaipur Airport: Approx. 4.56 km, N-w (by road) from pipeline nearest point Near Pratap Nagar Jaipur.

**Rewari-**

Rewari Junction: Approx. 3.6 km, E (by road) from pipeline nearest point Kutabpur.

Indira Gandhi International Airport: Approx. 71 km, N-E (by road) from pipeline nearest point Rewari Pumping station.

**Panipat-**

Panipat Railway Station: Approx. 10.97 km, E (by road) from pipeline nearest point Untla.

Indira Gandhi International Airport: Approx. 124 km, S (by road) from pipeline nearest point Panipat Refinery.
1.3.2 Land form, Land use and Land ownership

The land use at stations is flat and land use of pipeline is varying from flat to simple terrain. The pipeline will crosses many rivers/ canals, agricultural land etc. after laying the pipeline the RoW of the agricultural land will be used for agricultural purpose. The pipeline would be partially laid in existing RoW of IOCL and rest in additional acquired RoW. The compensation of agricultural crop and for acquired ROW will be given to the farmers during construction of pipeline. The owner of the stations (Mohanpura, Sanganer, Rewari and Panipat) is IOCL.

1.3.3 Topography

The proposed pipeline will go through Rajasthan and Haryana state. Pumping stations, Jaipur station, Rewari station and Panipat refinery, all the refinery and stations located in the flat plain of the state, Rajasthan and Haryana. The average elevation of the sites Jaipur, Rewari, Panipat would be 329-333 m, 230-263 m, 237-248 m respectively.

1.3.4 Climate of the area

The climate of the area is characterized by hot summer, cold winter and rainfall. The maximum temperature of Jaipur, Rewari, Panipat during summer is approximately 43.4\(^{\circ}\)C, 41\(^{\circ}\)C and 45\(^{\circ}\)C respectively and during winter season the minimum temperature approximately 4\(^{\circ}\)C, 5.6\(^{\circ}\)C and 6.7\(^{\circ}\)C respectively.

1.3.5 Infrastructure

The civil structures are provided like shelter to men and machinery, pump shed, booster sheds have been planned to be steel structure, RCC civil structures have been planned.

1.4 PLANNING BRIEF

Planning of the construction of naphtha pipeline is given in the following sub section-

1.4.1 Planning concept

The proposed pipeline planned to cater the demand of naphtha in Panipat refinery from Jaipur (Mohanpura Station). The naphtha will be required for Panipat Naphtha Cracker.
Plant (PNCP). Naphtha will be pumped from Jaipur and same will be transported from Koyali refinery to Panipat refinery.

1.4.2 Population projection

Population projection will be carried out from censes data 2011. Details will be provided in EIA report.

1.4.3 Infrastructure, amenities and facilities

Infrastructure, amenities and facilities required for construction and operation of pipeline and facilities have been determined and provided in the project area.

1.5 REHABILITATION AND RESETTLEMENT

The proposed pipeline will be routed through existing RoW of MPPL (Mundra Panipat Pipeline) and additional RoW acquired. Mostly the RoW travels through agricultural land hence no R&R envisaged.

1.6 PROJECT SCHEDULE & COST ESTIMATES

Construction activities will start after all statutory clearances, including environmental clearance of the project. Total time schedule for the project is 30 months after receipt of statutory clearance.

Total cost of the proposed project is estimated as Rs. 611.53 Crore including foreign exchange of Rs.18.85 Crore, at December 2014 price level.
2 INTRODUCTION

2.1 IDENTIFICATION OF PROJECT AND PROJECT PROPOONENT

Indian Oil Corporation Limited, a fortune ‘Global 500’ company, with sales turnover of Rs. 4,50,756 crore and profits of Rs. 5,273 crore for the year 2014-15, is a leading public sector undertaking (PSU) engaged in refining, transportation and marketing of petroleum products across the country. Pipelines division of IOCL owns and operates over 11,241 kms of cross country pipeline for transportation of crude oil, LPG, Naphtha and finished petroleum products across the country. Pipeline for transportation of crude oil and finished petroleum products to various consumption centers. Transportation through pipeline is the safest mode of transportation in comparison to other modes of transportation i.e. rail and roads. It is highly reliable, environment friendly, energy efficient and cost efficient.

As an integrated oil company with refineries, marketing terminals/depots and retail outlets, IOCL is playing a significant role in the nation’s economic development and growth.

The proposed pipeline project envisaged to cater demand of naphtha in Panipat refinery transported from Koyali refinery via origination point of pipeline in Jaipur (Mohanpura station).

2.2 BRIEF DESCRIPTION OF NATURE OF PROJECT

The description of the proposed naphtha pipeline is as follows-

2.2.1 Project at a glance

Naphtha will be required for the Naphtha Cracker Plant. The pre-treated naphtha will be utilized as feed for both Paraxylene (PX) and Naphtha Cracker Plant at Panipat Refinery.

The proposed pipeline will originate at Jaipur (Mohanpura), would reach the existing right-of-way (RoW) of KSPL through a new 20km hook up line and then follow the same RoW to reach Sanganer. After Sanganer, it would run parallel to the existing Sanganer-Panipat section of Mundra-Panipat crude oil pipeline up to Panipat, for a length of
approximately 340 km and terminate at the existing Panipat refinery. Earlier Naphtha was transported from Koyali to Panipat through railway wagons.

**Jaipur-Panipat naphtha pipeline system broadly comprises the following.**

- Utilizing existing 20 km long, 18” OD x 0.25” WT, API 5L-X65 grade pipeline section of KSPL in-between Mohanpura and Sanganer
- Laying 340 km long, 10.75” OD x 0.25” WT, API 5L-X46 grade pipeline from Sanganer to Panipat
- 3 (2+1) motor-driven Mainline Pumping Units (MLPUs) of adequate capacity at Mohanpura
- Scraper facilities at Mohanpura (Jaipur), Sanganer (Jaipur) and Rewari
- Line Balancing Tanks (LBTs), each of 42,000 kl nominal capacity, at Mohanpura
- Multi-product pumping and receipt facility at Mohanpura and Panipat

The facilities required for operation of the project, viz., pumping units with associated facilities have been planned to be steel structure. Other facilities like RCC civil structure have been planned to accommodate control panels, HT/LT panels, Batteries etc. All the safety factors like wind load, seismic load, soil bearing capacity etc have been taken into account while designing the civil structures.

The route map of proposed pipeline is attached as **Annexure-1.**

**2.3 NEED OF THE PROJECT AND ITS IMPORTANCE**

The annual requirement of naphtha at Panipat refinery for Paraxylene (PX) unit and Panipat Naphtha Cracker Plant (PNCP) is about 500 TMT and 2300 TMT respectively. The demand and supply of Naphtha in Panipat refinery has increased for the Panipat Naphtha Cracker Plant (PNCP) is 800 TMT. The proposed project is for the transportation of naphtha 800 TMT from due to the high demand of Naphtha at Panipat Naphtha Cracker Plant.

The transportation of naphtha requirement can be met either by rail or pipeline. Road transportation has not been considered since the volume involved is large and the distance is also substantial.
2.4 THE MAIN PURPOSE & IMPORTANCE OF THE PROJECT

The main purpose of the project is as follows-

- The Naphtha will be required for the Naphtha Cracker Plant at Panipat refinery.
- Cost of the transportation of naphtha through pipeline will be low as compared to rail and road.
- The pipeline will cater the requirement of naphtha in Panipat refinery from Jaipur (Mohanpura) to Panipat refinery.
- The transit losses of transportation of naphtha through rail will be eliminated through pipeline transportation.
- The proposed project have significant role in transportation of naphtha viz. safety, reliability, less energy consumption, environment friendly.

2.5 DEMAND SUPPLY GAP

Proposed project will manage the demand supply gap of the naphtha in Panipat refinery Panipat Naphtha Cracker Plant (PNCP).

The demand and supply of Naphtha in Panipat refinery has increased for the Panipat Naphtha Cracker Plant (PNCP) is 800 TMT. The proposed project is for the transportation of naphtha 800 TMT from due to the high demand of Naphtha at Panipat Naphtha Cracker Plant.

EMPLOYMENT GENERATION

The workers required during construction phase will be met through internal deployment as well as by induction of competent personnel, who will be trained suitably. The details of employment are as given below in Table-1.

Table 1: Detail of Employees

<table>
<thead>
<tr>
<th>No. of Employee</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>Construction Phase of Pipeline</td>
</tr>
<tr>
<td>29</td>
<td>Operational Phase of Pipeline</td>
</tr>
</tbody>
</table>
3 PROJECT DESCRIPTION

3.1 TYPE OF PROJECT

The project pertains to establishment of pipeline for transportation of naphtha from Koyali refinery to Panipat refinery. The naphtha will be transported from Koyali refinery via origination point Mohanpura with scrapper facility. Other scrapper facility will be located at Sanganer and Rewari.

The proposed Mohanpura-Panipat pipeline system has been designed so as to optimally transport naphtha from Jaipur to Panipat on long-term basis. It may also be noted that provision for multi-product pumping (MS,SKO and HSD) in this pipeline has also been kept for feeding Panipat refinery fed areas in case of any exigency at Panipat refinery.

3.2 LOCATION

The proposed naphtha pipeline will originate at Mohanpura(Jaipur), would reach the existing right-of-way(RoW) of KSPL through a new 20-km hook up line and would then follow the same RoW to reach Sanganer. After Sanganer, it would run parallel to the existing Sanganer-Panipat section of Mundra-Panipat crude oil pipeline up to Panipat, for a length of approximately 340 km and terminate at existing Panipat station. Naphtha would be transported from Koyali refinery to Jaipur through the existing KSPL pipeline.

The stations are located at Mohanpura (Jaipur), Rewari, Panipat refinery. Nearest city from the stations/refinery is given in Table-2.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Station/refinery</th>
<th>Nearest city name and distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mohanpura Station</td>
<td>Jaipur, Approx. 40 km, N-E</td>
</tr>
<tr>
<td>2.</td>
<td>Rewari Station</td>
<td>Rewari, Approx. 9 km, N-E</td>
</tr>
<tr>
<td>3.</td>
<td>Panipat Refinery</td>
<td>Panipat, Approx. 13 km, S-E</td>
</tr>
</tbody>
</table>

Environmental sensitivity map showing 10km radius is attached as Annexure-2.
3.3 PROCESS DESCRIPTION

The naphtha will be delivered from Koyali refinery via Mohanpura to cater the requirement of naphtha in Panipat refinery for Panipat Naphtha Cracker Plant. The pipeline has been designed for long term basis. The pipeline system will be using 10.75” OD x 0.25” WT optimum size of pipeline for the proposed project. The pipeline would cross a number of rivers/canals, roads, railway tracks and agricultural land. The pipeline will be installed by using HDD (Horizontal Directional Drilling) technique for major rivers/canals and submerged crossing method will be preferred for minor rivers/canals.

The higher wall thickness pipes will be envisaged to be laid across major rivers/canals, water course etc. The wall thickness of pipe will be same as main line at rail and road crossings.

System configuration detail is given in Table-3.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Parameter</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Length of Pipeline</td>
<td>360 km</td>
</tr>
<tr>
<td>2.</td>
<td>Flow rate</td>
<td>205 KL/Hr.</td>
</tr>
</tbody>
</table>

**Line Size**

| 3.    | Mohanpura (Jaipur)-Sanganer (20 kms) | 18” OD X 0.25” WT, API 5L-X65 Grade        |
| 4.    | Sanganer-Panipat (340 kms)           | 10.75” OD X 0.25” WT, API 5L-X46 Grade     |

**MAOP (MCL)**

| 5.    | Mohanpura-Sanganer             | 1235 mcl (91.3 kg/cm²)                      |
| 6.    | Sanganer- Panipat              | 1337 mol (99 kg/cm²)                        |

3.4 RESOURCE OPTIMIZATION

3.4.1 Electricity

The power supply will be met through 33 KV grid power supply from Jaipur. 33/6.6 KV switchyard has been envisaged for extending 6.6 KV power supply to MLPUs. Other facilities are as follows-
• Automatic power factor controller with requisite capacitor banks would be provided for improving power factor in PMCC panel.

• One 2 MVA, 6.6 KV DG set is also envisaged at Jaipur for booster motor and mainline pumping unit.

• A new MCC panel, with one incomer, would be installed at Panipat for extending power to the new facilities viz. MOV, Sump motor, PCV etc.

3.5 WATER

The water will be utilized as domestic purposes by workers during construction phase along with pipeline, which will be met from tanker supply. During operational phase, there will be no water requirement.

3.6 GENERATION OF WASTES

3.6.1 Solid & hazardous wastes

The solid and hazardous waste will not generate. Project belongs to transportation of Naphtha through pipeline.

3.6.2 Liquid effluents

Very small quantity of domestic waste will be generated during construction phase there will be provision for disposal of domestic effluent into septic tanks followed by soak pit.

3.6.3 Gaseous emissions

The gaseous Emissions would be due to the DG set operation at the stations. The emission from DG sets will be kept within the prescribed limit of the SPCB/CPCB which will be released through adequate height stack.

3.7 INFORMATION OF EIA PURPOSE

As per the EIA Notification 2006 of Ministry of Environment, Forests and climate change, Government of India and lastly amended on 2000, the transportation of petroleum product through pipeline has to obtain prior environmental clearance. The proposed project is covered under Category 6 (a) (Oil & gas transportation pipe line (Crude and refinery/Petrochemical products) passing through National
parks/Sanctuaries/Coral reefs/ecologically sensitive areas) as per the Schedule of EIA Notification.

Due to Nahargarh wild life sanctuary falls within 10 km radius of the pipeline and no eco-sensitive area declared for the Nahargarh wls hence the propose project will go for the proper environmental clearance.

The process for obtaining Environmental Clearance for the proposed project as per EIA Notification-2006 is given in Figure-1.
Figure 1: Schematic Representation of Prior Environment Clearance Process for Category A Project
4 SITE ANALYSIS

4.1 CONNECTIVITY

The proposed pipeline project will be easily approachable. The connectivity of pipeline is given in Table-4.

Table 4: Connectivity of Pipeline

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Location Station/pipeline point</th>
<th>Railway station name &amp; Distance</th>
<th>Airport name &amp; Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jaipur</td>
<td>Approx. 9.5 km, N-W (by road) from pipeline Near Sitapura.</td>
<td>Approx. 4.56 km, N-W (by road) from pipeline nearest point Near Pratap Nagar Jaipur.</td>
</tr>
<tr>
<td>2.</td>
<td>Rewari</td>
<td>Approx. 3.6 km, E (by road) from pipeline nearest point Kutabpur.</td>
<td>Approx. 71 km, N-E (by road) from pipeline nearest point Rewari Pumping station.</td>
</tr>
<tr>
<td>3.</td>
<td>Panipat</td>
<td>Approx. 10.97 km, E (by road) from pipeline nearest point Untla.</td>
<td>Approx. 124 km, S (by road) from pipeline nearest point Panipat Refinery.</td>
</tr>
</tbody>
</table>

4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

The land use at stations is flat and land use of pipeline is varying from flat to simple terrain. The pipeline will crosses many rivers/ canals, agricultural land etc. after laying the pipeline the RoW of the agricultural land will be used for agricultural purpose. The pipeline would be partially laid in existing RoW of IOCL and rest in additional acquired RoW. The compensation of agricultural crop and for acquired ROW will be given to the farmers during construction of pipeline. The owner of the stations (Mohanpura, Sanganer ,Rewari and Panipat) is IOCL.

4.3 TOPOGRAPHY

The proposed pipeline will go through Rajasthan and Haryana state. Pumping stations is at, Jaipur station, Rewari station and Panipat refinery. All the refinery and stations located in the flat plain of the state Rajasthan and Haryana. The average elevation of the sites Jaipur, Rewari, Panipat would be, 329-333 m, 230-263 m, 237-248 m respectively.
4.4 EXISTING LAND USE PATTERN

Existing land use pattern of the station/refinery is simple flat.

The proposed pipeline will cross a number of major and minor river/canals, agricultural land, road and railway tracks.

4.5 EXISTING INFRASTRUCTURE

Naphtha would be transported in batches from Koyali to Jaipur through the existing KSPL, delivered to line balancing tanks(LBTs) at Jaipur and pumped towards Panipat through existing MPPL(Mundra Panipat Pipeline).

4.6 CLIMATE OF THE AREA

The climate of the area is characterized by hot summer, cold winter and rainfall. The maximum temperature of Jaipur, Rewari, Panipat during summer is approximately 43.4°C, 41°C and 45°C respectively and during winter season the minimum temperature approximately 4°C, 5.6°C and 6.7°C respectively.

4.7 INFRASTRUCTURE

The civil structures are provided like shelter to men and machinery, pump shed, booster sheds have been planned to be steel structure, RCC civil structures have been planned. The other infrastructure facility as follows-

4.7.1 Telecommunication System

The salient features of the telecommunication system envisaged for Jaipur-Panipat Pipeline are as given below-

- Optical fiber cable (OFC) has been considered for Mohanpura-Panipat section.
- Telecommunication system being deployed under SMPL debottlenecking project will be utilized. Hence, no new backbone telecommunication system has been considered.
- CCTV surveillance system has been considered for the new facilities including RCP & SV/MOV stations.
5 PLANNING BRIEF

5.1 PLANNING CONCEPT

The proposed pipeline planned to cater the demand of naphtha in Panipat refinery from Mohanpura (Jaipur) Station. The naphtha will be required for Panipat Naphtha Cracker Plant (PNCP). Naphtha will be pumped from Jaipur and same will be transported from Koyali refinery to Panipat refinery. The power supply would be through 33 KV power grid at Jaipur.

In case of failure of grid power, one 2 MVA, 6.6 KV DG set is also envisaged at Jaipur for Booster motor and Mainline pumping unit.

5.2 POPULATION PROJECTION

Population projection will be carried out from Sensex data 2011. Details will be provided in EIA report.

5.3 LAND USE PLANNING

Land use pattern of the project area is not affected by the proposed project, as the proposed project is the transportation of naphtha through pipeline to Panipat refinery from Mohanpura (Jaipur). The land acquired construction of pipeline, the crop compensation will be given to farmer of respective land, after construction, the land will be utilized by farmer for agriculture purpose. There will be no adverse impact on land.

5.4 INFRASTRUCTURE DEMAND

5.4.1 Physical Demand

**Land:** The existing RoW will be utilized for the laying of pipeline. After laying the pipeline the existing agricultural land will utilized for the agricultural purpose.

**Water:** The Water will be required for the domestic purpose for workers during construction phase only which will be met from the tanker supply, no water required during operational phase.

**Energy:** 33 KV power supply met from power grid at Jaipur. When the grid power failure, one 2 MVA, 6.6 KV DG set for Booster Motor and Mainline Pumping Unit.
**Construction Schedule:** The proposed pipeline scheme is expected to be completed in a period of 30 months after getting statutory clearance.

### 5.5 AMENITIES/FACILITIES

The pumping station has mainline pumping units, Pump shed, Booster Shed, VFD (Variable Frequency Drive), Control panels, MCC panels, HT/LT panels, batteries etc. Other safety facility of the safety factors like wind load, seismic load, soil bearing capacity etc have taken into account while designing the civil structures. Clean drinking water, rest shelter etc will be provided within the station premises.
6  PROPOSED INFRASTRUCTURE

6.1  INDUSTRIAL AREA

Infrastructure for the project is as follows-

a) Laying of pipeline from Mohanpura (Jaipur) to Panipat
b) Motor driven pumps, scraper facilities, Line balancing tank at stations.

6.2  RESIDENTIAL AREA

The residential area is far away from the station/refinery. The employees and workers would be come from nearby areas.

6.3  SOCIAL INFRASTRUCTURE

Well developed social infrastructure available around the pipeline. Hospital, School, well connectivity of road and railway stations is available around the pipeline and pumping stations.

6.4  DRINKING WATER MANAGEMENT

The water will be required for drinking and domestic purposes during construction phase of pipeline which will be met from the tanker supply. No water will be required during operational phase. At the station/refinery, the water is available for drinking water purposes.

6.5  SEWERAGE SYSTEM

During construction phase septic tanks would be provided for construction workers, the domestic waste will be treated in septic tanks followed by soak pit.

At stations septic tanks are available the domestic waste would be treated in the existing septic tanks, followed by disposal in soak pits.

6.6  INDUSTRIAL WASTE MANAGEMENT

The industrial waste management is as follows-
6.6.1 Solid Waste Management

No solid waste will generate. The project belongs to transportation of naphtha through pipeline.

6.6.2 Waste water Management

No waste water will generate due to project activity.

6.7 POWER REQUIREMENT & SUPPLY/SOURCE

The details of power supply is as follows-

- At Jaipur, the existing 33 KV grid power supply would be used. A separate 33/6.6 KV switchyard has been envisaged for extending 6.6 KV power supply to MLPUs (Mainline Pumping Units). Separate LT transformer is envisaged for distributing power supply to various LT loads including Booster Motor.

- One 2 MVA, 6.6 KV DG set is also envisaged at Jaipur for Booster Motor and Mainline Pumping Unit.

- Automatic Power factor controller with requisite capacitor banks would be provided for improving power factor in PMCC panel.

- A new MCC panel, with one incomer, would be installed at Panipat for extending power to the new facilities as MOV, sump motor, PCV etc.

The electrical installation in the classified area will be in line with the classification for hazardous environment.
7 REHABILITATION AND RESETTLEMENT PLAN

The proposed pipeline will be routed through existing RoW of MPPL (Mundra Panipat Pipeline) and additional RoW acquired. Mostly the RoW travels through agricultural land hence no R&R envisaged.
8  PROJECT SCHEDULE AND COST ESTIMATE

8.1  PROJECT SCHEDULE

The proposed pipeline scheme is expected to be completed in a period of 30 months after receipt of statutory clearance.

8.1.1  Pre-Project Activity

Statutory clearance (EC, FC & Wildlife clearance) is the main pre-project activity.

8.1.2  Project Construction

During construction phase, construction facility will be taken for construction. Total duration of the construction is envisaged as 30 Months and construction activity will start after getting statutory approvals.

8.2  ESTIMATED PROJECTED COST

The total project cost will be around Rs. 611.53 crore.
9 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATION)

The proposed project will provide the naphtha for Paraxylene unit and Panipat Naphtha Cracker Plant in Panipat refinery. This project involves fulfilling the demand of naphtha in Panipat refinery from Koyali refinery via originating point of the project Mohanpura(Jaipur).

The project belongs to transportation of naphtha through pipeline. The transportation of naphtha through pipeline is much efficient than road and railway. The project will be eco friendly, energy efficient, less cost of transportation.

The socio economic scenario in the region will change with positive impact on the regional socio economic pattern.

The workforce required during the construction phase, which will be depending upon construction activities. Since most of the construction activities are labor intensive, the entire required workforce will be deployed internally during construction phase of pipeline for short term basis during the construction phase of pipeline, which will give the positive impact.

The compensation will be given to farmer for laying of pipeline through respective agricultural field for short term. Overall the project will have positive impacts on socio-economic environment.
Annexure-1: Route Map of Proposed Jaipur-Panipat Naphtha Pipeline
Annexure-2: Map showing 10km radius Environment Sensitivity along with Pipeline