INDIAN OIL CORPORATION LIMITED

Pre Feasibility Report

For

Existing 3 additional above ground tanks for the storage of 1 x 2929 KL & 1 x 2933 KL HSD & 1 x 1347 KL MS

at

IOCL Akola Depot

By,

ABC Techno Labs India Private Limited

(Accredited by MoEFCC, NABL & NABET)
Website: www.abctechnolab.com
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CHAPTER 1
EXECUTIVE SUMMARY

(i) Name of project:
Environmental Clearance for Already Constructed 3 additional above ground tanks for the storage of 1 x 2929 KL & 1 x 2933 KL HSD & 1 x 1347 KL MS at IOCL Akola depot.

(ii) Location:
Project is Located at Survey no. 295,296, 298, 299, 300, 301, 310, 311, 744, 745, 476, Village Gaigaon, Tehsil Balapur, District Akola, Maharashtra – 444109.

Latitude : 20°43′21.7 "N
Longitude : 76°53′39.6 "E

(iii) Project Profile:
This Akola Depot of Indian Oil Corporation Limited is located near Gaigaon railway station at Akola Depot, Village Gaigaon, Tal. Balapur, Dist. Akola - 444109. Indian Oil Corporation Limited, Akola Depot is a marketing Division of Motor spirit, High Speed Diesel, Superior Kerosene Oil (SKO). The Depot receives HSD, MS, SKO from rail tank wagons, stores these in tanks and distributes these to retail outlets and consumers of Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded districts of Maharashtra by road tankers.

Currently, the Depot has two underground storage tanks for Ethanol and eleven above ground storage tanks for HSD, SKO and MS with varying capacity located in bunded enclosures as per the Petroleum Act requirements.

This Depot at present has total storage capacity of approximately 12520 KL of petroleum products The Depot receives stores and distributes Petroleum Products namely Motor Spirit BS IV (MS), High Speed Diesel BS IV (HSD), Superior Kerosene Oil (SKO), and Lube Oil and grease. In addition to above the Depot also handles Ethanol, which is mixed in a proportion of 10% by volume with MS for dispatches.
MS, HSD & SKO are received from IOCL Gujarat Refinery Koyali & BPC Manmad Terminal through rail tank wagons at the BG siding located south of the depot.

(iv) Resource Requirement:

Source & Quantity of Water

The source of water supply will be existing bore well.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Water Consumption in KLD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing</td>
</tr>
<tr>
<td>1</td>
<td>Processing</td>
<td>NIL</td>
</tr>
<tr>
<td>2</td>
<td>Gardening</td>
<td>2 KLD</td>
</tr>
<tr>
<td>3</td>
<td>Domestic</td>
<td>3 KLD</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5 KLD</td>
</tr>
</tbody>
</table>

Power

A total electrical load of 400 KW will be sufficient for the petroleum depot

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Power requirement</th>
<th>Capacity</th>
<th>Source</th>
<th>Fuel type &amp; Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Electricity</td>
<td>400 KW</td>
<td>MSEDCL</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>DG set</td>
<td>2 x 250 KVA</td>
<td>-</td>
<td>HSD</td>
</tr>
</tbody>
</table>
**Man Power**

- Management : 09 Nos.
- Supervisory : 12 Nos.
- Skilled : 0 Nos.
- Unskilled : 0 Nos.
- Others (Indirect) : 40 Nos.

**(v) Cost Of The Project:**

The total cost of the project will be approximately Rs. 3.93 Crores
CHAPTER 2

INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

(i) Identification of project and project proponent:
Indian Oil Corporation Limited, Akola Depot is a marketing Division of Motor spirit, High Speed Diesel, Superior Kerosene Oil (SKO). The Depot receives stores and distributes Petroleum Products namely Motor Spirit BS IV (MS), High Speed Diesel BS IV (HSD) and Superior Kerosene Oil (SKO).

Indian Oil Corporation (IndianOil) is India’s largest commercial enterprise, with a sales turnover of Rs. 3,99,601 crore and profits of Rs. 10,399 crore for the year 2015-16. Indian Oil is ranked 161st among the world’s largest corporates (and first among Indian enterprises) in the prestigious Fortune ‘Global 500’ listing for the year 2016.

As India’s flagship national oil company, with a 33,000-strong work-force currently, IndianOil has been meeting India’s energy demands for over half a century. With a corporate vision to be ‘The Energy of India’ and to become ‘A globally admired company,’ IndianOil's business interests straddle the entire hydrocarbon value-chain – from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil & gas, marketing of natural gas and petrochemicals, besides forays into alternative energy and globalisation of downstream operations..

(ii) Brief description of nature of the project:
The petroleum depot at Akola, Maharashtra is used for storage and distribution of Motor spirit, High Speed Diesel, Superior Kerosene Oil (SKO). The major activities of the depot will be as below:
a) Receipt of products through tank wagons and store in above ground tanks & Underground tanks.

b) Blending of high performance petrol and diesel.

c) Filling of different products in tank lorries and distributed to retail outlets and consumers of Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded districts of Maharashtra.

(iii) **Need for the project and its importance to country and or region:**

Indian Oil Corporation Ltd., a major Public Sector Oil Company under overall administrative control of the Ministry of Petroleum and Natural Gas, Govt. of India. To cater to growing petroleum product demand in markets attached with Akola Depot. The additional three tanks which are constructed are to meet additional petroleum demand of areas attached with IOCL Akola depot.

(vi) **Demand-Supply gap**

The depot once established would be in a position to cater to the demand of a wide range of essential petroleum products in the adjoining districts (i.e. Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded)

(v) **Employment Generation**

The depot will be run by IOCL itself with its own staff – management, clerical and labour staff, presently working in the existing depot. The present employee strength is as below:

- Management : 09 Nos.
- Supervisory : 12 Nos.
- Skilled : 0 Nos.
- Unskilled : 0 Nos.
- Others( Indirect) : 40 Nos.
Chapter 3

PROJECT DESCRIPTION

(i) Type of project

As per EIA Notification dated 14 Sep 2006 this projects falls under 6 (b) category i.e. for isolated storage & handling of hazardous chemicals. The project consists Construction of 3 additional above ground tanks for the storage of 1 x 2929 KL & 1 x 2933 KL HSD & 1 x 1347 KL MS at IOCL Akola depot.
(ii) **Location**

The project is located at Village Gaigaon, Tehsil Balapur, District Akola, Maharashtra – 444109. The approach road (Shegaon road) is connected to NH 6 (Mumbai to Kolkata National Highway) at about 10 KM from the depot on the eastern side.

![Fig.no.1: Site Location](image-url)
**Fig. no. 2: Google Image of the Project Site**
Fig. no.3: Site Connectivity
(iii) **Size or magnitude of operation**

The Depot is established on a 1,87,500 m² land. The oil depot is having modern high-tech facilities conforming to international standards besides complying to Oil Industry Safety Directorate standards. The depot will be provided with all modern fire-fighting facilities as per OISD standards.

(iv) **Project description**

The petroleum depot at Akola, Maharashtra is used for storage and distribution of Motor spirit, High Speed Diesel, Superior Kerosene Oil (SKO). The major activities of the depot will be as below:

a) Receipt of products through tank wagons and store in above ground tanks & Underground tanks.

b) Blending of high performance petrol and diesel.

c) Filling of different products in tank lorries and distributed to retail outlets and consumers of Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded districts of Maharashtra.

### Table no.2: Details of Constructed tanks at Akola Depot

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Chemical</th>
<th>Physical state</th>
<th>Tank No.</th>
<th>Number of storage tanks</th>
<th>Capacity of Storage Tank (KL) each</th>
<th>Type of Storage Tank*</th>
<th>Tank Height (m)</th>
<th>Tank Dia (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HSD</td>
<td>LIQUID</td>
<td>T012,T013</td>
<td>2</td>
<td>1 of 2929KL, 1 of 2933KL</td>
<td>A/G</td>
<td>2 of 15m</td>
<td>2 of 16m</td>
</tr>
<tr>
<td>2</td>
<td>MS</td>
<td>LIQUID</td>
<td>T011</td>
<td>1</td>
<td>1 of 1347KL</td>
<td>A/G</td>
<td>1 of 8 m</td>
<td>1 of 16m</td>
</tr>
</tbody>
</table>
Fig.no.3: Layout Plan
(v) Raw material requirement

The depot has facility to store MS, HSD, SKO & Ethanol. Looking at the demand from the market 3 additional tanks have been constructed for the storage of MS & HSD. These are received through tank wagons, manufacture the high performance motor spirit-SPEED using motor spirit and imported additives, premium grade diesel oil using HSD and imported additives.

(vi) Water requirement

The source of water supply will be from bore well which will be installed under the project.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Water Consumption in KLD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing</td>
</tr>
<tr>
<td>1</td>
<td>Processing</td>
<td>NIL</td>
</tr>
<tr>
<td>2</td>
<td>Gardening</td>
<td>2KLD</td>
</tr>
<tr>
<td>3</td>
<td>Domestic</td>
<td>3KLD</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>5KLD</strong></td>
</tr>
</tbody>
</table>

(vii) Power requirement

A total electrical load of 400 KW will be sufficient for the depot.

The power supply will be obtained from MSEDCL (Maharashtra State Electricity Distribution Company Limited). However, backup power through 2 nos. of DG sets 250 KVA will also be provided.
CHAPTER 4
SITE ANALYSIS

(i) Connectivity
This Akola Depot of Indian Oil Corporation Limited is located near Gaigaon railway station at Akola Depot, Village Gaigaon, Tal. Balapur, Dist. Akola - 444109. The nearest railway station is Gaigaon Railway Station. The Depot is located near Gaigaon railway station on Shegaon road. It is about 1 KM from Gaigaon village and 15 KM from Akola. The approach road (Shegaon road) is connected to NH 6 (Mumbai to Kolkata National Highway) at about 10 KM from the depot on the eastern side.

(ii) Land use
The Depot is established on a existing 1,87,500 m² land & no additional land have been acquired for the construction of 3 additional tankages.

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Description</th>
<th>Area (Sq. m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Storage tank farm area (existing)</td>
<td>15,000.0</td>
</tr>
<tr>
<td>2</td>
<td>Storage tank farm area (additional)</td>
<td>6,500.0</td>
</tr>
<tr>
<td>3</td>
<td>Utility area</td>
<td>460.0</td>
</tr>
<tr>
<td>4</td>
<td>Administrative Building</td>
<td>240.0</td>
</tr>
<tr>
<td>5</td>
<td>Other Building blocks (ex. Canteen, storage yard)</td>
<td>2,200.0</td>
</tr>
<tr>
<td>6</td>
<td>Parking</td>
<td>6,250.0</td>
</tr>
<tr>
<td>7</td>
<td>Roads</td>
<td>13,600.0</td>
</tr>
<tr>
<td>8</td>
<td>Green belt area</td>
<td>61,875.0</td>
</tr>
<tr>
<td>9</td>
<td>Fire water storage area</td>
<td>3,000.0</td>
</tr>
</tbody>
</table>
10 | Loading Unloading area (Bay) | 15000
11 | Misc ( TLF, Open space, scrap yard, lube oil, TT Parking, Officers colony etc…) | 63375

Total | 187500

(iii) **Topography**

On the north, Akola is bordered by the Melghat Hills and forest region. The Morna River flows through Akola. Purna River forms a part of the north border of the district, and the top north portion of the district lies within its watershed along with Aas River and Shahnur River. Vaan River forms a part of the northwest boundary of the district after entering from the Amravati district. Maan River drains the south-western portion of the district. Morna River drains the mid-south portion of the district, while the southeast is drained by the Katepurna and Uma rivers. It is at an altitude of 925 ft (282m) above sea level.

(iv) **Existing Land use pattern**

Existing Land use of the Depot is industrial use.

(v) **Existing infrastructure**

The Depot is established on a existing 1,87,500 m² land & no additional land have been acquired for the construction of 3 additional tankages.

The Depot receives three petroleum products namely MS, SKO, and HSD by rail wagons. It also regularly receives Ethanol by road tankers. At time, MS and HSD are received by road tankers whenever there is a problem of receipt by rail wagon.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Chemical</th>
<th>Physical state</th>
<th>Tank No.</th>
<th>Number of storage tanks</th>
<th>Capacity of Storage Tank (KL) each</th>
<th>Type of Storage Tank*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HSD</td>
<td>LIQUID</td>
<td>T001,T002,T003</td>
<td>3</td>
<td>2 of 1954KL, 1 of 2953KL</td>
<td>A/G</td>
</tr>
<tr>
<td>2</td>
<td>MS</td>
<td>LIQUID</td>
<td>T006,T007,T010</td>
<td>3</td>
<td>2 of 282KL, 1 of 1100KL</td>
<td>A/G</td>
</tr>
<tr>
<td>3</td>
<td>SKO</td>
<td>LIQUID</td>
<td>T004, T005</td>
<td>2</td>
<td>1 of 1951KL, 1 of 1954KL</td>
<td>A/G</td>
</tr>
<tr>
<td>4</td>
<td>ETHANOL</td>
<td>LIQUID</td>
<td>T008,T009</td>
<td>2</td>
<td>1 of 50KL, 1 of 70KL</td>
<td>U/G, Horizontal cylinder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional 3 Tanks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>HSD</td>
<td>LIQUID</td>
<td>T012,T013</td>
<td>2</td>
<td>1 of 2929KL, 1 of 2933KL</td>
<td>A/G</td>
</tr>
<tr>
<td>6</td>
<td>MS</td>
<td>LIQUID</td>
<td>T011</td>
<td>1</td>
<td>1 of 1347KL</td>
<td>A/G</td>
</tr>
</tbody>
</table>

There are 12 bays in TLF which are used for dispatch of MS, HSD and SKO. Currently, the Depot has a total of 14 Nos. pumps. All pumps are dedicated to a particular service.

(vi) **Soil classification**

The northern fringe of the district is hilly and forms part of Satpura Range. South of these hill ranges, covering almost entire north-central part constitutes the Alluvial plain. Southern part of the district is characterized by hilly rugged terrain as a part of Deccan Plateau. Purna is the main river flowing through the district. Other important rivers are Man, Murna and Kate.

Two types of soils have been observed in the district namely medium black soil occurring in plain central part of trap origin and deep black soil occurring in valley in northern part.
(vii) **Climatic conditions**

Historical climatological data recorded at Akola, located at 20.7° North and longitude 77.07° East. The seasonal variation of temperature follows closely the course of the sun. January is invariably the coldest month and May the warmest. Akola lies on the Tropic of Cancer and becomes very hot during the summer, especially in May. Although it can be very hot in the day, it is cooler at night. The annual rainfall averages 800 mm. Most of the rainfall occurs in the monsoon season between June and September, but some rain does fall during January and February.

The average relative humidity varies from lowest in the month of April to the highest of 78% during August. The humidity is relatively higher in the morning hours than in the evening hours. The relatively high humidity has a considerable impact on the atmosphere in reducing its variability. The relative humidity remains within 38% to 78% throughout the year.

(viii) **Social infrastructure available**

The Depot is located near Gaigaon railway station on Shegaon road. It is about 1 KM from Gaigaon village and 15 KM from Akola. The approach road (Shegaon road) is connected to NH 6 (Mumbai to Kolkata National Highway) at about 10 KM from the depot on the eastern side, thereby facilitating connection with economic centers and remote villages.

Gaigaon village is located in Balapur Tehsil of Akola district in Maharashtra, India. It is situated 17km away from sub-district headquarter Balapur and 15km away from district headquarter Akola. As per 2009 stats, Gaigaon village is also a gram panchayat.

The total geographical area of village is 1554.4 hectares. Gaigaon has a total population of 4,112 peoples. There are about 813 houses in Gaigaon village.
CHAPTER 5
PLANNING BREF

(i) Planning concept
Construction of 3 additional tankage at Akola Depot. Four products (MS, HSD, and SKO & Ethanol) are handled. Products are received by rail tank wagons from IOCL Gujarat Refinery and BPCL Manmad Terminal. Products are unloaded in storage tanks by pumps and pipelines. Products are loaded in tank trucks from storage tanks by pumps and pipelines and distributed to retail outlets and consumers of Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded districts of Maharashtra.

(ii) Population projection
a. Akola district is least urbanized having 39.7 percent of its population in urban areas whereas 45.2 percent of State population lives in urban areas.
b. Literacy rate of Akola district is 88.0 percent
c. Village Hiwarkhed (23216) in Telhara tahsil is the most populated and village Ukliin Akola tahsil is the least populated (1) in the district.
d. The percentage of Scheduled Tribe in the district is 5.5 percent
e. The economy of the districts primarily depend on agricultural sector, 67.5 percent of the population is engaged in agricultural activities.
f. The District Sex ratio 946 is higher compare to state sex ratio 929 even though there is increasing trend in the last 10 decades

The total geographical area of Gaigaon village is 1554.4 hectares. Gaigaon has a total population of 4,112 peoples. There are about 813 houses in Gaigaon village. Because of the increased industrial activity in the region, employment opportunities for the local people will increase. The projected population of village for the year 2017 is around 5500 peoples.
(iii) **Land use planning**

The Depot is established on an existing 1,87,500 m² land & no additional land have been acquired for the construction of 3 additional tankages. The following units are located inside the plant boundary:

- Boundary Wall
- Administrative Building
- Car/Cycle Shed
- Diesel Generator Set Room
- Electrical HT Room
- Electrical LT Room
- Control Centre
- Engineering Store
- TLF Pump House
- TWD Pump House
- Tank Lorry Filling Gantry
- Tank Wagon Unloading/Loading Facility
- Driveway and Hard Standing
- Bore Well
- Control Room and Security Room
- Storage Tank Farms
- Tank Truck Parking Area
(iv) **Assessment of infrastructure demand**

**Future Facilities:**

- Training Centre, duly equipped with all modern aids to impart training to own staff, contractors workmen, tank lorry crews etc.

- Laboratory facilities to test the quality of POL products.
CHAPTER 6
PROPOSED INFRASTRUCTURE

(i) Industrial area
The depot will have modern high-tech facilities conforming to international standards besides complying with the Oil Industry Safety Directorate standards. The depot will be provided with all modern fire-fighting facilities as per OISD standards

(ii) Green belt
As per the Regulations Green belt is developed in approx 61,875 m² of area. This would not only prevent the fugitive dust emissions but also improve the peripheral appearance of the plant from aesthetics point of view. Unpaved areas, if any, within the plant boundary would be provided with grass cover.

(iii) Social infrastructure
- Development of roads and extension of the existing networks to aid connection
- It will develop the area economically and employment opportunities to the local people
(iv) **Connectivity**

The Depot is located near Gaigaon railway station on Shegaon road. It is about 1 KM from Gaigaon village and 15 KM from Akola. The approach road (Shegaon road) is connected to NH 6 (Mumbai to Kolkata National Highway) at about 10 KM from the depot on the eastern side.

(v) **Drinking water management**

The source of water supply will be from bore well which is installed under the project.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Water Consumption in KLD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing</td>
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<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>Gardening</td>
<td>2KLD</td>
</tr>
<tr>
<td>3</td>
<td>Domestic</td>
<td>3KLD</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>5KLD</strong></td>
</tr>
</tbody>
</table>

(vi) **Sewerage system**

Sewage is being treated in septic tank and disposed off through soak pit

(vii) **Industrial waste management**

There is no industrial waste generation since project does not involve manufacturing process.

(viii) **Solid waste management**

Solid waste is being handed over to authorized recycler.

(ix) **Power requirement and supply**

A total electrical load of 400 KW will be sufficient for the petroleum depot.

The power supply is being obtained from MSEDCL, backup power through 2 nos. of DG sets 250 KVA are in place at depot.
CHAPTER 7

REHABILITATION AND RESETTLEMENT (R & R) PLAN

The Depot is established on a existing 1,87,500 m² land & no additional land have been acquired for the construction of 3 additional tankages The current plan of acquisition of 1,87,500 m² does not entail displacement of any human settlement. Hence at this stage there are no identifiable issues relating to Rehabilitation and Resettlement (R&R)
The total cost of the project is approximately Rs. 3.93 Crores.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Particulars</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Land &amp; Land Development</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>Civil Building</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>Tanks (AG/UG)</td>
<td>3.93 crores</td>
</tr>
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<td>4.</td>
<td>TLF Gantry &amp; Product Pipeline</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>T/Wagon Decantation Facility</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>Fire Fighting Facilities</td>
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<tr>
<td>7.</td>
<td>Electrical Systems</td>
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<tr>
<td>8.</td>
<td>Automation</td>
<td>0</td>
</tr>
<tr>
<td>9.</td>
<td>OWS &amp; Borewell</td>
<td>0</td>
</tr>
<tr>
<td>10.</td>
<td>Misc</td>
<td>0</td>
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<tr>
<td></td>
<td>Total Cost</td>
<td>3.93 crores</td>
</tr>
</tbody>
</table>
CHAPTER 9

ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

(i) **Financial Benefits of the Project:**

Timely completion of tank truck loading and tank wagon unloading, thus substantial decrease in overtime of employees and contract workmen, giving savings to corporation & nation.

Product availability will be better for retail outlets and consumers of Akola, Amravati, Washim, Hingoli, Nagpur, Yavatmal, Buldhana, Nanded districts of Maharashtra & can cater the demand of neighboring areas also.

(ii) **Social Benefits:**

- It will develop the area economically and employment opportunities to the local people
- Protection of Environment, Water & Energy resources & Sustainability
- Building Community Infrastructure
- The proposed project with increased investment would augment the above mentioned activities and would promote:
  - Improvement in the socio-economic status of the region by generation of direct and indirect employment opportunities
  - Development of ancillary small and medium industries, trade & commercial establishments and local entrepreneurship