PRE-FEASIBILITY R E P O R T

ON

PROPOSED LPG BOTTLING PLANT

AT

GONDA, UTTAR PRADESH

OF

M/S HINDUSTAN PETROLEUM CORPORATION LTD.
(HPCL)

FOR ENVIRONMENTAL CLEARANCE

(VIDE MOEF GUIDELINES NO. J-11013/41/2006-IA.II(I) DATED 30TH DECEMBER 2010)

Prepared By

PROJECTS & DEVELOPMENT INDIA LIMITED
(A Govt. of India Undertaking)
PO: Sindri - 828122, Dist: Dhanbad (Jharkhand)
QCI-NABET Accreditation sl. no. 120 as on April 2017

PDIL JOB NO.: 9719 **MAY, 2017**

1.0 EXECUTIVE SUMMARY

1.1 BACKGROUND

Hindustan Petroleum Corporation Limited (HPCL) is operating LPG Bottling Plants in the state of Uttar Pradesh at Unnao and Gorakhpur with an installed capacity of 60 TMTPA each. As per Vision 2015 Document of MOP & NG, Govt. of India, the LPG penetration at customer's end has to be increased so as to achieve 80% penetration of LPG by 2018-19. The current LPG Penetration level in the State of UP is only 50%. The penetration is even lower than 25% in some Districts, which indicates the tremendous potential in terms of increase in growth in LPG Segment.

It is projected to release approx. 15 Lakhs new LPG connections in next 3 years by HPC in the State of UP. In order to meet the demand of HPCL LPG customers and new enrolment under PMUY in the next five years HPCL proposes to set up a new Bottling Plant at Gonda.

HPCL proposes to construct a 120 TMTPA capacity new LPG Bottling Plant in the free, unencumbered, vacant land available within the existing old closed POL depot of HPCL at Gonda, with facilities for receipt of bulk LPG by Tank Trucks and carryout LPG cylinder Bottling operations. The POL Depot operation has been closed after commissioning of new POL terminal at Kanpur since June 2016. The Bottling Plant location being close to the network of dealers shall reduce the transportation cost of LPG through filled cylinders over long distance resulting in most economic and safe operations.

1.2 PROJECT AT A GLANCE

The LPG bottling plant shall be constructed as per Oil Industry Safety Directorate Standard OISD- 144. A typical layout of the proposed LPG Plant is enclosed in Annexure-1.

The Bottling plant shall be operated in two shifts /day and 300 days/year to achieve the targeted production of 120 TMTPA by making use of facilities listed in Annexure-1.

Following facilities are proposed in the new LPG Bottling Plant:

a. 2 nos.24 filling guns fully automatic Electronic Carousels
b. LPG Cylinder Sheds (Filled & empty)
c. Filling and testing equipment
d. 3 Nos. of 350 MT capacity Mounded Bullets
e. Fire water storage tanks and allied Firefighting facilities, Gas Monitoring system and PPE as per OISD 144
f. 8 bays Tank Truck unloading facilities

g. 2 Nos. of Manual filling scales for 35 Kg./47.5 Kg. capacity cylinders filling
h. Shed & Testing equipment for in-house Periodic Cylinder Testing Facility
i. LPG Pump & Compressors
j. Air Compressors, DG sets and electrical equipment.

1.3 ENVIRONMENTAL CONSIDERATION

In the year 2009 the Central Pollution Control Board (CPCB) has developed a Comprehensive Environmental Pollution Index (CEPI) and revised the same in subsequent year's upto April, 2016. It involved a nation-wide environmental assessment of Industrial Clusters based on CEPI and 43 such industrial clusters in 16 States having CEPI greater than 70, on a scale of 0 to 100, has been identified as Critically Polluted Area (CPA).

The proposed project location Gonda, Uttar Pradesh does not fall in the list of 43Critically Polluted Area (CPA) identified by CPCB. Hence, carrying out developmental work at Gonda shall not constitute any statutory binding related to existing environment in and around the proposed project.

1.4 NEED & JUSTIFICATION

- Govt. of India had ventured into promotion of LPG as a cooking fuel in the Country since more than 4 decades
- The proposal shall help to cut down on pollution and reduce deforestation
- Govt. of India has ventured on a program to increase the use of domestic LPG in the rural areas by launching Rajiv Gandhi Gramin LPG Vitarak program from 2009-10 and PMUY scheme since May 2016 with a target to increase the use of LPG to 75% of the population.
- Proposed project shall be able to meet the increasing demand of LPG cylinder in the region.
- It will ensure easy availability of LPG
- HPCL owns free vacant land of old closed POL depot in Gonda

1.5 CONCLUSION

The proposal for installation of LPG Bottling plant will be able to cater the demand of LPG in nearby areas of Gonda, Uttar Pradesh& also meets the Govt of India initiative of supplying LPG to rural areas and cut downs pollution, especially women to be made free from pollution in their kitchen.

2.0 INTRODUCTION

2.1 BACKGROUND

HPCL is a Fortune 500 company, engaged in Refining and Marketing of petroleum products, with an annual turnover of over Rs. 1,16,000 Crores, having about 20% Marketing share in India with a strong marketing infrastructure.

HPCL operates 2 major refineries, producing a wide variety of petroleum fuels & specialties, one in Mumbai (West Coast) of 6.5 MMTPA capacity and the other in Visakhapatnam, (East Coast) with a capacity of 8.3 MMTPA. HPCL is also holding 49% equity stake in HMEL, Bhatinda refinery of capacity 9 MMTPA & an equity stake of 16.95% in Mangalore Refinery & Petrochemicals Limited, a state-of-the-art refinery at Mangalore with a capacity of 9 MMTPA.

Hindustan Petroleum Corporation Limited presently has LPG Bottling Plants in the state of Uttar Pradesh at Unnao and Gorakhpur, having an installed capacity of 60 TMTPA each.

Petroleum products &Oil marketing companies have projected an increase in demand of LPG in future due to increase in its domestic use. The demand is likely to increase substantially over the years to come. Oil PSUs have planned enrollment of new customers to saturate the demand potential and also provide LPG connections to BPL families under Pradhan Mantri Ujjwal Yojana (PMUY) scheme as per directive of the Ministry of Petroleum and Natural Gas, Government of India.

In line with the requirement envisaged and to ensure to fulfill the demand, MOP&NG has planned that different oil companies should increase their storage and bottling capacity for LPG. Accordingly, HPCL proposes to construct a 120 TMT capacity LPG Bottling Plant in Gonda, UPalong with allied facilities.

The total sales volume of LPG in the State of UP during the last three years is as under Table 2.1:

Table 2.1

Total sales in the State of Uttar Pradesh during the last three years

Year	Sales Volume (TMT)	% Growth over Historical
2013-14	16294	4.5%
2014-15	18000	10.5%
2015-16	19551	8.6%

As per Vision 2015 Document of MOP & NG, GOI, the LPG penetration has to be increased so as to achieve 80% penetration of LPG by 2018-19. The current LPG Penetration level in the State of UP is only 50%. The penetration is even lower than 25% in some Districts, which indicates the tremendous potential in terms of increase in growth in LPG Segment.

It is projected to release approx. 15 Lakhs new LPG connections in next 3 years by HPCL in the State of UP. Therefore, large nos. of regular and GLV distributors are expected to be commissioned during next 2-3 years apart from the demand arising out of PMUY scheme. However, in absence of HPCL's own additional bottling plants, HPCL shall not be getting rightful share of new distributorship as per market potential and also there will be a huge shortfall in the supply of Domestic LPGin the State of UP.

Keeping in view the increasing LPG Penetration level to 80% by 2018-19 as per directive of MOP&NG and implementation of PMUY Scheme, the projected demand supply scenario is as under:

Table 2.2

The projected demand supply scenario in the State of UP

Year	Projected Sales Volume (TMT)	Production Capacity (TMTPA)	Shortfall (TMTPA)
2016-17	267	140	127
2017-18	369	140	229
2018-19	484	240 (2nd Carousel at Unnao & Gorakhpur)	244

In order to meet the demand of HPCL LPG customers and new enrolment under PMUY in the next five years HPCL proposes to set up a new Bottling Plant in the existing premises of old closed POL depot at Gonda.

HPCL proposes to construct a 120 TMTPA capacity new LPG Bottling Plant in the free, unencumbered, vacant land available within the existing old closed POL depot of HPCL at

Gonda, with facilities for receipt of bulk LPG by Tank Trucks and carryout LPG cylinder Bottling operations. The POL Depot operation has been closed after commissioning of new POL terminal at Kanpur since June 2016. The Bottling Plant location being close to the network of dealers shall reduce the transportation cost of LPG through filled cylinders over long distance resulting in most economic and safe operations.

M/S HPCL has engaged Projects & Development India Limited (PDIL), a Government of India Undertaking, which is a QCI-NABET accredited (Sl. No.116 as on 11.01.2017 in List- 'A') EIA Consultancy Organization for Isolated Storage & Handling of Hazardous Chemicals.

2.2 IDENTIFICATION OF PROJECT PROPONENT

Name of the applicant	M/s. HINDUSTAN PETROLEUM CORPORATION LTD.
Registered Address	8, Shoorji Vallabhdas Marg, P.O. Box No. 155, Mumbai-400 001.
Address for correspondence: Name Designation (Owner/Partner /CEO) Pin code E-mail Telephone No. Fax No.	Rahul Surendra Lokhande Sr. Project Engineer- LPG Projects HPCL, HPCL, Marketing HQ, Hindustan Bhavan, LPG projects, Ballard Estate, Mumbai-400001 rahullokhande@hpcl.in +917755917579 --

2.3 DESCRIPTION OF FACILITIES

The proposal envisages construction of a new LPG bottling Plant of 120 TMTPA capacity with 2x24 filling guns automatic electronic carousal with downstream facilities, LPG mounded bulletstorage of 3 x 350 MT, 8 nos. of truck unloading bays and other allied facilities at Gonda, UP. The Firefighting facilities includes above ground fire water tanks of total capacity around 7000 KL, Automatic fire Fighting system including Diesel Engine Driven Water pumps, Control, Automation & Gas Monitoring Facilities etc. A typical LPG Plant Layout drawing shall be as per Annexure I and LPG Plant Process Flow drawing as per Annexure II.

2.4 DESIGN CRITERIA

The LPG bottling plant shall be constructed as per OISD 144 (Annexure-1).

The Bottling plant will be operated in two shifts /day and 300 days/year to achieve the targeted production by making use of facilities listed in Annexure.

Following facilities are proposed in the LPG Bottling Plant.

a. 2 nos. of 24 guns fully automatic Electronic Carousels
b. LPG Cylinder Sheds (Filled & Empty)
c. Filling and testing equipment
d. 3 Nos. of 350 MT capacity Mounded Bullet storage facilities
e. Fire water storage tanks and allied Firefighting facilities, Gas Monitoring system and PPE as per OISD 144
f. 8 no. of Tank Truck unloading bays
g. 2 Nos. of Manual filling scales for 35 Kg./47.5 Kg. capacity cylinders filling
h. Shed & Testing equipment for in-house Periodic Cylinder Testing Facility
i. LPG Pump & Compressors
j. Air Compressors, DG and electrical equipment.

2.5 POWER REQUIREMENT

Total power requirement envisaged is 500 KVA and shall be supplied by SEB. Two nos. of DG sets (1 main + 1 standby) shall be provided to meet power demand during power failure/emergency.

2.6 FIRE FIGHTING FACILITIES

The proposed bottling plant shall be equipped with fire-fighting facilities as per OISD 144. The system is based on Electro pneumatic heat detection based automatic sprinkler system provided in all LPG facilities, gas monitoring system, PPEs etc. The fire-fighting facilities shall consist of 5 nos. of fire water storage tanks of total capacity around 7000 KL with required fire engines to provide 4 hours of fire-fighting capacity. The system shall be integrated with fire-fighting facilities of adjacent terminal of BPCL.

The entire Plant shall be networked with pressurized fire hydrant lines with Fire Hydrants, long range Monitors and Deluge Valves at strategic locations as per OISD-144.

2.7 WATER SUPPLY SYSTEM

Source: Water requirement shall be met through existing tube wells within the plant premises.

Total Water Requirement

Total water requirement for proposed LPG Bottling plant is given below:

Table 2.3

Water Requirement for proposed LPG Bottling Plant

S.No	Water Requirement	(m^3/day)
1.	Domestic	05
2.	Industrial	15

The raw water shall be stored in over-head water tanks within plant premises. Primary treatment unit shall be proposed for drinking and other purpose.

2.8 DISPOSAL OF WASTEWATER

Total wastewater generation shall be 5m^3/day. The effluent generated from sewage and domestic uses shall be treated in Septic Tank and finally disposed off through Soak pit.

3.0 SITE ANALYSIS

3.1 LOCATION OF PROJECT

A land to the extent of 22 acres has been earmarkedin the existing closed POL depot at Gonda besides SH-30. The proposed plant shall receive bulk LPG from Bhatinda or Haldia refinery and bottled in the cylinders for onward distribution to HPCL LPG Distributors.

Location Plot/Survey/Khasra No. Village Tehsil District State	 Sy. No: 270-274 & 292-315 Janakinagar Gonda Gonda Uttar Pradesh
Nearest railway station/airport along with distance in kms.	Gonda Railway Station around 3.5 KMs from the proposed LPG Bottling Plant. Nearest Airport: Lucknow
Nearest Town, city, district Headquarters along with distance in kms.	Nearest Town: Gonda at a distance of 2 kms Nearest City: Gonda at a distance of 2 Kms District Headquarters: Gonda at a distance of 2 kms
Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village Panchayat: Jay Prabha Zilla Parishad: - Gonda

3.1.1 Geo-Coordinates of the proposed project

The Geo co-ordinates of the proposed LPG Bottling Plant at shall be at *Latitude $27^0$08'53" N* and *Longitude $81^0$57'14" E* at an elevation of 107m from MSL.

3.2 DETAILS OF ALTERNATE SITE

No other alternate site was chosen for installation of LPG Bottling plant at Gonda by M/S HPCL owing to ready availability of free unencumbered land in their existing closed POL depot.

3.3 SIZE & MAGNITUDE

The proposal envisages construction of a new LPG bottling Plant of 120 TMTPA capacity with 2x24 guns automatic electronic carousal with downstream facilities, mounded bullet LPG storage of 3 x 350 MT, 8 nos. of truck unloading bays and other allied facilities at Gonda. The facilities shall also have structures like industrial sheds, shed structures with tubular trusses & AC sheet roofing, Administration, Amenity, MCC, DG set Room & Security office etc.

4.0 PROCESS DESCRIPTION

4.1 LPG Bulk Receipt:

The LPG bulk receipt shall be through Tank Trucks from Bhatinda or Haldia refinery and shall be unloaded & stored in the mounded bullet storage.

4.2 LPG Storage:

It is proposed to provide (3 nos.) of mounded bullet storage of 350 MT capacityeach. The mounded Bullets shall be provided with 1 no. of 10" inch nozzle at the bottom for product receipt and dispatch, 2 nos. of 3" nozzles shall be provided at the top of the vessel for vapor inlet and vapor withdrawal and one no. of 4" nozzle for product return from the pump bypass, carousel return and evacuation. Vessel shall be designed as per the latest international standards viz. PD 5500:2000, ASME SEC III Div II.

Each bullet shall be covered with minimum 700mm sand cover on all sides to avoid heat transfer to the vessel surface from external sources. Each bullet shall be provided with 2 nos. safety relief valves, 2 gauging systems in the form of a Radar gauge and a servo gauge with high level switch. All the nozzles on the vessels shall be provided with remote operated valves for automatic emergency shutdown. The vessels shall also be provided with pressure & temperature gauges.

The mounded bullet facilities shall be provided with all the safety features including Cathodic protection system as per OISD 150.

The following safety provisions shall be provided for each mounded bullet:

1. Two Safety Valves
2. Remote Operated Valve (ROV) on all LPG inlet / outlet lines
3. Radar Level Gauge & Servo Gauge
4. Tank Farm Management System for Continuous Monitoring
5. Cathodic Protection (CP) System
6. Anti-Corrosive Painting
7. Earthing System
8. Gas Monitoring Sensors
9. Remote operated Water Sprinkler system for Open portion of bullets & ROV's.

Table 4.1

DESIGN & OPERATING PARAMETERS FOR LPG MOUNDED STORAGE BULLET

Sl. No.	Parameter	Remark
I	**VESSEL:**	
1.	Storage Capacity	3 X 350 MT
2.	Volumetric Water Capacity each vessel	700 m^3
3.	Density of LPG	0.5 gm/cm^3
4.	Design Code	BS 5500 (Latest Edition)
5.	Design Pressure (Internal) (External)	14.5 kg/cm^2 gauge at Top 1.856 kg/cm^2 gauge
6.	Operating Pressure	8-9 kg/cm^2
7.	Design Temperature	-27^0 C to + 55^o C
8.	Operating Pressure	Ambient
9.	Hydraulic Test Pressure	As per code
10.	Radiography	100% before and after Post Weld Heat Treatment
11.	Corrosion Allowance	1.5 mm
12.	Post Weld Heat Treatment (PWHT)	Required
13.	Wet Fluorescent Magnetic particle testing	Required after PWHT
14.	Hardness checking of heat Affected Zone	Required after PWHT
15.	Mapping of Plate Thickness	Required
16.	Joint Efficiency	1
17.	Length of Pressure Vessel	33000 mm (approx.)
18.	Diameter of Vessel	6000 mm
19.	Dished Ends	Hemisphere

Note: All openings will be of Flanged type with nozzle construction

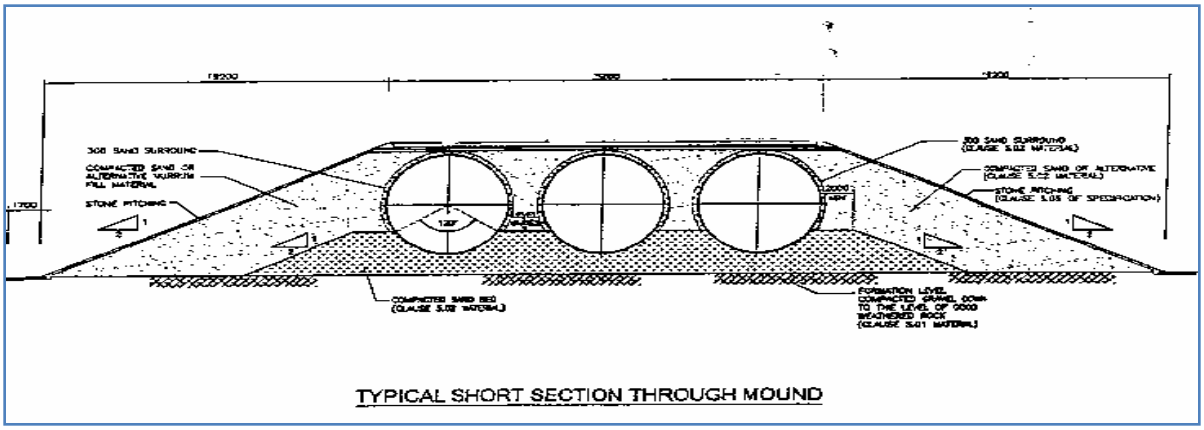


FIG 4.1
MOUNDED STORAGE (TYPICAL CROSS SECTION)

4.3 LPG Bottling:

Two nos. of LPG pumps (1W+1S) with low NPSH shall be provided for cylinder filling operation. Pumps shall be provided with double mechanical seals. The cylinder filling pumps shall be of 65 m^3/hr capacity with a max. differential head of 180 m. The design and construction of the pumps shall be as per API 610 duly inbuilt with all safety requirements like double mechanical seals etc. as per OISD 144.

Filling operation shall be done on 24 point automatic electronic carousal. Cylinders shall be checked for correct weight & valve &'O' ring leakage automatically on electronic machines. Filling pressure shall not be more than 16.9 kg/cm^2.

4.4 LPG Bulk unloading / emergency loading:

The proposed LPG Plant shall be provided with 8 nos. of TT gantry bays for bulk loading and emergency unloading. The TT gantry shall be provided with loading arms with inbuilt safety features like emergency relief device, breakaway coupling, excess flow check valve etc.

2 nos. reciprocating type LPG compressors including one standby shall be provided for bulk LPG TT unloading of capacity 300 m^3/hr with unloading time of around 150 minutes. Typical suction pressure of compressors shall be 10 kg/cm^2 abs. max. during unloading and 2-11.8 kg/cm^2 abs. during vapour recovery. Typical discharge pressure shall be 13 kg/cm^2 abs. The design and construction of the LPG Compressors shall be as per API 618 duly inbuilt with all safety requirements as per OISD 144.

During normal operations, approximately 35 nos. of bulk LPG tank trucks are expected to be handled in a day. These trucks shall arrive at the dedicated truck parking area earmarked at the project site which shall be duly covered by the networks of hydrants / monitors. The trucks shall enter the plant as per their rotational turn. Trucks shall proceed to the main gate for the security checks, document verification etc. and then shall proceed to the weigh bridge. One weigh bridge of 50 MT capacity shall be provided. The net weight of the tank truck shall be registered in the system and the vehicle shall proceed to the respective bay allotted to it for filling operation. The truck shall wait for its turn to enter the bay, and on entering, shall park at the designated point. The operator shall take over the truck to carry out safety checks, connect earthing, provide wooden chokes etc.

LPG loading arms shall be connected to the tank trucks for loading. The entire activities shall be monitored and controlled from the control room, which shall have real time data as to which truck is getting filled up, what is the quantity being filled, from which storage vessel the product is emptied out etc.

On completion of unloading operation, the tank trucks shallbe released for weighing and documentation. LPG quantity shall be estimated through measurement of empty weight at the weigh bridge. On completion of entire activity and documentation, the trucks shall be systematically led out through the main gate.

The proposed truck parking area shall have capacity to park about 40 tank trucks and 30 cylinder (empty) trucks. All these can be safely parked and moved in / out from the parking area. The parking area shall have high mast lighting, separate amenity building for drivers/ cleaners etc. Parking area shall have dedicated parking slots for tankers and cylinder trucks and shall also have wide access areas to negotiate tanker turning movements and smooth ingress / exit.

The proposed roads shall be 12 m wide, which are designed to take care of the maximum traffic envisaged during full scale two shift operation of the Bottling Plant.

4.5 Loading and unloading of cylinders:

The same shall be carried out with the help of telescopic conveyors in the Cylinder loading/ unloading sheds.

5.0 NEED OF THE PROJECT

- Govt. of India had ventured into promotion of LPG as a cooking fuel in the Country since more than 4 decades
- The proposal shall help to cut down on pollution and reduce deforestation
- Govt. of India has ventured on a program to increase the use of domestic LPG in the rural areas by launching Rajiv Gandhi Gramin LPG Vitarak program from 2009-10 and PMUY from May 2016 with a target to increase the use of LPG to 75% of the population.
- Proposed project shall be able to meet the increasing demand of LPG cylinder in the region.
- It will ensure easy availability of LPG
- HPCL owns free vacant land of old closed POL depot in Gonda

6.0 ENVIRONMENTAL STATUS

In the year 2009 the Central Pollution Control Board (CPCB) has developed a Comprehensive Environmental Pollution Index (CEPI) and revised the same in subsequent years upto April, 2016. It involved a nation-wide environmental assessment of Industrial Clusters based on CEPI and 43 such industrial clusters in 16 States having CEPI greater than 70, on a scale of 0 to 100, has been identified as Critically Polluted Area (CPA).

The proposed project location Gonda, Uttar Pradesh does not fall in the list of 43 Critically Polluted Area (CPA) identified by CPCB. Hence, carrying out developmental work at Gonda shall not constitute any statutory binding related to existing environment in and around the proposed project.

8.0 EMPLOYMENT GENERATION

It is envisaged that the proposed project would generate sufficient employment opportunity during construction phase and operation phase. For carrying out construction related activities, it is envisaged to engage skilled, semi-skilled and unskilled workers from local area to the maximum extent.

Table 8.1
Manpower and Administrative Manpower

Sr. No	Posts	Numbers
1	Managers	1
2	Technical Experts	5
3	Skilled	6
4	Semi-Skilled	25
5	Un-Skilled	2
6	Administrative Staff	2

9.0 REHABILITATION & RESETTLEMENT PLAN

The proposed project shall be spread over in an area of about 22acres of free unencumbered land within existing premises of old closed POL depot of HPCL. The total area of land is under the administrative possession of HPCL. The proposed new LPG Bottling plant installation shall be carried out in the vacant available land. Hence, any planning with respect to Rehabilitation & Resettlement is not applicable.

10.0 PROJECT SCHEDULE & COST ESTIMATES

10.1 PROJECT SCHEDULE

The zero date for start of construction shall be after grant of Environmental Clearance (EC) from MoEF&CC. The proposed project shall be completed within 24 months after issuance of EC.

10.2 PROJECT COST

The total cost of the proposed project has been estimated at *Rs. 115.88 Crores.*

11.0 CONCLUSION

It may be noted that the proposed project is limited only to installation and development of LPG receipt, storage and dispatch facilities. The proposed project is safe from environmental point of view as the same shall not alter any component of the environment.

Figure – 3.1

Location of Proposed Gonda LPG Bottling Plant of M/S HPCL on Google Map

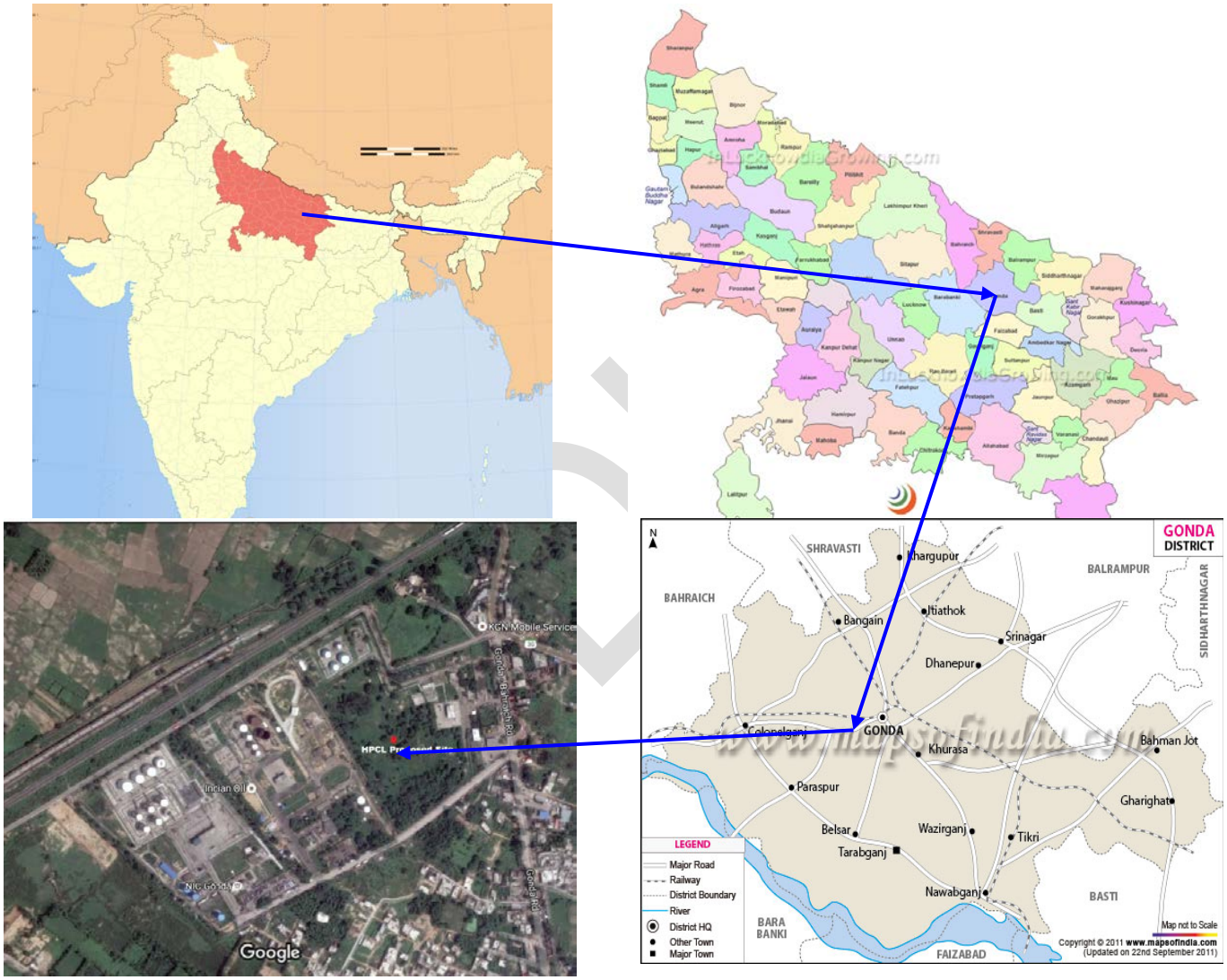
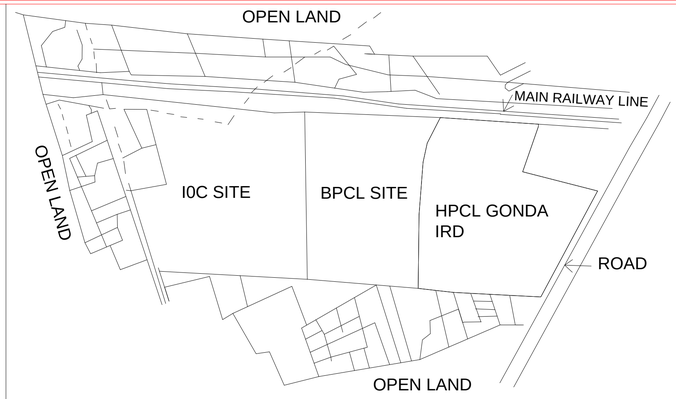


Figure -3.2
Location of Gonda LPG Bottling Plant of M/S HPCL in Geographical Map



KEY PLAN

PROPOSED FACILITIES

SR. NO.	FACILITY DESCRIPTION	AREA IN SQM.	QTY.	AREA
1	MAIN GATE SECURITY CABIN	7 X 7	1 NO.	49.00
2	INVOICE CUM COUNTING P/F	7 X 7	1 NO.	49.00
3	ADMINISTRATIVE BUILDING	25 X 10	1 NO.	250.00
4	WORKERS AMENITY BLDG	20 X 10	1 NO.	200.00
5	FIRE PUMP HOUSE	19 X 8	1 NO.	152.00
6	STATIC WATER TANKS (6a, 6b, 6c, 6d & 6e)	TOTAL 5200 KL	5 NOS.	-
7	MCC ROOM & DG ROOM	20 X 7	1 NO.	140.00
8	METERING ROOM	5 X 4	1 NO.	20.00
9	TRANSFORMER	15 X 15	1 NO.	225.00
10	AIR COMPRESSOR HOUSE	15 X 10	1 NO.	150.00
11	WARE HOUSE	30 X 16	1 NO.	480.00
12	CYLINDER UNLOADING SHED	40 X 3	1 NO.	120.00
13	INTER CONNECTING PLATFORMS	MIN 15 MT EACH	17 NOS.	-
14	EMPTY CYL. STORAGE CUM FILLING SHED	70 X 40	1 NO.	2800.00
15	FILLED CYLINDER STORAGE SHED	40 X 20	1 NO.	800.00
16	CYLINDER LOADING SHED	40 X 3	1 NO.	120.00
17	PRESSURE TESTING SHED	36 X 30	1 NO.	1080.00
18	VALVE CHNG & DEGASSING SHED	20 X 20	1 NO.	400.00
19	LPG PUMP & COMPRESSOR HOUSE	25 X 10	1 NO.	250.00
20	MOUNDED STORAGE VESSELS (3X350 MT)	50 X 35	1 NO.	1750.00
21	TANK TRUCK GANTRY	48 X 16	1 NO.	768.00
22	WEIGH BRIDGE CABIN	3 X 3	1 NO.	9.00
23	SECURITY CABIN	4 X 4	2 NO.	16.00

SR. NO.	FACILITY	AREA
1	SHED AREA	6014.40
2	PARKING AREA	3446.10
3	BUILDING AREA	250.00
4	CC ROAD	16913.60
5	BT ROAD	4349.60
6	OTHERS	38908.30
	TOTAL	69882.00

1	TOTAL GREEN BELT	18383.00

*	TOTAL PLOT PLAN	88265.00

HINDUSTAN PETROLEUM CORPORATION LIMITED

PROJECT: LPG BOTTLING PLANT PROJECT AT GONDA

TITLE: PLOT PLAN OF GONDA LPG PLANT

DRN : SS	DATE: 13/12/2015	DWG NO. TO BE FINALISED	SHEET NO. 01/01
CHKD : VV	SCALE: 1:1000		REV 00
APPD : PSM	REVISE THIS DWG. BY CAD SYSTEM ONLY	ALL DIMENSIONS ARE IN METERS	

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

ANNEXURE-II: LPG PLANT PROCESS FLOW CHART