

# **EXECUTIVE SUMMARY**

## **DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**FOR**

**PROPOSED EXPANSION OF SUGAR UNIT 4500 TCD  
TO 10000 TCD AND COGENERATION POWER PLANT  
12 MW TO 42 MW AT POST - WARPHAL, TAL. -  
PARTUR, DIST. – JALNA**

### **PROJECT PROPONENT**

**M/S SHRADDHA ENERGY & INFRAPROJECTS PVT.  
LTD.**

**AT POST - WARPHAL, TAL. - PARTUR, DIST. –  
JALNA.**

## 1.0 Introduction

M/s. Shraddha Energy & Infraprojects Pvt. Ltd., (SEIPL) is a Company registered in the State of Maharashtra under the Companies Act,1956 bearing certificate of incorporation number U45209PN2004PTC020022 dated 15<sup>th</sup> December 2004 as M/s. Shraddha Construction & Power Generation Pvt. Ltd. having duly passed necessary resolution vide SRN A44290435 dated 01/10/2008, the name of the company changed to M/s. Shraddha Energy & Infraprojects Pvt. Ltd and it has targeted the objective of engaging in the business of manufacturing sugar, power and ethanol.

Currently SEIPL running a 4500 TCD sugar & 12 MW cogeneration plant at Gat no. 13,71,72,73,74,75,76,77,78,79,80,81,82,83,135,136,137,161,163,164 of village Warphal, Tal Partur, Dist Jalna, Maharashtra. Industry obtained consent to operate from the Maharashtra Pollution Control Board, Consent no. Format1.0/CAC/UAN No. MPCBCONSENT-0000155511/CO/2307001509 dated 24/07/2023 valid up to 31/07/2024.

Industry has obtained Environment Clearance form MOEF&CC (IA Division, New Delhi) vide file no. J-11011/198/2016-IA-II (I) dated 27.12.2022 for 120 KLPD distillery unit. Industry obtained consent to operate from Maharashtra Pollution Control Board consent no. Format1.0/CAC/UAN No. MPCBCONSENT-0000196039/CO/2403000168 dated 02.03.2024. Industry has submitted Renewal of Consent application to MPCB.

Industry has obtained Environmental Clearance from MOEF&CC (IA Division, New Delhi) vide file no. J-11011/198/2016-IA-II(I) dated 18.10.2024 for Proposed expansion of Existing Cane Juice/Syrup/Molasses based Distillery from 120 KLPD to 350 KLPD.

In response to the increasing market demand and the availability of sugarcane, the industry has chosen to expand its sugar crushing capacity. Hence SEIPL has submitting application for environment clearance for proposed Sugar expansion 4500TCD to 10000 TCD & 12 MW Co-gen plant to 42 MW co-gen plant under category B1.

As per EIA Notification dated 14<sup>th</sup> September, 2006 and its subsequent amendment, the project falls under Category "B1", Project or Activity '5(j)' Sugar industry and 1(d) thermal power plant. Project will be appraised at state level expert appraisal Committee.

Accordingly, the project proponent has submitted prescribed application along with pre-feasibility report to the SEIAA, Maharashtra on parivesh portal dated 27/06/2024 (Proposal No. PROPOSAL No. SIA/MH/IND2/484349/2024). SEAC- I Maharashtra granted Terms of reference for expansion of sugar and cogeneration in 279<sup>th</sup> State Level Expert Appraisal Committee (SEAC-I), Maharashtra meeting held on 13<sup>th</sup> August 2024. Based on the granted

TOR, Environmental Impact Assessment studies was carried out and draft EIA report has been prepared. Draft EIA report is submitting to Sub Regional officer, Jalna for the public hearing.

## 2.0 Project Location

The project is located at village Warphal, Tal. Partur, Dist. Jalna, Maharashtra. The project is geographically located at  $19^{\circ}34'16.46''\text{N}$  and  $76^{\circ}16'2.12''\text{E}$  and at 464 m above MSL. The proposed expansion will be carried out in existing factory premises. No eco-sensitive zones like tropical forest, biosphere reserve, national park, wild life sanctuary, and a coral formation reserve is located within 10 km from project site.

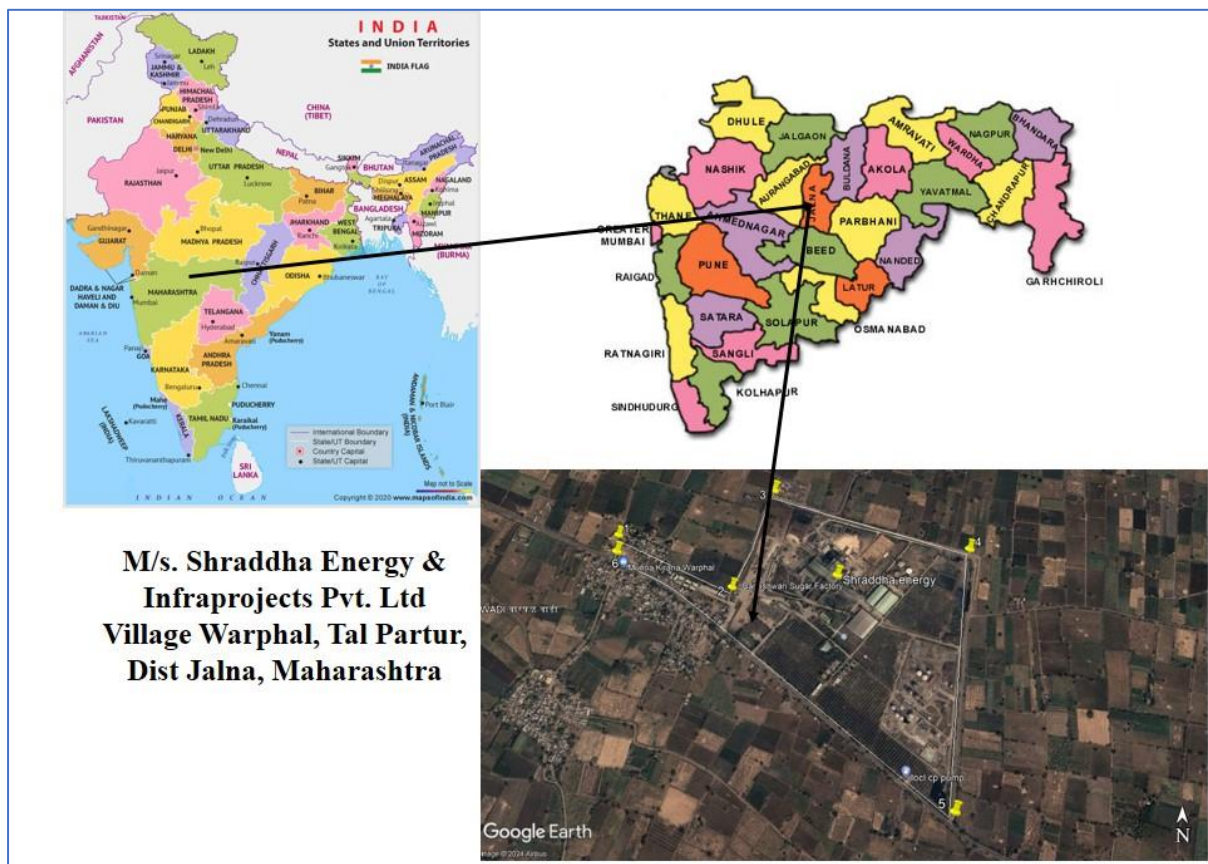


Figure 1:Project Location

### 3.0 Project Description

Sr.No	Particulars	Existing 120 KLPD Distillery (RS/ENA/Ethanol)	Existing Sugar 4500 TCD & 12 MW Cogeneration	Expansion Sugar 5500TCD & 30 MW Cogeneration	After expansion 10000TCD & 42MW cogeneration
1	Name of the Company	M/s. Shraddha Energy & Infraprojects Pvt. Ltd.			
2	Location	Village Warphal, Tal Partur, Dist Jalna, Maharashtra.			
3	Constitution of the Organization	Private Limited			
4	Capacity of the Project	120KLPD + 3.0 MW	4500TCD & 12 MW	5500TCD & 30 MW	10000TCD & 42MW
5	Products	ENA/RS/Ethanol; 120 KLPD Power: 3.0	Sugar: 72000MT Power: 12MW	Sugar: 88000MT Power :30MW	Sugar: 160000MT Power; 42 MW
6	By products	Potash Powder; 49TPD	Bagasse: 216000 MT B/C Molasses: 30600MT /43200MT MT Pressmud :30600 MT	Bagasse 264000 MT B/C Molasses: 37400MT/ 52800 MT Press mud :37400 MT	Bagasse: 480000MT B/C Molasses; 68000 MT/ 96000MT Press mud :68000MT
7	No. of Working Days	330	160	160	160
8	Total land	Total land: 61.64 ha & Green Belt 20.41 ha			
9	Raw material & Requirement	C- Molasses: 452 MT/day	Sugar Cane: 7.20 Lakh MT & Bagasse: 98000 MT	Sugar Cane: 8.80 Lakh MT & Bagasse: 279197 MT	Sugar Cane: 16.0 Lakh MT & Bagasse:377500 MT
10	Fresh water Source	Lower Dudhana Dam			
11	Water requirement	Fresh Water: 247 CMD. Domestic:50 CMD	Fresh Water: 535 CMD, Domestic: 50 CMD	- Fresh Water: 15 CMD	Fresh water; 550 CMD Domestic: 50 CMD
12	Boilers	30 TPH	32TPH×2 Nos. boilers	Proposed 38 x 2 TPH boilers & 110 TPH	Existing- 32TPH×2 Nos. boilers Proposed 38 x 2 TPH boilers + 110 TPH
13	DG set	625 KVA	320 KVA & 500 KVA	-	320 KVA & 500 KVA
14	Power	2.5 MW	5.2 MW	5.8 MW	11 MW
15	Steam	21 TPH	76 TPH	94 TPH	170 TPH
16	Fuel	Bagasse: 10TPH	Bagasse: 30.47 TPH	Bagasse: 36.19 TPH	Bagasse: 42.31

					TPH
17	<b>Effluent Generation</b>	607 CMD	330 CMD ETP	460 CMD ETP 2500 CMD CPU	790 CMD ETP 2500 CMD CPU
18	<b>Effluent Treatment</b>	1200CMD CPU	400 CMD ETP	400 CMD	800CMD
19	<b>APC system</b>	62 M height of stack & ESP to 30TPH boiler	45 M stack with wet scrubber to 32 TPH x 2 Boilers	Proposed 81 M stack and ESP to 38 x 2 TPH boilers Proposal 110 TPH boiler ESP and 81 M stack	Existing; 45 M stack with ESP to 32 TPH x 2 Boilers. Proposed: 81 M stack and ESP to 38 x 2 TPH boilers. Proposed 110 TPH boiler ESP and 81 M stack
20	<b>Manpower</b>	70	389	300	759
21	<b>Project cost</b>	140.00 Cr	233.7401Cr	350.0 Cr	483.74 Cr

#### 4.0 Basic Raw Material

**4.1 Land Requirement:** Total 61.64 ha land is in possession of M/s. Shraddha Energy & Infraprojects Pvt. Ltd., (SEIPL). The proposed expansion will be in existing premises of factory. No additional will requires for the expansion.

#### 4.2 Raw Material:

SN	Raw material	Existing	Expansion	Total	Source and transportation
1	Sugar cane	7.20 lakh MT	8.80 Lakh MT	16.0 Lakh MT	Nearby farms & road
2	Bagasse for cogeneration	0.98 Lakh MT	2.79 Lakh MT	3.77 Lakh MT	Own sugar unit
3	C- Molasses	452 MT/day	-	452 MT/day	Own sugar unit

#### 4.3 Water Requirement

Fresh water is sourced from Lower Dudhana Dam. Factory has obtained permission from Irrigation Department; Govt. of Maharashtra for lifting the water. After expansion of sugar and cogeneration 550 CMD water will be required.

**4.4 Steam Requirement:** Total steam generation from Existing 32 x 2 TPH and proposed 110 TPH & Proposed 38 x2 TPH boiler will be 250 TPH and steam requirement will be 170 TPH for 10000 TCD.

- Existing sugar steam requirement: 76 TPH for 4500 TCD sugar

- After expansion: 170 TPH for 10000 TCD Sugar Unit.

#### **4.5 Power Requirement:**

At Present: 5.2 MW/hr for 4500 TCD & Distillery for capacity 120 KLPD is 2.5 MW.

After expansion of sugar: 11.0 MW/hr for 10000 TCD Sugar plant

#### **4.6 Manpower Requirement:**

There are currently 389 employees working for the sugar and cogeneration unit. Additional 300 workers will be employed for sugar and cogeneration plant expansion.

**4.7 Project Cost:** Capital cost of the proposed expansion of sugar, Cogeneration project will be 350.0 Cr. approximately.

#### **5.0 Baseline Environment**

The project is located at village Warphal, Tal. Partur, Dist. Jalna, Maharashtra. The project is geographically located at 19°34'16.46"N and 76°16'2.12"E and at 464 m above MSL. The study area is considered to be within 10 km radius of the project site for baseline environment monitoring. The studies were conducted during summer season for the period of March to May 2024.

**5.1 Ambient Air Quality:** Within a 10-kilometer radius of the project location, eight samples were collected. A well-designed air quality monitoring network was established to collect the existing ambient air quality data. The monitoring locations were selected with respect to the prevailing wind pattern.

- **Particulate Matter (PM 10):** The maximum 65.8µg/m<sup>3</sup> concentration of PM10 was observed at project site and minimum 54.5 µg/m<sup>3</sup> concentration was observed at Eakrukha village.
- **Particulate Matter (PM 2.5):** The maximum 29.8 µg/m<sup>3</sup> concentration of PM2.5 was observed at Project while minimum 16.7 µg/m<sup>3</sup> concentration was observed at Z-P School Koregaon.
- **Sulphur Dioxide (SO<sub>2</sub>):** The maximum 10 µg/m<sup>3</sup> concentration of SO<sub>2</sub> was observed at project site while minimum 5.1 µg/m<sup>3</sup> concentration was recorded at Partur.
- **Oxide of Nitrogen (NO<sub>x</sub>):** The maximum 12.8 µg/m<sup>3</sup> concentration of NO<sub>x</sub> was observed at Revalgaon while minimum 5.1 µg/m<sup>3</sup> concentration was recorded at Partur.
- **Carbon Mono-oxide (CO):** The concentration of CO was in the range of 0.1 to 1.2 mg/m<sup>3</sup>, Minimum concentration of Carbon monoxide (CO) was found at Z-P School Koregaon, while maximum was found at project site.

Inference: All the parameters were found well within the prescribed limits of NAAQ Standard, CPCB.

**5.2 Noise Level:** Within a 10-kilometer radius of the project location, eight samples were collected. Noise monitoring was carried out as per MoEF and CPCB guidelines. To understand the Noise Quality with respect to zone category, twelve representative locations were selected. Noise monitoring was carried out from time 06:00 Hrs to 22:00 Hrs and Night Time – 22:00 Hrs to 06:00 Hrs. Obtained results are compared with Noise pollution rules 2000. All values during day and night period are under the permissible standards.

**5.3 Surface water Environment:** Surface water sampling has been done at two locations distributed in the study area.

- **pH:** pH of the all-surface water sample is 7.2
- **Total Dissolved Solids:** The number of dissolved solids present in water is a consideration for its suitability for domestic use. Results show the ranges of TDS 180 mg/l to 260 mg/l.
- **Biological Oxygen Demand (BOD):** Out of 2 samples, 1 samples show less than 5 and one samples show 6 mg/l.
- **Chemical Oxygen Demand:** Out of 2 samples, 1 samples show less than 20.0 and one samples show 22 mg/l.
- **Total Hardness:** The desirable limit for total hardness, as per the Indian standards is 200 mg/lit and the values observed in samples are below the desirable limit.
- **Chloride:** The concentrations of the chlorides of all samples were between 34 to 44 mg/lit.
- **Sulphate:** The concentration values ranged from 20 to 28 mg/lit

**5.4 Ground Water:** Groundwater sampling has been done at eight locations distributed in the study area.

- **pH:** The pH is a measure of the activity of the (solvated) hydrogen ion. The range of pH is neutral to alkaline (7.2 to 7.7)
- **Total Dissolved Solids:** The amount of dissolved solids presents in water in the range of 268 to 470 mg/l.
- **Total Hardness:** The values of the samples analyzed are in the of 166 to 234 mg/l
- **Chloride:** The chloride values are in the range on 48 to 102 mg/l.
- **Sulphate:** The concentrations of sulphates in the in the range on 30 to 70 mg/l.

**5.5 Soil Environment:** A 10-kilometer radius around the project location was used to collect eight samples.

- The soil being of friable consistency, the bulk density & water holding capacity of the soil is in the range of 0.6 to 0.8 g/cm<sup>3</sup> & 50 -52 respectively.
- The pH of the soil in the study area is in the range of 7.2 to 8.
- The (Electrical Conductivity) of the soil extract in the study area is in the range of 368 to 763  $\mu$ S/cm and CEC is in between 0.8 to 1.8 meq/100g.
- The organic matter is in the range of 1 to 2 % and total organic carbon is in the range of 0.8 to 1.6 %
- Available phosphorous, potassium and nitrogen of the soil samples are found to be in the range of 34-64, 55-134 & 190 -288 kg/ha respectively.
- Soil samples were also analyzed for heavy metals such as Zinc (Zn), Iron (Fe) and Copper (Cu) and their concentrations are presented in the presence of heavy metals at proper pH enhances the microbial activity. In soil. The concentration of heavy metals found in the study area is normal.

### **5.6 Ecology**

As per guidelines of MoEF for Environmental Impact Assessment, the study area was restricted upto 10 km periphery of the project site. An ecological survey of the study area was conducted, as per following steps, with reference to listing of species, assessment of the existing baseline ecological conditions and predicting impacts with suggestive mitigation measures. The data were generated with reference to topography, land use, vegetation pattern, animals etc

**Flora:** There are many trees planted on the site. The floral diversity of the study area is very good with a total of 43 tree species, 23 shrubs, 18 herbs, 1 palms, & 3 grasses species. Thus a total of 90 species of flora have been documented from the study area. The floristic survey reveals that the study area shows dominance of trees *Azadirachta indica*, *Ficus racemosa*, *Mangifera indica*, etc.

#### **Fauna:**

**Mammals:** The survey revealed that there were 4 species of mammals in the study area viz. Jackal, Palm Squirrel, Common Mongoose, Indian Hare Common Langur & Common House Rat.

**Avifauna:** During the survey, 59 species of birds were noticed. The dominant birds were Koel, house crow, blue rock pigeon etc. None of these birds are endangered (Schedule I) as per Wildlife (Protection) Act 1972.



**Reptiles and Amphibians:** Altogether 5 species of reptiles were found viz. *Bungarus caeruleus*, *Ramphotyphlops braminus*, *Vipera russelli*, *Dryophis mycterizans*, *Ptyas mucosus*.

**Butterflies:** Study area comprised of 17 species of butterflies, dominated by *Précis orithyia*, *Catopsilia crocale*, *Neptis hylas*, *Junonia atlites*, etc. None of these is endangered (Schedule I) as per Wildlife (Protection) Act 1972.

### **5.8 Socio Economic Survey:**

According to recent censuses (2011) while dealing study area (10 Km radius from project site) as per secondary data the total population is 87180 in 16929 households. Male population is 44673 and female population is 42507. Highest population in study area is Partur (MC) (35883).

There are 16929 households in the study area and the average size of household is 5 members per household in the study area. The dependent population below 6 years is 12295 (10.10% of the total population) in the study area. The sex ratio of the study area is 952 females per 1000 males. The sex ratio of the study area is higher side as compare to district sex ration Jalna district (937). In the study area the average literacy rate is 62.79%, whereas the male literacy is 70.29% and female literacy is 54.91% in the study area. Total working population is 44.17% and non-working population is 55.82%, out of working population almost 90.53 % peoples are in main working population category and 9.46 % Population is in marginal population category

## **6.0 Environment Impact and Its Mitigation Measures**

### **6.1 Air Environment**

- The source of dust emissions is loading/unloading, transportation and storage of raw material & finished product.
- Gaseous pollutants (SO<sub>2</sub>, NO<sub>x</sub> and CO) are also anticipated from stack emissions and vehicular emissions.
- A major source of air pollution is the bagasse-fired boiler. Industry provided 45m stack with ESP to existing 32 x 2 TPH Boilers and 62 m stack with ESP to 30 TPH boiler. The industry plans to install boilers with a capacity of 38 x 2 with stack height 81 m and 110 TPH with stack height 81 m for a cogeneration unit. ESPs will be used to control emissions, ensuring PM levels stay below 50 mg/Nm<sup>3</sup>.
- Online Continuous Monitoring system will be installed and connects to Pollution control board as per CPCB guidelines.

### **6.2 Land Environment**

- The project site of 61.63 ha area is identified for Sugar Cogeneration & distillery unit. The main sources which will affect the land environment are by products from proposed activity i.e. ash, ETP effluent & sludge etc.
- Measures will be taken to minimize waste soil generation. Construction waste material will be recycled.
- Designation and demarcation of construction site with due provision for infrastructure.
- Appropriate measures are adopted for slope stabilization to reduce land erosions.
- Used oil from D.G. Set shall be sold to recyclers. There are no other hazardous wastes.

### **6.3 Noise Environment**

- During the operation phase noise will be generated from noise generating sources. The principle source of noise from industry are from fans, centrifuge, turbine, steam traps, steam vents etc.
- Transmission Loss should be installed for driving mechanism.
- If due to space constraints, mitigations are not installed, then Ear-plugs should be worn by all people entering this area.
- Install an acoustical enclosure with 30 dB transmission loss for the motor and gearbox to reduce noise.
- House compressors and blowers together and use acoustical enclosures with a 30 dB transmission loss.
- The personnel safety such as ear muffs, ear plugs and industrial helmets will also act as a noise reducers will be provided workers.
- Acoustic laggings and silencers will be provided in equipment wherever necessary. The compressed air station will be provided with suction side silencers. Ventilation fans will be installed in enclosed premises
- The silencers and mufflers of the individual machines will be regularly checked

### **6.4 Water Environment:**

Existing effluent generation consented quantity from sugar plant 210 KLD

Effluent generation after expansion

- Process effluent - 650 KLD
- Co-generation, Cooling tower and WTP reject - 140 KLD

Existing effluent Treatment plant capacity is 400 CMD. After expansion ETP plant capacity will be upgraded to 800 CMD.

Industry will be installed 2500 CMD capacity CPU for the excess condensate and treated condensate will be used for the process in sugar and distillery plant.

### 6.5 Impact of Solid Waste

SI. No.	Details of the Solid Waste	Existing Quantity in MT/M	Expansion in MT/M	After expansion MT/M	Mode of Disposal
1	Press mud	30600	37400	68000	Used as manure
2	ETP sludge	3.60	3.50	7.10	Burned with Bagasse in Boilers
3	Boiler ash	360	1040	1410	Used in brick manufacturing plant of premises
4	CPU Sludge	-	3.5	3.5	Sold as manure
5	Used oil KL/Anum	1.0	2.0	3.0	Sale to authorized person

### 6.6 Greenbelt Development

Total land: 61.64 Ha. Existing Greenbelt area is 20.41 Ha., which is 33.11 % of total plot area. In addition, proposed greenbelt area is 1.68 Ha. Total greenbelt area after expansion will be 22.09 Ha. As per requirement per ha plants @ 2500. Industry planted 28000 plants; balance 4200 Nos of plants will be planted.

### 6.7 Socio Economic Environment

- Increase in employment opportunities so as people will not migrate outside for employment.
- Increase in literacy rate.
- Growth in service sectors
- Improvement in prices of indigenous produce and services benefiting local people such as increase in land value, house rent rates and labour wages.
- Improvement in socio-cultural environment of the area.
- Improvement in transport, communication, health and educational services.
- Increase in employment due to increased business, trade, commerce and service sector.
- Thus the overall impact on the socio economic environment of the region is expected to be beneficial for the local population.

### 7.0 Environment Monitoring

Based on the baseline data collected on various environmental parameters in the study area and the prediction and assessment of impacts due to the proposed project, a comprehensive Environmental Monitoring Program is required to be developed, to satisfy the various statutory requirements for discharges and emissions and also to identify the trend of various environmental parameters.

Environmental monitoring program covers various areas like –

- Ambient air quality
- Water quantity and quality
- Effluent quality
- Noise
- Soil characteristics
- Ecology
- Hazardous waste management
- Safety/Health checkup.
- Carbon and water foot print

#### **7.0 Corporate Environment Responsibility (CER)**

As an additional part of the EMP cost, the proponent proposes to invest 2.62 Crores (0.75% of the project cost of 350 Cr) before commencement of the project, to be considered for implementing the activities in the context of the local scenario of the area.

#### **8.0 Cost for Environment Management Plan**

<b>Sr. No</b>	<b>Environment Aspect</b>	<b>Capital Cost (in Lacs)</b>	<b>Recurring Cost (in Lacs)</b>
1	Air Pollution Control		
	Stack and ESP for 38 x 2 TPH boiler	250.00	15.0
	Stack and ESP for 110 TPH boiler	250.00	15.0
2	Condensate Polishing Unit and ETP upgradation		
	CPU (2500 CMD)	750.00	10.0
	ETP (500 to 1000 CMD)	250.00	10.0
3	Green Belt Development	35.00	5.0
4	Rain Water Harvesting	25.00	2.0
5	Environment Monitoring (Online Monitoring System) carbon and water foot print	30.00	5.65
6	Solid Waste Management	30.00	10.0
7	Occupational Health	10.00	5.0
<b>Total</b>		<b>1630.0</b>	<b>77.65</b>