

EXECUTIVE SUMMARY

Expansion of Sugar factory from
7000 TCD to 9000 TCD



Shri Dnyaneshwar Shakari Sakhar Karkhana Ltd.

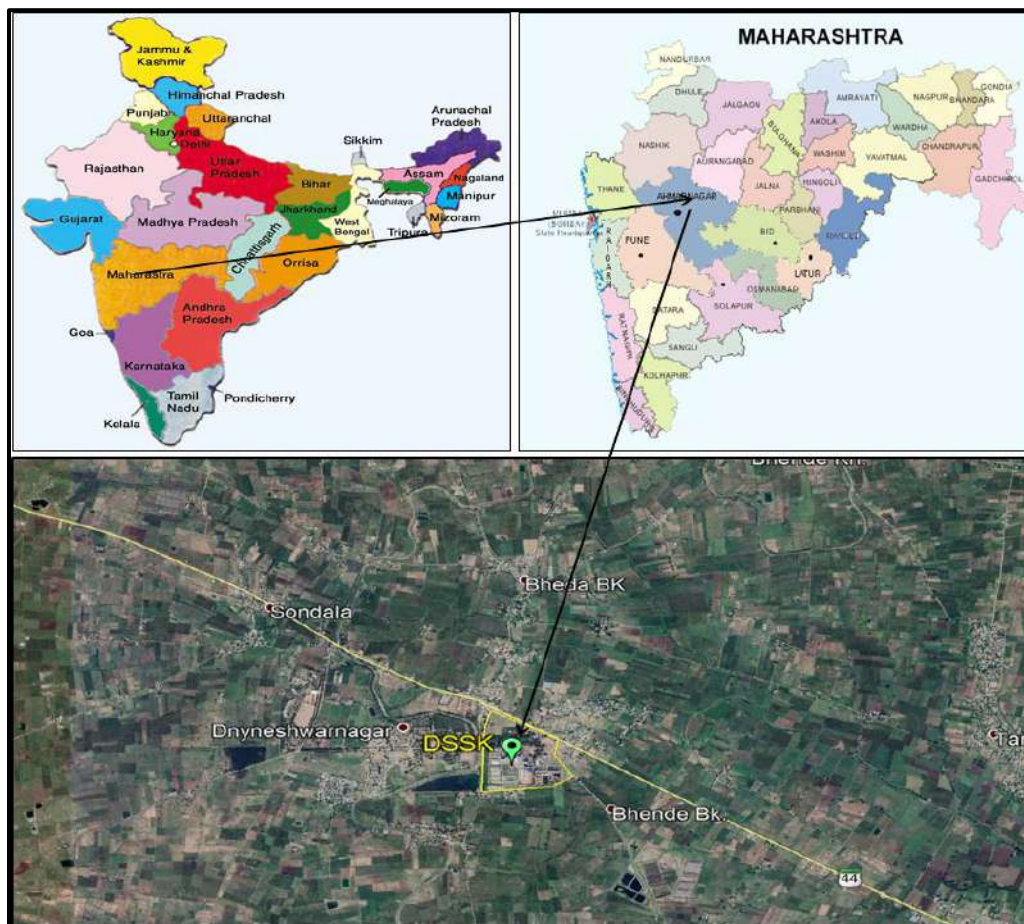
(DSSK)

Bhende, Tal- Nevasa, Dist. - Ahmednagar,
Maharashtra

EXECUTIVE SUMMARY

1.0 Introduction

M/s Shri Dnyaneshwar Shakari Sakhar Karkhana Ltd. (DSSK) is registered under Maharashtra State Cooperative Societies Act 1960 and was established in the year 1973. DSSK is located in Bhende village, District Ahmednagar, Maharashtra at 19°26'59.65"N and 75° 2'13.27"E. DSSK is one of the leading manufacturer of wide range of agro products like sugar, Distillery and thermal power production. Though efforts put on by Late Marutrao Ghule Patil, the factory has efficiently improved their outstanding performance by ensuring higher yield productivity and by adopting energy saving , cost effective measures.



Location of Proposed Project site

Executive Summary

DSSK is operating Sugar plant of sugar crushing capacity of 7000 TCD along with Cogeneration Plant of 31.5 MW. Environment clearance granted by SEIAA, Maharashtra dated 23rd October 2017 for existing 7000 TCD along with Cogeneration Plant of 31.5 MW.

As per EIA Notification 2006 and its amendment of the Ministry of Environment Forests and Climate Change, Govt. of India (MoEF&CC) the proposed project expansion is categorized in 5(j) group, prior environmental clearance is required for expansion of 7000 TCD to 9000 TCD.

Accordingly, the project proponent has submitted prescribed application along with pre-feasibility report to the SEAC -1 Mumbai. The project was considered in the 146th SEAC – I meeting dated 30th January 2018 and Terms of Reference has been approved by SEAC for expansion Based on the approved ToR and standard ToR, Environmental Impact Assessment studies are carried out. Draft EIA and EMP report was prepared and submitting to Maharashtra Pollution Control Board for public hearing.

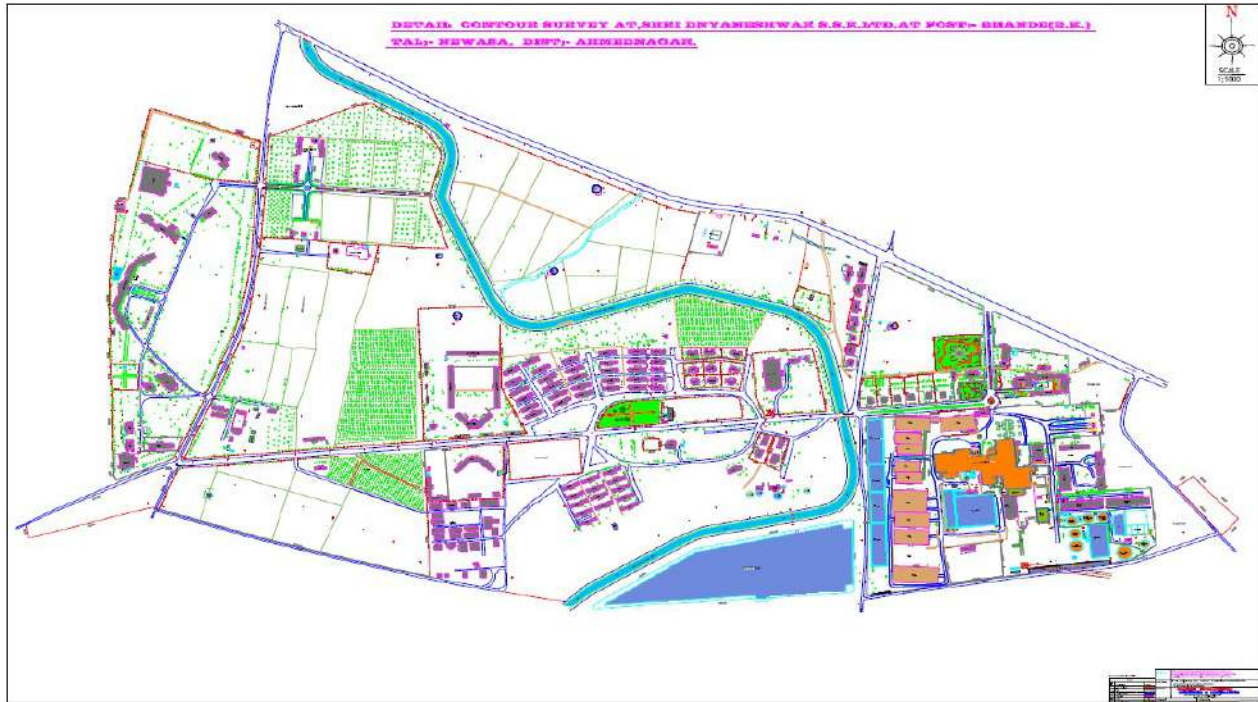
1.2 Project Description

Name and address of project proponent	M/s Shri Dnyaneshwar SSK Ltd, At Village Bhende, Taluka Newasa, District Ahmednagar, Maharashtra
Project	Proposed expansion 7,000 TCD to 9,000 TCD at existing industry premises
New/expansion/ modernization	Expansion
Location of the site	At Village Bhende, Taluka Newasa, District Ahmednagar, Maharashtra
Constitution of the organization	Limited Company
Basic raw material	Sugar Cane (Existing: 11.20 Lakh T; Expansion: 3.20 Lakh T)
Production	Sugar (Existing: 1,28,800 T; Expansion: 36,800 T)
Requirement of additional land area	Existing: 132 hectare; No additional area required
Man power for proposed project	During construction: 50; During operation: 270(Existing) + 80(Additional)
Power Requirement	Power Requirement will be fulfilled from own cogeneration unit
Water requirement and Source	Source :Mula Right Canal Existing :700 m ³ /day Expansion: 200 m ³ /day Total : 900 m ³ /day

Effluent Treatment Plant Capacity	Existing: 1,500 m ³ /day After expansion: Nil Technology : ETP with bio-tower and activated sludge processor
APC measures for Boiler	Existing: Stack height 80m to 40 TPH Boiler with wet scrubber; 76m to 80 TPH Boiler; 85m to 110 TPH boiler with ESP Proposed : NIL
Green Belt Area	45 ha
Investment towards pollution control & Environmental protection measures	Rs.27 lakhs
Project Cost	Rs.15 cores

Existing capacity and proposed expansion of Sugar mill

Sr,No	Production	Unit	Production		Total
			Existing	Additional	
1	Distillery	KLPD	45	--	45
2	Sugar	TCD	7000	2000	9000
3	Co-Gen Power	MW	31.5	-	



1.3 Basic Requirement

Raw materials

The raw materials for this industry are mainly Sugar cane and other materials like bagasse, Sulphur and lime etc.

Raw materials requirement (Sugar)

Sr.no	Raw Material	Quantity/day	Source
1.	Sugarcane	9000 TPD	Local farmers
2.	Sulfur	5.1 T	Locally available
3	Lime	1.6 T	Locally available

Land Requirement:

This is an existing operating sugar plant and adequate land is available within the premises for expansion unit. Total Plot area is 132 Hectares. The breakup of total plot area is described in following table

Land Use breakup

Sr. No.	Land Utilization	Land Area, Ha
1	Industrial Area Sugar Factory and Co-gen	20
2	Distillery	9
3	Open Space, Barrier and Cane yard	22
4	Roads	3
5	Reservoir, Utilities, Tank Farm & Warehouse	3
6	Colony, Cultural Centre, Playground, School, College	19
7	Green belt	45
8	Reserved for future expansion	11
Total		132

Water requirement

Water required for the factory is made available from Mula Right Bank Canal. The factory presently received permission from water Resource Department, Government of Maharashtra.

After expansion, total water requirement will be 5440 m³/day, of which 900 m³ / day is raw water requirement and remaining 4550 m³/day utilized from condensate water.

Domestic Wastewater: Domestic use for factory day workers and colony is provided collectively as 50 cum/day. This will be taken to STP and after treatment used on garden along with other reusable treated wastewater. Existing STP is of 70 KLD capacity

Power requirement

Currently, the power requirement of the factory is fulfilled by MSEDCL and 31.5 MW Cogeneration power Plant. Additional power requirement will be fulfilled from existing cogeneration Unit, which is sufficient to accommodate the need of power.

For back-up, company has installed 2 DG sets of capacity 400 kVA. Additionally, 1 DG sets of capacity 1000 kVA will be installed in future

Use of Public Infrastructure and Manpower

Road: Raw material required for the production and finished goods will be transported through roads only. The project site has good road accessibility. State highway is 0.5 Km away.

Manpower: Staff, skilled and unskilled totally $270 + 80 = 350$ persons will be required, and will be available. For essential people from Safety, Environment and production point of view, a small colony will be provided in vicinity.

Cost & Implementation Cost of the project for proposed expansion is Rs. 15 Cr. For pollution control, capital investment is Rs 1.50 Cr. The time required for the implementation of the project is 1 year after getting all the permissions

1.4 Baseline Environment Studies

To understand the present status of the environment near project site, Baseline Monitoring was schedule during period March 2018 to May 2018. Environmental parameters such as Ambient Air, Ambient Noise, Soil quality, Water Quality, Ecological study, Socio Economic survey were examined priory for the Impact Mitigation study. As per 2011 census data, about 102105 populations is recorded in the project site. It is necessary to evaluate the impacts of the project activities, so that the surrounding area and communities are as far as feasible, insulated from the negative impacts. The primary study area is considered to be within 10 km radius of the project site for baseline environment monitoring.

Topographical sheet (SOI) scale 1:50,000 No., 47 I/14, 47 I/15, 47 M/2 and 47 M/3 were studied for spatial features, ground control points, latitude, longitude and geo-registration of the satellite imageries.

Sr.	Class	Area in Ha	Area in km ²	Area in %
1	Waterbody	15	0.1	0.05
2	Vegetation	3403	34	11
3	Barren Land	939	9.4	3
4	Built-up Land	2831	28.3	9
5	Fallow Land	4166	41.7	13
6	Open Land	4513	45.1	14
7	Agriculture	13841	138.4	44
8	Harvested Land	1708	17.1	5
Total Area		31416	314.2	100

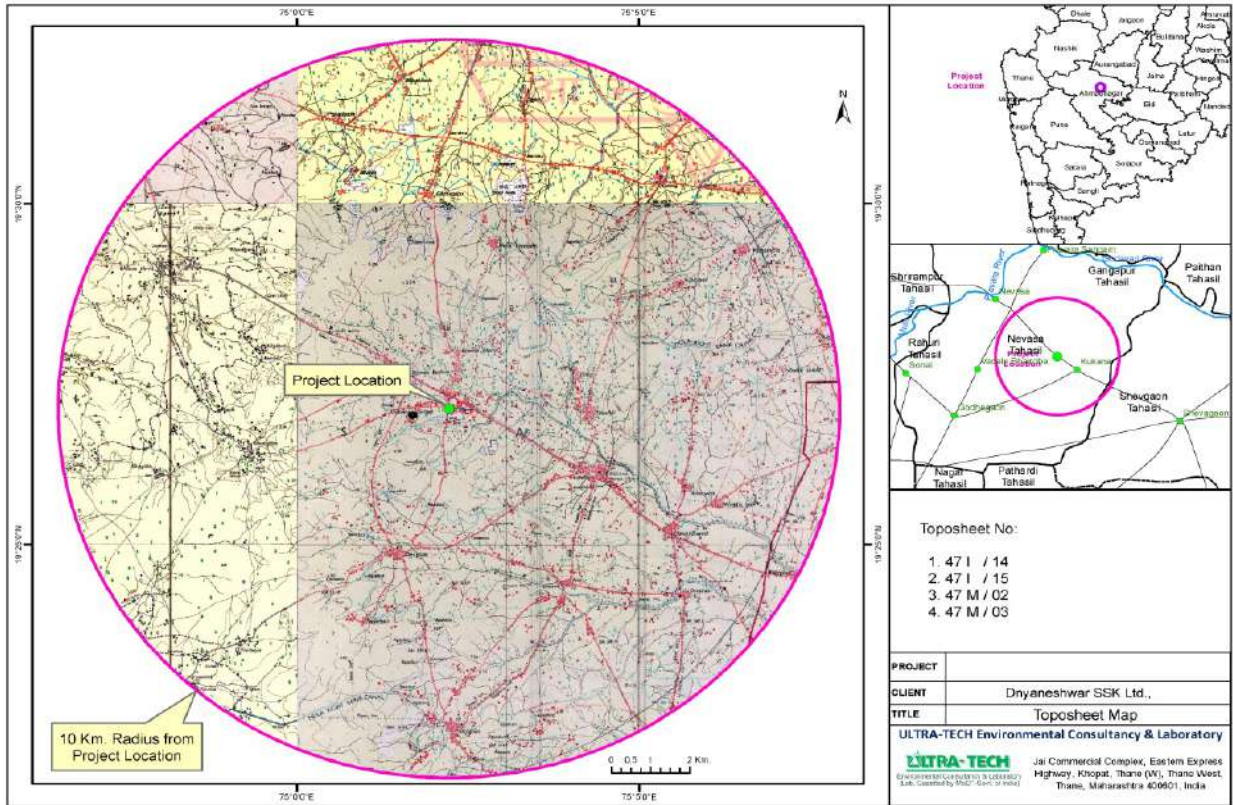


Figure 1: Toposheet 10 km radius

Meteorological data

The climate of study area is hot and dry with scanty rainfall throughout the year. There is only a short winter season and it is not very effective. The study area receives most of its rainfall from the south-west monsoons during the months June to September. Various parameters such as Wind, Humidity, temperature, rainfall were referred for the study purpose. (www.shodhganga.in)

Ambient Air Quality

To understand the AAQ within the study area, nine locations were selected and AAQ monitoring was carried for the period March 2018 to May 2018.

PM₁₀ Maximum 80 µg/m³ value of PM₁₀ recorded at project site (AAQ 1) and minimum 51 µg/m³ value of PM₁₀ recorded at Sultanpur village (AAQ5) during monitoring. Higher value recorded at project site due to the project activities and vehicular movement. The standard limit of PM₁₀ for the 24hr average is 100µg/m³, hence all the values recorded at nine locations are well below the CPCB standard.

PM_{2.5}: Maximum 47 µg/m³ value of PM_{2.5} is observed at AAQ6 and as minimum 25.0 µg/m³ value observed at AAQ6. The standard limit of PM_{2.5} for the 24 hr hourly average is 60 µg/m³, hence at all locations PM_{2.5} concentration was well below permissible standards.

SO₂: Maximum 29 µg/m³ value of SO₂ is observed at AAQ1 and minimum 11 µg/m³ value observed at AAQ3 & AAQ9 as during the study period.

CO: Maximum value 1.5 mg/m³ of Carbon Monoxide is observed at AAQ1 and minimum value 0.5 mg/m³ observed at AAQ2, AAQ5, AAQ7 & AAQ9. All the observed values of CO well within the limit;

NO_x: Maximum value 39 µg/m³ observed at AAQ4 and Minimum value 19 µg/m³ observed at AAQ9.

Ambient Noise Quality

Noise monitoring was carried out as per MoEF and CPCB guidelines. To understand the Noise Quality with respect to zone category, nine 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. Higher noise level recorded at project site due to the project activities and vehicular movement. All values during day and night period are under the permissible standards.

Water Quality

Ground water samples were collected from Nine different locations and surface water samples were collected from 2 locations within the 10 km radius.

Ground water Quality

The analysis results indicate that the pH ranges in between 7.4 to 7.9, which is well within the specified standard of 6.5 to 8.5. The minimum pH of 7.4 was observed at GW8 and the maximum pH of 7.9 was observed at GW4 & GW5. Chlorides were found to be in the range of 21 to 214 mg/l at all locations, the minimum concentration of chlorides (21 mg/l) was observed at GW1, whereas the maximum value of 214 mg/l was observed at GW2. At all locations chloride values are within permissible limit i.e. 250mg/l. Sulphates were found to be in the range of 14 to 228 mg/l. The minimum value (14mg/l) observed at GW1 whereas the maximum value (228mg/l) observed at GW5. At GW5, concentration of sulphates exceeded the permissible limit i.e. 200mg/l. The main reason for the rise in sulphate concentration may be due to high use of pesticides and chemical

fertilizers in agricultural fields. The Total Dissolved Solids (TDS) concentrations were found to be ranging in between 212 to 1152 mg/l, the minimum TDS observed at GW4 (212mg/l) and maximum concentration (1152mg/l) of TDS observed at GW5.

Surface Water Quality

The analysis results indicate that the pH values at SW1 & SW2 were 8.1 & 7.6 BOD at both locations was recorded to be negligible i.e. below Detectable Limit. DO at SW1 & SW2 were recorded as 5.2 & 5.4 mg/l. The TDS at SW1 & SW2 were found as 118 & 252 mg/l. The chlorides values at SW1 & SW2 were 12 & 22 mg/l respectively. Sulphates at SW1 & sw2 were found to be 10 & 27 mg/l. Ammonical Nitrogen at SW1 & SW2 was found to be negligible i.e. Below Detectable Limit. Total Hardness at SW1 & SW2 was 79 & 176 mg/l respectively. Total Coliform Bacteria at SW1 & SW2 were recorded to be 11 and 12 MPN/100 ml.

Soil Quality

The soil being of friable consistency, the bulk density & water holding capacity of in range of 949 to 1231 kg/m³ & 50.4-59.4 respectively. It was observed that the concentration levels of Calcium and Magnesium were 47 to 109 mg/kg and 28 to 75 mg/kg respectively. Sodium and Potassium concentrations were 13 to 63 mg/kg and 2 to 39 mg/kg respectively. Available nitrogen, phosphorous and potassium of the soil samples are found to be in the range of 141-225, 38 - 61 & 62 - 602 kg/ha respectively It was observed that the P₂O₅ and K₂O content in the soil are adequate to classify the soil as poor to fertile and the soil has poor Nitrogen content.

Ecology

As per survey ecological data was recorded based on guidelines of MoEF & CC. It can be stated that project site does not contain any dense vegetation patches but among the observed species some were accounted to be dominant. During floral survey some dominant species area as follows: *Azadiricta indica*, *Acacia auriculiformis*, *Aegle marmelos*, *Butea monosperma*, *Peltophorum pterocarpum*, *Cocus nucifera* etc. certain shrubs viz., *Calatropis sp.*, *Hibiscus sp.*, *Lantana camara* & *Psidium guajava* and herbs like *Alternanthera sessilis*, *Argemone meicana* & *Cassia tora*.

None of the faunal species were recorded as threatened or endangered as per IUCN red list.

Socio Economic Survey

Socio Economic survey was carried out as per guidelines of MoEF & CC. For the study 10 km radius of study area was considered. The study area is spread over the two talukas of Nevasa and Shevgaon. There are total 38 villages in 10 km radius of the project site, of which 36 villages are in

Nevasa taluka and only 2 villages in Shevgaon taluka (Majle Shahar and Bhaygaon). The location is essential rural with moderate in habitation. The nearest town Shrirampur is about 50km km from the project site towards North West. As per 2011 census data, total population recorded is 102105 within 10km radius of study area.

1.5 Impact analysis and Mitigation measures

Impacts on Air Environment: -

- No new boiler or additional capacity TG set shall be proposed in the expansion. Existing 40 TPH, 80 TPH and 110 TPH capacity boilers are in operation.
- To arresting air emission from existing 40 TPH and 80TPH boiler wet scrubbers and adequate stack height is provided to attenuation of air pollution and for 110 TPH boiler ESP with 99.9 % effincnt and 85 m Stack height is provided.
- On line Continuous Monitoring system is installed and connect to Pollution control board as per CPCB guidelines

Emissions from boiler house shall be passed through pollution Control equipment before emitting directly to atmosphere. Adequate green belt is development to minimize particulate emissions. If required water sprinkling methodology shall be adopted on dust prone roads.

No additional boiler is proposed for the expansion.

Air pollution sources and mitigation measures

Sr No.	Source	Fuel	Emissions	Control Measures
1	Existing 40 TPH Boiler	Bagasse	Particulate Matter, So2 and Nox	65 m stack height and wet scrubber provided
2	Existing 80 TPH Boiler	Bagasse	Particulate Matter, So2 and Nox	76 m stack height and wet scrubber provided
3	Existing 110 TPH Boiler	Bagasse	Particulate Matter, So2 and Nox	85 m stack height and ESP provided
4	Existing DG Set (2 x 400 KVA; 1 x 1000 KVA)	HSD	Particulate Matter, So2 and Nox	Adequate stack height provided

Noise: Workers shall be provided with ear muffs and other personal protective equipment's those working in noise prone environment. Developed 45 ha green belt will minimize the noise levels ion industrial premises. Noise generating machineries should be operated in day time.

Soil: Soil quality will be improved by supplying treated water with nutrient addition. Soil samples shall be tested regularly and appropriate mitigation measures shall be adopted based on nutrient result.

Water and Waste Water :

Water required for the factory is made available from Mula Right Bank Canal. The factory presently received permission from water Resource Department, Government of Maharashtra.

After expansion, total water requirement will be 5440 m³/day, of which 900 m³ / day is raw water requirement and remaining 4550 m³/day utilized from condensate water.

Industrial effluent generated will be treated at ETP while domestic sewage generated will be treated at STP. Regular water quality monitoring will be carried out as per CPCB and norms ensured by MoEF&CC.

1.6 Environment Monitoring Plan

Environment monitoring is prescribed during pre-construction, construction and operation phase. During operation phase of project it is important to understand the baseline environment status which is caused due to proposed project activity. Environmental monitoring will comply Air, Water, Soil, Ecology, and Noise parameters as per monitoring compliance norms and schedule.

All parameters will be tested as per standard tools and methods and obtained results should be compared with CPCB norms.

1.7 Environment Management Plan

The Environmental Management Plan (EMP) provides an essential link between predicted impacts and mitigation measures during implementation and operational activities. EMP outlines the mitigation, monitoring and institutional measures to be taken during project implementation and operation to avoid or mitigate adverse environmental impacts, and the actions needed to implement measures.

Solid Waste Management Plan

Sr.	Particulars	Generation T			Disposal
		Existing	Expansion	Total	
1	Bagasse	3,36,000	96,000	4,32,000	Used as fuel for cogeneration boiler
2	Molasses	47,600	13,600	61,200	Used as raw material for distillery unit and remaining will be sold to nearby factory
3	Press Mud	47,600	13,600	61,200	Composting and sale to farmer as soil conditioner
4	ETP Sludge (T/M)	5	1	6	Mixed with press mud used as a manure for landscaping

Cost of Environmental Protection Measures

S. No.	Particulars	Capital Cost lakh	Recurring Cost inlakh
1	Air Pollution Control	-	5
2	Sewage Treatment Plant	-	10
3	Effluent Treatment plant	-	20
3	Green Belt	20	5
5	Occupational health	2	5
6	Rainwater Harvesting	5	2
7	Environment Monitoring	-	5
Total		27	52.0