EXECUTIVE SUMMARY
DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT

PROPOSED EXPANSION OF DISTILLERY PROJECT FROM 45 KLPD TO 100 KLPD
AT
AT VILLAGE BHENDE, TEHSIL - NEWASA AND DISTRICT AHMEDNAGAR

BY

M/S LOKNETE MARUTRAO GHULE PATIL DNYANESHWAR SHAKARI SAKHAR KARKHANA LTD.

PROJECT PROPONENT

M/S LOKNETE MARUTRAO GHULE PATIL DNYANESHWAR SHAKARI SAKHAR KARKHANA LTD.

1.1 Introduction

M/s Loknete Marutrao Ghule Patil Dnyaneshwar Shakari Sakhar Karkhana Ltd**.** is leading manufacturers of a diverse range of Agro products like Sugar, Distillery and Thermal power etc. This Company is registered under Maharashtra State Co-operative Societies Act 1960, on October 19th, 1970 and this unit is established in 1973. Since 1973-74 through great efforts of late Hon. Marutirao Shankarrao Ghule Patil, till today confronting all the problems in every respect this factory has made outstanding progress by ensuring higher yield productivity and energy saving by adopting cost effective advanced technology and methodologies.

LMGPDSSKL is an existing operating Sugar plant of sugar crushing capacity of 9000 TCD along with Cogeneration Plant of 31.5 MW & 45 KLPD distillery unit.

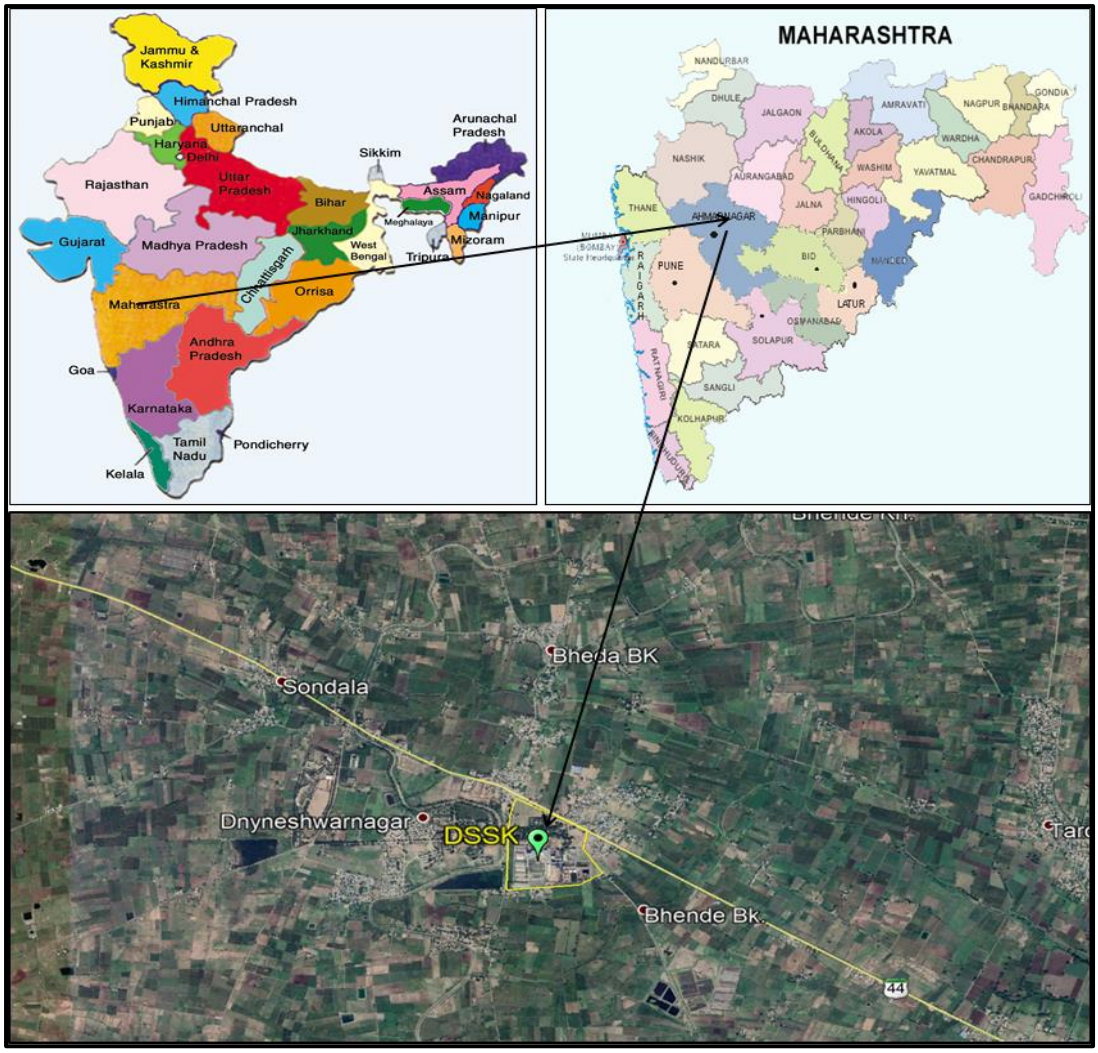
Distillery 45 KLPD unit was established in 1985. Environment clearance granted by SEIAA, Maharashtra dated 23rd October 2017 for existing 7,000 TCD along with Cogeneration Plant of 31.5 MW and sugar expansion 7000 TCD to 9000 TCD on 8th July 2021.

As per EIA notification S.O. 1533 dated 15th September, 2006 and its subsequent amendment of the Ministry of Environment Forests and Climate Change, Govt. of India (MoEF&CC) the proposed project expansion is categorized as B1 category and sector in 5(g) group, prior environmental clearance is required for distillery expansion of 45 KLPD to 100 KLPD.

Accordingly, the project proponent has submitted prescribed application along with pre-feasibility report to the SEAC -1 Mumbai, Maharashtra. Terms of Reference has been approved by SEIAA, Maharashtra dated 22nd August 2022 vide SIA/MH/IND2/82471/2022.Copy of terms of reference is enclosed as annexure II. Based on the approved TOR and standard TOR, Environmental Impact Assessment studies are carried out. Draft EIA report submitted to MPCB for Public hearing. Draft EIA and EMP report was prepared and submitting to Maharashtra Pollution Control Board for public hearing.

Existing capacity and proposed expansion of Sugar mill

Projects Units	Units	Existing Capacity	Additional Capacity	Total
Distillery	KLPD	45	**55 +3 MW**	**100 +3 MW**
Co-Gen Power	MW	31.5	**-**	**31.5**
Sugar Unit	TCD	9000	-	**9000**



Project Location

Details of Existing Sugar, cogeneration and distillery and proposed expansion of distillery

Sr.	Details	Cogeneration	Sugar	Distillery	Distillery
1	Status	Existing	Existing	Existing	Expansion
2	Location	At Village Bhende, Taluka Newasa, District-Ahmednagar, Maharashtra. Latitude 19°26'59.65"N & Longitude 75° 2'13.27"E			
3	Capacity	31.5 MW	9000 TCD	45 KLPD	55 KLPD
4	Working days	160	160	270	330
5	Raw material	Bagasse	Sugar Cane	C-Molasses	C-Molasses, B-heavy and Syrup
6	Quantity of Raw material	3.36 Lakh T	14.40 Lakh	C- Molasses 48600 MT	B- heavy 58550 MT C- Molasses: 69807 MT
7	Products	Power 31.5 MW	165600 MT Sugar	ENA/RS/Ethanol 45 KLPD	ENA/RS/Ethanol 55 KLPD +3

				MW power
8	Boiler Capacity	80 TPH & 110 TPH	12TPH	35 TPH
9	Boiler Fuel	Bagasse	Bagasse	Conc. Spent wash & Bagasse
10	Water Source	Mula Right Bank canal		
11	Water Requirement	Sugar and Cogeneration: After expansion: 900 m^3/day	623 m^3/day	B- heavy 294 m3/day C- Molasses;480 M3/day
12	Land Requirement	Total Land: 11,63,509.15 Sq.m		
13	Green Belt Area	433181.57 sq.m		
14	Effluent Treatment facility	Existing: Total 761 m3 effluent treated in ETP & 500 m3 excess Spray Pond water (1261 m3/day) After expansion: Total 850 m3 effluent & 587 m3 excess Spray Pond water would be treated in full-fledged ETP capacity 1500 m3/day.	450 Spent wash treated through Biomethanation followed by MEE & bio composting	300 M3/day Spent wash treated MEE Followed by 35 TPH incineration Boiler. 378 M3/day Condensate, spent lees and CT /Boiler Blow down will be treated in CPU having capacity of 400 M3/day.
15	APC measures for boiler	Existing: 76 m Stack height to 80 TPH Boiler & 85m to 110 TPH boiler with ESP.	40 m stack & wet Scrubber	60 M stack Height and ESP

1.2 Basic Requirements

Raw materials

Existing 45 KLPD distillery operation for the 270 days. Proposed Expansion with 55 KLPD Distillery will be operated round the year for 330 days. Sugar mill crushing capacity is 9000 TCD and crush 14.40 lac tonnes of cane. The C- Molasses Production @ 4.25 % of cane worked out 61200 MT per season & B-molasses production @ 6.5 % of cane works out to 93600 MT per season.

B heavy molasses will be available for the distillery for production of Ethanol for 242 days. Thus, for balance 58 days final molasses is proposed to be purchased from nearby sugar mills.

Land Requirement:

This is an existing operating sugar, cogeneration and distillery plant and adequate land is available within the premises for expansion unit. Total Plot area is 116.35 Hectares.

Water requirement

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

- For 45 KLPD distillery: 623 m^3/day
- Expansion 55 KLPD: B- heavy Molasses: 294 M3/day, C- Molasses 480 M3/DAY

Power requirement

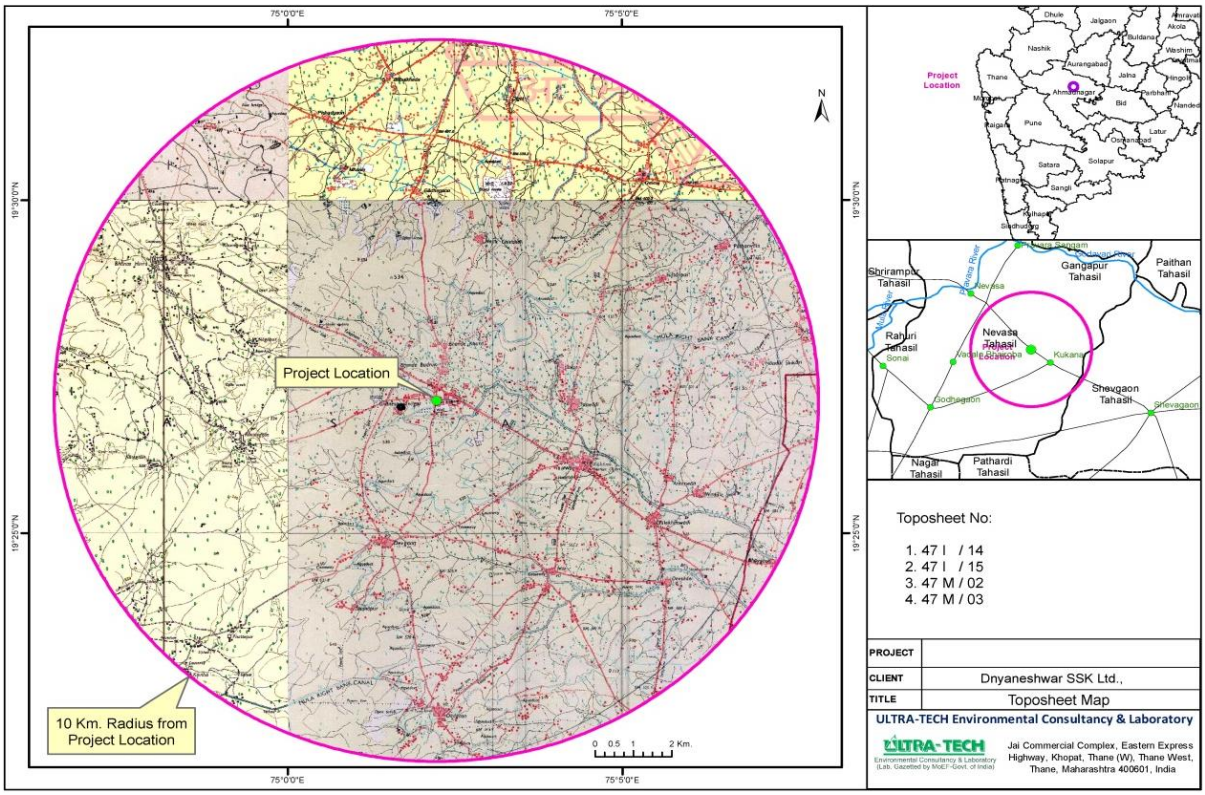
The steam requirement of existing distillery is 9.0 MT/hr for the existing 12TPH Boiler and for expansion 10.97 TPH steam will be from proposed 35 TPH Boiler.

Manpower: Staff, skilled and unskilled totally 40 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. 131.67 Cr. For pollution control, capital investment is Rs 1795 lakhs and O & M of Rs 32.25 lakh. The time required for the implementation of the project is 1 year after getting all the permissions

1.3 Baseline Environment Studies

To understand the present status of the environment near project site, Baseline Monitoring was schedule during period October to December 2022. 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.

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 October to December 2022.

PM_{10}: Maximum 92 µg/m^3 value recorded at project site (AAQ 1) and minimum 53 µg/m^3 value recorded at : ZP high School, Nagik Chincholi Village (AAQ3) during the monitoring. Higher value recorded at project site due to the project activities and vehicular movement. The standard limit of PM_{10} for the 24 hr hourly average is 100 µg/m^3, hence all the values recorded at nine locations are well below the CPCB standard.

$PM_{2.5}$: Maximum 48 µg/m^3 value of $PM_{2.5}$ is observed at AAQ6 and as minimum 23.0 µg/m^3 value observed at AAQ3 (ZP high School, Nagik Chincholi Village). The standard limit of $PM_{2.5}$ for the 24 hr hourly average is 60 µg/m^3 , hence at all locations $PM_{2.5}$ concentration was well below permissible standards.

SO_2: Maximum 24 µg/m^3 value of SO_2 is observed at AAQ1 and minimum 7 µg/m^3 value observed at AAQ7as during the study period. Permissible limit of SO_2 is 80 µg/m^3 All the values recorded at different nine locations are below permissible limit.

NOx: Maximum value 30 µg/m^3 observed at AAQ1 and Minimum value 13 µg/m^3 observed at AAQ5.

CO: Maximum value 1.6 mg/$m^3$of Carbon Monoxide is observed at AAQ1 and minimum value 0.5 mg/m^3observed at AAQ2, AAQ5, AAQ7 & AAQ8. All the observed values of CO were within limits.

All parameters viz. PM10, PM2.5, SO2, NOx and CO are well within the limit of NAAQ standard.

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 8 different locations and surface water samples were collected from 5 locations within the 10 km radius.

Ground water Quality

Ground Water Quality results were compared with IS: 10500 (2012) drinking water quality standards

- The analysis results indicate that the pH ranges in between 7.3 to 8.0, which is well within the specified standard of 6.5 to 8.5.

- Chlorides were found to be in the range of 26 to 249 mg/l at all locations,
- Sulphates were found to be in the range of 18 to 251 mg/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 248to 1208 mg/l, the minimum TDS observed at Sondala Village (248mg/l) and maximum concentration (1208 mg/l) of TDS observed at Chilekhanwadi Village.

Surface Water Quality

Obtained results are compared with CPCB Surface Water Quality Standards

- The analysis results indicate that the pH values in the range 7.7 to 8.2
- BOD was recorded in the range of BDL to 3 mg/l
- DO were recorded in range of 5.3 to 6 mg/l.
- The TDS were found in the range of 118 to 648 mg/l
- The chlorides values were found in the range of 17 to 97 mg/l. Sulphates were found to be 12to 124 mg/l
- Total Hardness were found to be 86 to 392 mg/l
- Total Coliform Bacteria were recorded to be 5 to 1600 MPN/100 ml.

Soil Quality

The pH of the soil in the study area is moderately alkaline to strongly alkaline in reaction having pH is in the range of 7.6-8.3 The (Electrical Conductivity) of the soil extract in the study area is in the range of 0.411 to 0.602 mS/cm**.** CEC is in between 26.3 and 28.7 meq/100g, moreover it can be interpreted that soil has low to Moderate productivity Moderate to high absorption capacity. It was observed that the concentration levels of Calcium and Magnesium were 61 to 125 mg/kg and 61 to71 mg/kg respectively. Sodium and Potassium concentrations were 55 to 133 mg/kg and 21 to 66 mg/kg respectively. Analysis shows that the concentration of organic matter is in the range of 0.2 to 0.5 %. Available nitrogen, phosphorous and potassium of the soil samples are found to be in the range of 115-174, 57-80 & 153-263 kg/ha respectively.

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 mecicana* & *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.

1.4 Impact analysis and Mitigation measures

Mitigation measures

Air Environment: -

Air pollution sources and mitigation measures

Sl. No.	Source of air pollution	Fuel	Emissions	Chimney height (M)	APC equipment provided
1	**Existing 12 TPH boiler**	Bagasse +Biogas	PM, So2 & Nox	40m	Wet scrubber
2	**Proposed 35TPH Incineration Boiler**	Conc. Spent wash & Bagasse	PM, So2 & Nox	60m	ESP
3	**Fermentation process**	-	CO2		74 TPD Co2 Bottling plant

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.

- For 45 KLPD distillery: 623 m^3/day
- Expansion 55 KLPD: B- heavy Molasses: 294 M3/day, C- Molasses 480 M3/DAY

Spent wash is the main effluent in Distillery industry. Other miscellaneous effluents generated from distillery unit are cooling tower blow down, boiler blow down, and condensate water collected from MEE.

1.5 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.

1.6 Corporate Environment Responsibility

The total project cost is Rs. 131.67 Cr. 1.0% of the total cost it becomes Rs.1.316 Cr. Hence, we have dedicated Rs 1.32 Cr for Corporate Environment Responsibility (CER) activities to be carried out in surrounding villages based on need assessment.

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.

Cost of Environmental Protection Measures

S. No.	Particulars	Capital Cost lakh	Recurring Cost in lakh
1	Air Pollution Control Stack, ESP and CO2 Bottling plant	1000.00	10.00
2	MEE	250.00	5.0
3	Condensate Polishing Unit	500.00	5.0
4	Occupational health & Safety	5.0	5.0
5	Strom Water Drain system & Rainwater Harvesting Plan	15.0	5.0
6	Environment Monitoring (Air, Water , Noise and soil) & Online Monitoring system	20.0	2.25
Total		**1795.00**	**32.25**