EXECUTIVE SUMMARY OF EIA

Baseline study period March 2023 to May 2023

PROPOSED 65 KPD MOLASSES AND SUGARCANE SYRUP/JUICE BASED DISTILLERY

Tal. Jat, District Sangli, Maharashtra

Proposed By

M/S. SHRIPATI SUGAR & POWER LTD.

ENVIRONMENTAL CONSULTANT AND LABORATORY

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Solutions for Sustainable Tomorrow

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QCI-NABET, Lab NABL, MOEF & CC, OHSAS 18001:2007 approved

EXECUTIVE SUMMARY

1. Project in brief

Considering the requirements of fuel ethanol to be blended in petrol as per the National Biofuel Policy of Indian government and simultaneously increase in requirement of industrial and potable alcohol, M/s. Shripati Sugar & Power Ltd. has decided to install 65 KLPD Molasses and Sugarcane Syrup/Juice based distillery. The factory will operate for 330 days in a year. The spent wash generated during the process of distillation will be treated in multiple effective evaporators to concentrate the spent wash and it will be used in incineration boiler as a fuel. The industry will be a ZLD unit.

2. Project location

The proposed project will be located at Sr. No. 225/2, 302, 303, 304, 305, 307, 320, 321 Village Daphalapur, Kudnur, Tal. Jat, Dist. Sangli, Maharashtra. Unit is geographically located at Latitude 16°57'52.29"N & Longitude 75° 3'57.41"E situated around 664 m above MSL. There are no Eco-sensitive zones like Tropical Forests, Biosphere Reserves, National Parks, Wild Life Sanctuaries, and Coral Formation Reserves within 10 km Influence Zone of the Project site. Stoney waste Reserve forest from 3.5 km onwards in east direction. Open scrub Ranjni Reserve Forest in waste 8 km onwards in West.

Environmental setting of the project site is given in below table.

Table 1: Environmental Setting in and around the proposed Project site

Sr. No.	Particulars	Description
1.	Project Location - Geographical Coordinates	Latitude: 16°57'52.29"N Longitude: 75° 3'57.41"E
2.	Average altitude above MSL	664
3.	Toposheet number	47 K/16, 47 L/13, 47 O/4, 47 P/1
4.	Nearby Habitation	Mirwad: 3.18 km towards NE
5.	Nearest Railway Station/ Junction	Agran Dhulgaon in W: 15.3 km
6.	Nearest Airport	Kolhapur airport in SW: 90 km
7.	Nearest IMD station	Kolhapur: 90 km
8.	Nearest Water body	Mirwad lake: 0.62 km Water stream in South: 0.7 km kokale water stream: 4.5 km
9.	Nearest Road	Sangli Salmalgewadi road: 0.40 km
10.	Nearest Highway	State highway: 3.5 km
11.	Any Historical Place	NA
12.	Any Archaeological monuments	NA
13.	Ecological sensitive area / Reserve Biosphere within 5 km / Reserve Forest	Stoney waste Reserve forest from 3.5 km onwards in east direction. Open scrub Ranjni Reserve Forest in waste 8 km onwards in West.
14.	Seismic Zone	III

Figure 1: Map showing general location of the proposed project on Maharashtra Map

Figure 2: Google image of the Project Site

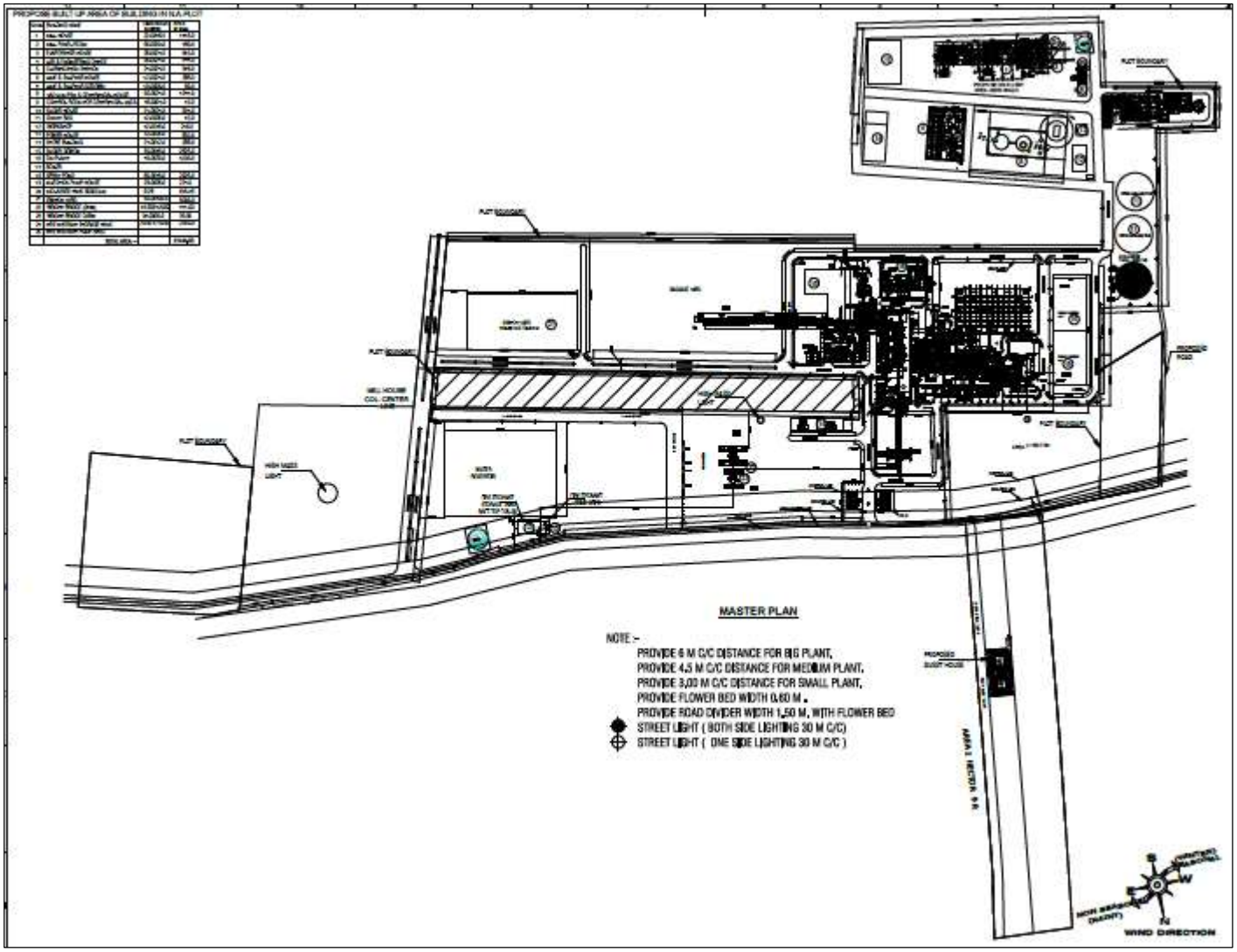

Figure 3: Plant layout

3. Project information in brief

Table 2: Salient features of integrated project

Particulars	**Details**
Project	Proposed 65 KLPD molasses and sugarcane syrup/juice based distillery
Location	At 225/2, 302, 303, 304, 305, 307, 320, 321 village Daphalapur, Kudnur, Tal. Jat, Dist. Sangli, Maharashtra
Screening category *(as per SO 1533 timely amended)*	5 (g) Distilleries
Product	RS/ENA/AA/Fuel Ethanol: 65.0 KLPD Impure spirit of 3.0 KLPD Head spirit conforming to I.S.I Grade II of 323
Basic Raw Material	Molasses, Cane juice/syrup, B-Heavy molasses, etc.
Operation days	330 (100 % capacity utilization)
Total plot area	146370 sq.m.
Green belt area	48300 sq.m.
Water requirement	Total Water requirement: 675 CMD Fresh water requirement: 148 CMD Recycled water: 527 CMD
Source of water	Krishna river Mhaisal scheme: Mirwad lake, Water stream in South and Kokale water stream
Boiler	18 TPH incineration boiler
Stack details	Stack height of 40 m
Steam requirement	16.62 TPH
Fuel for Boiler	Bagasse: 2.4 TPH, Coal 1.1 TPH and Conc. Spent wash: 4.0 TPH
Power generation	T.G Capacity of 2.0 MW
Power requirement	1.28 MW from 2.0 MW TG
Man-power requirement	**Total manpower requirement: 310** • Construction phase: 100 Skilled: 20 Unskilled: 80 • Operational phase: 210 Skilled: 110 Unskilled: 100
Total project cost	88.15 Cr.
EMP capital cost	Capital Cost: Rs. 47.20 Crore

	Operational Cost: 98.5 Lakh/Annum
CER Cost	1.76 Crore (Green field project: 2% of the total project cost)
Total effluent generation	Effluent: 586 CMD and Sewage: 13 CMD
CPU capacity	700 CMD
STP capacity	15 CMD STP
Solid & Hazardous Waste Generation	CPU sludge: 0.6 TPD Bagasse Ash: 1.13 TPD Spent wash ash: 12.6 TPD Coal ash: 3.9 TPD STP Sludge: 1.3 TPD Yeast Sludge: 15 TPD

4. Process Description

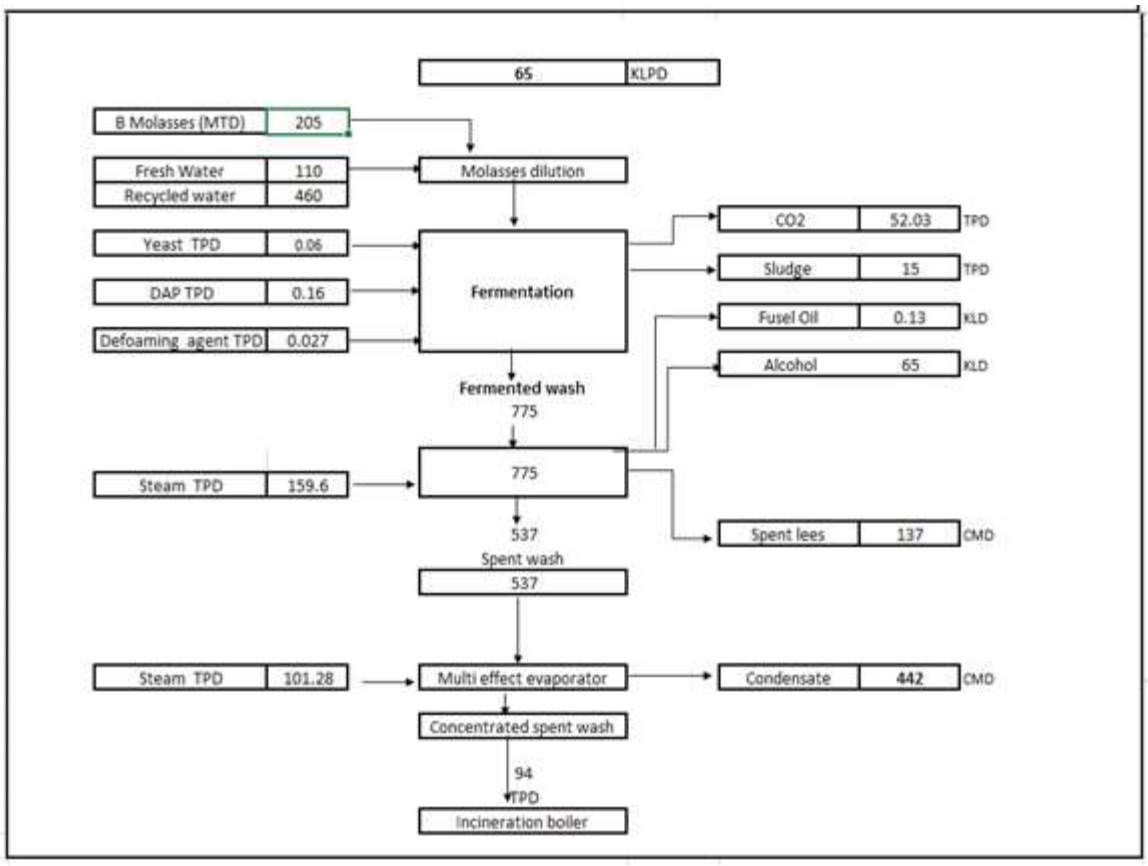

Figure 4: Manufacturing flowchart for molasses based distillery

5. Description of the environment

The study area is as per approved ToR vide File No. **No. IA-J-11011/181/2023-IA-II(I)** dated 9th May 2023. The baseline study was carried out from 1st March 2023to 31th May 2023 within 10 km radius. Baseline study has been conducted as per EIA Manual of the MoEF&CC and

methodologies mentioned in Technical EIA Guidelines Manual for Distilleries by IL&FS Ecosmart Ltd., approved by MoEF&CC.

Table 3: Baseline monitoring parameters and frequency

Components	Parameters	Frequency	Methodology adopted
Ambient Air Quality	As per the NAAQS dated 16th November 2009: $PM_{2.5}$, PM_{10}, SO_2, NO_x	Ambient air quality samples are monitored at 11 locations for 24 hours twice a week for the study period.	PM_{10} / $PM_{2.5}$: Gravimetric method SO_2: Modified West and Gaeke Method. (IS: 5182, Part II) NOx: Jacobs and Hochheiser Method. (IS 5182 Part VI)
Meteorology	Wind Speed & Wind Direction, Temperature, Relative Humidity and Rainfall	Continuous hourly recording.	Secondary data from Indian Climate and IMD has been used.
Water quality	Physical, Chemical and Biological parameters.	8 Locations – Ground Water 2 locations – Surface water	Standard methods for Examination of Water and Wastewater' published by American Public Health Association (APHA)
Ecology	Flora & Fauna within study area (Terrestrial & Aquatic)	Once in a study period General in 10 km radial study area	Data collected around the project site through field visits. Listing of floral and faunal species. IVI Study
Ambient Noise	Noise levels in dB(A)	1 Locations – project site 10 locations – nearby village	IS: 4954 as adopted by CPCB.
Soil	Physico-chemical parameters as per BIS standards	10 Locations–impact zone Once during study period	BIS specifications
Socio-economic Data	Socio-economic characteristics of the local population in the Study Area.	Once in a study period	Based on data collected from the year 2021 Census Abstract.
Land use pattern	Land use for different categories	Once in a study period Secondary Data	Based on satellite imagery LISS –III and area calculation for statics generation.

			Ground truth study/ Field survey
Geology and Hydrogeology	Lithological types, drainage basins, etc.	Once in a study period	Field observations in 10 km study area and from secondary data from authenticated sources like GSI, SoI, etc.

6. Anticipated Environmental Impacts

Anticipated environmental impacts due to operation of the proposed project are given in below **Table 4**

Table 4: Anticipated Impacts

Environmental Facets	Anticipated Impacts
Air Environment	Probable increase in concentration of air pollutants due to process, fugitive, and utility emissions.
Water Environment	Generation of industrial & domestic wastewater.
Land Environment	Impacts on land due to improper disposal of hazardous/ solid waste.
Ecological Environment	Positive as greenbelt of appropriate width will be developed and maintained by the factory in the area. No impacts are envisaged on aquatic flora & fauna as there will be zero effluent discharge outside the plant premises.
Social Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.
Economic Environment	Positive impacts on economy of the region and the country as the Alcohol will be exported and revenue generation.
Noise Environment	Minor increase in noise level within the project area.
Occupational Health & Safety	Major health hazards are identified in worst case scenario.

7. Environmental Monitoring Program

Table 5: Environmental monitoring schedule

Sr. No.	Particulate	Parameters	Method of sampling/monitoring	Number of location	Frequency
1.	Ambient air quality	PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC	24 hours continuously (As per NAAQS)	Four locations (CPCB/MPCB guidelines)	Monthly
2.	Stack gas	PM, SO_2 and NOx	Online monitoring system	One stack	Monthly
3.	Work place	$PM_{2.5}$, SO_2, NOx, O_3	IS 5182 (as per factory act) (STEL &TWA)	Two locations (near process area)	Monthly

				One location (outside process area near vent)	
4.	Waste water	pH, EC, TDS, O&G, SS, COD, BOD, Chloride etc. As per BIS: 10500	Composite sampling	Inlet & outlet of CPU	Monthly
				Online Monitoring machine at CPU	Daily
5.	Surface water and ground water	pH, EC, TDS, SS, COD, BOD, Chloride, E coli etc.	Grab sampling As per BIS: 10500	3 location Ground water and 1 location Surface water	Half yearly
6.	Solid waste	pH, EC, metal, NPK	Grab and Composite sample	Two location	Half yearly
7.	Soil	N, P, K, moisture, EC, heavy metals etc.	As per BIS standards	Three location	Half yearly
8.	Noise	Noise levels	IS: 4954-1968 as adopted by CPCB	Three location (Day & Night)	Monthly
9.	Green belt	Survival rate of plants and shrubs	Observation	In and around the plant site	Monthly
10.	Occupational health	Health and fitness check-up of employees	-	All worker	Yearly/ twice a year
11.	Emergency preparedness	Fire and Safety	-	Mock drill records	Monthly

8. Additional Studies

The following Additional Studies are to be done in reference to the awarded Terms of References issued by MoEF&CC, New Delhi.

- Public Consultation
- Risk Assessment

9. Project Benefits

- Creation of job opportunity and other business activity will improve the economy and attitude of the public towards education and health. This may result in the creation of additional education and health care facilities in the surrounding rural areas.
- Entire project is proposed to be set up based on the stand-alone commercial viability of the project.

- Proposed distillery is aimed to improve the technical efficiency of the unit in terms of waste recycle, steam utilization and power consumption.
- The proposed project will be beneficial in generating various employment opportunities for skilled as well as unskilled individuals. The factory will prefer nearby local people for employment.
- CO2 generated during fermentation process will be captured and bottled and sold. Hence, the process will be carbon free.
- The project proponent will dedicate approx. 1.5% of project cost i.e. INR 120 crore for the Corporate Environment Responsibility (CER) activities, which will be utilized for various physical and social infrastructure developmental programme such as Lighting by LED bulb/ solar panels, distribution of laptops, table and chairs in schools etc. in the nearby rural areas.

10. Environmental Management Plan

Following mitigation measures shall be adopted by factory to minimize the impact of project on the surrounding environment.

Table 6: EMP for various Environmental Attributes

Activity	Description	Responsibility	Record	Cost in Lakhs
Water pollution management	• Domestic fresh water for employees • Sprinkling of water to suppress dust • Sewage generated from construction activities • Commissioning of CPU and STP • Spent wash/ Raw stillage generation • Spent wash storage lagoon	Process manager/ Distillery manger/ Environment Officer	• Monitoring of flow rate to CPU & STP • Analysis of characteristics of effluent to access performance of CPU • Record of STP & CPU performance. • Record of third party laboratory analysis • Regular inspection record, control & necessary maintenance	350
Air pollution management	• Commissioning of ESP • D.G set emissions • Release of VOC and gases in ambient air		• Ambient air monitoring record. • Emissions from the stack will be monitored continuously	4150

			• Record of ESP performance • Regular inspection, control & necessary maintenance	
Solid waste management	• Bagasse and spent wash ash in storage area • STP, CPU and Yeast sludge in manure • Spent oil recycling		• Records of generation of solid waste • Supervision of storage and disposal solid waste • Monitoring ash dust and suppression by water sprinkling • Record of transport vehicles carrying solid waste	5
Greenbelt development	• Tree plantation in tiers and along the road with native and thick canopy forming plants		• Record of number of trees planted • Supervision on survival rate ensuring healthy and dense greenbelt • Record of irrigation facility	32
Rainwater harvesting and storm water drainage management	• Roof top rain water harvesting facility • Paved and unpaved area rain water harvesting • Drainage lines • Harvested water storage tank and pits		• Record of harvested rainwater. • Supervision and maintenance of installed system • Monitoring of rainwater system to avoid mixing of effluent into storm water • Monitoring and supervision of drainage lines • Record of flow of harvested rain water in storage tank and pits • Record of recycling of rain water for various industrial activities	25

Occupational Health and Safety	• Safety norms for the storage of the chemicals & products • Supervision of safe working of the employees • PPE's e.g. safety helmet, goggles, gumshoes, ear plugs, mask etc. will be provided to the workers • First aid facilities shall be made available • Firefighting equipment • Disaster management plan		• Record and supervision of PPE's provided • Record of all safety signs • Record of First aid kits • Record of medical check up • Record, supervision and maintenance of firefighting equipment's • Supervision and record of good house keeping • Record of near miss report • Record of any accident or disaster in factory • Record of medical professionals, nearby police station, collector with name and phone numbers. • Supervision of working of alarm for emergency	50
CER	• Allotment of 1.76 Cr. fund for CER activities in nearby needy villages	Chairman/Managing Director /Process manager/ Distillery manger/ Environment Officer	• Separate record of CER activity carried out year wise • Record of fund allocated and spent on CER activities • Record of name and activities of the villages	176