

**Executive Summary**

**Environment Impact Assessment  
Report  
for  
Expansion of Sugar Factory from  
5500 TCD to 7500 TCD  
at Post Sonai, Taluka Newasa,  
District Ahmednagar,  
Maharashtra state.**

**M/s Mula Sahakari Sakhar Karkhana Ltd,  
(Mula SSK Ltd.)  
Village Sonai, Taluka Newasa, District  
Ahmadnagar, Maharashtra.**

## 1.0 Introduction

This EIA report has been prepared for Expansion of Sugar Factory from 5500 TCD to 7500 TCD by M/s. Mula Sahakari Sakhar Karkhana Ltd, at Village Sonai, Taluka Newasa, District Ahmadnagar, Maharashtra. (MSSKL). MSSKL proposed 5500 TCD to 7500 TCD at Sonai Tal Newasa District Ahemdnagar Maharashtra.

MSSKL is a registered Cooperative society under the Maharashtra Cooperative Society Act 1960 under section 9 (1) and its registration number is ANG/PRG/(A) -30-70 DATED 27/2/1970.

The environment Clearance has been received for 5500 TCD, 30 MW cogeneration power plant and 45 KLPD molasses based distillery. MoEF&CC vide letter No. J-11011/131/2014-IA II (I) dated 22.01.2016). M/s. Mula Sahakari Sakhar Karkhana Ltd is planning to expand sugar unit from 5500 TCD to 7500 TCD (2000 TCD expansion) at existing premises through modernization of its existing boiling house.

EIA Report is prepared based TOR approved by SEAC – I, Mumbai in 144<sup>th</sup> Meeting held on 18<sup>th</sup> November 2017 .and standard TOR of MOEF & CC.

## 2.0 Project Description

### 2.1 Project Location

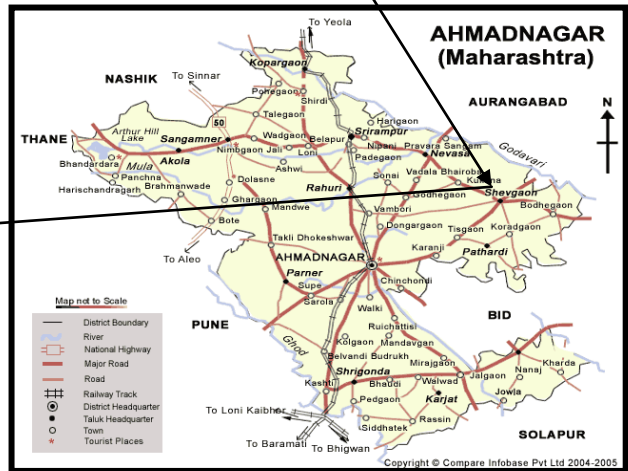
The project is located at Gat no. 848 -865, 867-872, 885-890, 896 & 919 to 921 (partially), at Post Sonai, Tehsil Newasa, District Ahmednagar, Maharashtra state.

The site is located at rural surroundings and is about 17 km from Railway Station (Rahuri) and 40 km from Ahmednagar. The site is near SH 60 (Nagar-Aurangabad) and on the Ghodegaon-Sonai-Rahuri Road access.

Mula Sahakari Sakhar Karkhana Ltd.

Expansion of Sugar Factory from 5500 TCD to 7500 TCD

Executive Summary



M/s. Mula Sahakari Sakhar Karkhana Ltd, at Village Sonai, Taluka Newasa, District Ahmadnagar, Maharashtra. (MSSKL).

## 2.2 The Salient Features of Project Site

The salient features of the project site are presented in detail below

SN	Particulars	Description																																	
1	Project Location	M/s Mula SSK Ltd. Gat no. 848 -865, 867-872, 885-890, 896 & 919 to 921(some partially), At Post Sonai, Tal. Newasa, Dist. Ahmednagar, Maharashtra state.																																	
2	Project capacity	<table border="1"> <thead> <tr> <th>Unit</th> <th>Existing</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>Sugar Unit</td> <td>5500 TCD</td> <td>2000 TCD</td> </tr> <tr> <td>Cogeneration</td> <td>30 MW</td> <td>30 MW</td> </tr> <tr> <td>Distillery</td> <td>45 KLPD</td> <td>45 KLPD</td> </tr> </tbody> </table>	Unit	Existing	Proposed	Sugar Unit	5500 TCD	2000 TCD	Cogeneration	30 MW	30 MW	Distillery	45 KLPD	45 KLPD																					
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3	New/expansion/modernization	Expansion through modernization (Addition of Boiling House)																																	
4	Existing Environmental Clearance	EC received from MoEF&CC vide letter No. J-11011/131/2014-IA II (I) dated 22.01.2016 for 5500 TCD sugar, 30 MW cogeneration power plant and 45 KLPD molasses based distillery.																																	
5	Constitution of the organization	Co-Operative																																	
6	No. of working days in a year	Sugar plant : Season-180 days Cogeneration-210 days, Distillery:=270 days																																	
7	Basic raw material	For Sugar Unit: Sugarcane 7500 TCD and allied chemicals <table border="1"> <thead> <tr> <th rowspan="2">S. No.</th> <th rowspan="2">Raw Material</th> <th colspan="3">Quantity/day</th> </tr> <tr> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Sugarcane TPD</td> <td>5500</td> <td>2000</td> <td>7500</td> </tr> <tr> <td>2.</td> <td>Sulfur T</td> <td>3</td> <td>1</td> <td>4</td> </tr> <tr> <td>3.</td> <td>Lime T</td> <td>11</td> <td>4</td> <td>15</td> </tr> <tr> <td>4.</td> <td>Phosphoric acid T</td> <td>0.5</td> <td>0.2</td> <td>0.7</td> </tr> <tr> <td>5.</td> <td>Bagasse T</td> <td>1650</td> <td>350</td> <td>2000</td> </tr> </tbody> </table>	S. No.	Raw Material	Quantity/day			Existing	Proposed	Total	1.	Sugarcane TPD	5500	2000	7500	2.	Sulfur T	3	1	4	3.	Lime T	11	4	15	4.	Phosphoric acid T	0.5	0.2	0.7	5.	Bagasse T	1650	350	2000
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5.	Bagasse T	1650	350	2000																															
8	Requirement of land area	No additional land required for proposed project. Existing 280 acres is available																																	
9	Man power for proposed project	Existing manpower : 1081 During construction of additional boiling house : 100 For proposed Expansion no additional manpower will be required.																																	

10	Boiler capacity and fuel	Existing: 80 TPH & 85 TPH - 2 Nos. with stack height 70 & 75 respectively. Proposed : Not required
	Water Supply	From Mula Right bank canal, permission available.
11	Water requirement, m <sup>3</sup> /d	Existing: Sugar unit: 965 KLD, Co gen Unit:798 KLD,Distillery Unit: 604 KLD Total: 2367 KLD For Expansion: 760 KLD (For Sugar unit, after expansion), Co gen Unit: 798 KLD, Distillery Unit: 604 KLD Total: 2162 KLD
16	Effluent Treatment Plant	Existing ETP having capacity 700 m <sup>3</sup> and primary ETP -130 m <sup>3</sup> which is sufficient for the expansion.
17	Green Belt Area	Existing: 96 Acre, Proposed: No additional proposed. the number of standing trees is 60,668, additionally proposed number of plantation is 4,000 during next 5 years
18	Project cost	Cost of proposed project Rs. 11 Crores for expansion
19	Railway Station	17 km - Rahuri
20	Road	Nagar - Aurangabad highway SH 60 : 5 Km
21	Nearest Town	Newasa :30 km
22	Archeological monuments within 10 Km	Not Any
23	Eco sensitive area, protected area	Not Any

### 3.0 Description of the Environment

The baseline status of environmental quality in the vicinity of project expansion site serves as a basis for identification and prediction of impact. The data were collected from both primary and secondary sources. Primary source data were collected through environmental monitoring in the study area. Primary survey involved climate, hydro geological aspects, atmospheric conditions, water quality, soil quality, vegetation pattern, ecology, socio-economic profile and land use of the study area.

The environmental influence due to the project is likely to be restricted to 10 km region around the factory site. Therefore, the study area for monitoring of environmental quality includes 10 km region around the project site.

Proposed expansion site area covers the 10 KM radial study area in SOI Toposheet no 47 I/11, 47 I/15. . The studies were conducted for the period of December 2017-February 2018.

### **3.1 Climate:**

Temperature:

The temperature data collected at the site is presented as monthly maximum and minimum values. The mean of monthly maximum and minimum temperature recorded during the study period were 40.8<sup>0</sup>C and 23.9<sup>0</sup>C, respectively.

The climate is represents moderately warm at the day time and cold at the nights.

Relative Humidity: The Relative humidity collected at the site is presented as monthly maximum and minimum values. During the study period the air is observed to be moderately humid. The mean of monthly maximum and minimum relative humidity is observed to be in the range of 30% and 42 %, respectively.

Wind speed and Direction: NE followed by E predominant wind direction is observed during study period.

### **3.2 Air Environment**

Ambient air quality of the study area has been assessed for period of December 2017 to February 2018, through a network of eight ambient air quality stations within an area of 10 km region around the project site.

**Particulate Matter Emission (PM<sub>10</sub>& PM<sub>2.5</sub>):** In a ambient air quality baseline survey it was found that all ambient air quality parameters are within the NAAQ standards of Central Pollution Control Board.

**SO<sub>2</sub> emission:** it was observed that SO<sub>2</sub> level at different monitoring location is well within the limit of NAAQ standards.

**NO<sub>x</sub> emission:** NO<sub>x</sub> emission at all monitoring location are within the NAAQ standards.

### 3.3 Water Environment

- pH of the ground water sample ranges from 7.3 to 9.9. Total Dissolved Solids ranges from 92 to 688 mg/lit for ground water sample.
- Chloride concentration of the ground water is 18 to 89 mg/lit and in surface water 14 to 70 mg/lit.
- Nitrate concentrate ranges from 0.9 to 7.4 mg/lit in ground water while surface water shows its concentration 1.1 to 6.4 mg/lit

### 3.4 Soil Environment

- pH of soil samples in range of 7.4-8.0.
- Conductivity of the samples is in between 0.54 to 1.8 mS/cm
- The water holding capacity of a soil is a very important agronomic characteristic. All the soil samples shows, the higher the percentage of silt and clay sized particles, since higher the water holding capacity. The small particles (clay and silt) have a much larger surface area than the larger sand particles. This large surface area allows the soil to hold a greater quantity of water.
- Organic carbon percentage ranges from 0.4 to 2.5
- Overall it is observed that the soils of the region are good for agriculture

### 3.5 Ecology and Biodiversity

The vegetation of the area is deciduous type along with open scrub land. As per the ecological studies conducted it can be seen that the study area shows extreme species diversity.

The study shows overall 53 plant species comprising of 31 trees, 6 shrubs, 12 herbs and 2 each climbers and grasses in study area. No RET floral species is reported in the study area. The floristic survey reveals that the study area shows dominance of trees, viz. *Azadirachta indica*, *Acacia nilotica*, *Aegle marmelos*, *Cassia fistula* etc.; shrubs viz., *Lantana camara* and *Calatropis* sp. and herbs like *Alternanthera sessilis*, *Argemone mexicana* and *Cassia tora*. However, majority of the forest area is open scrub.

11 species of Mammals, 6 species of Reptiles and 15 species of birds were recorded in and around the periphery of the project during the study period. Animals, which are found surrounding the project area and categorized under, schedule I to Schedule IV of Wild Life Protection Act 1972 & subsequent amendment.

### **3.6 Socio-Economic Environment**

Ahmadnagar district is on the forefront of sugar production. Ahmadnagar , Bhinga, Sangamner, Pathardi and Kharde are also known for handloom weaving. Small Scale industries such as Bidi making and Ghaypat rope making are also in Ahmadnagar , Akola,Sangmner and Shrigonda.

According to the 2011 Census, Ahmadnagar district has a total population of 45,43,159 no. of people and density of population is 266 persons/Sq. Km. Drinking water is available to all villages, the source being open dug well with or without pump/electricity. Some are catered by tank-storage. In order to improve the process of development, this activity will help the Government departments to bring about the desired up-liftmen.

### **4.0 Anticipated Environmental Impacts & Mitigation Measure**

Prediction of impacts depends on the nature and size of activity being undertaken and also on the type of pollution control measures that are envisaged as part of the project proposal. However, the good management practices would be followed to ensure that the environmental pollutants concentrations remain within the limits. The proposed plant may cause impact on the surrounding environment in two phases.

- ❖ During construction phase
- ❖ During Operation phase

Mitigations of these likely impacts are described in the following sub-sections.

#### **4.1 Construction Phase:**

For the proposed expansion of sugar unit, any construction of building or structure will be not required. In the expansion there is only modernization of boiling house.



## 4.2 Operation Phase

### Impact on Air Quality and Management

- No additional boiler will be installed for the expansion of sugar unit.
- In case of existing project, major source of air pollution is bagasse fired boiler. To control emissions from boiler ESP and adequate stack height is provided.
- It will be ensured that the PM levels do not exceed 50mg/Nm<sup>3</sup>.

### Impact on Water Quality & Management

- The water requirement for the sugar plant activity will be 760m<sup>3</sup>/day during operation. The wastewater generated would be 630 m<sup>3</sup>/day.
- The continuous efforts will be made to reduce the water consumption and thereby reduce wastewater generation. Flow meters will be installed on all major water inlets and the flow rates will be continuously monitored. Periodic water audits will be conducted to explore the possibilities of minimizing water consumption.

### Impact on Noise Levels and Management

- All rotating items shall be well lubricated and provided with enclosures as far as possible to reduce noise transmission.
- In general, noise generating items such as generators, fans, blowers, compressors, pumps, motors etc. are so specified as to limit their speeds and reduce noise levels.
- Operators will be provided with necessary safety and protection equipment such as ear plugs, ear muffs etc.

### Social Aspects

- ❖ Improvement in socio cultural environment of the project area
- ❖ Improvement in transport and communication services,

- ❖ Increase in employment due to increased business, trade commerce and service sector.
- ❖ This project does not involve any displacement of local people.
- ❖ Some people have concerns about the environmental aspects of the project.
- ❖ Public invasion by the outsiders to take place due to the project has also very minor concern for the people.

### **5.0 Environmental Monitoring Programme**

The environment, safety and health-monitoring programme in the factory shall be implemented as follows:

- ❖ Regular monitoring of stack emissions
- ❖ Daily monitoring of water and wastewater
- ❖ Quality monitoring of ambient air, noise and work place air
- ❖ Monitoring of occupational safety

The project management, being aware and conscious of its responsibilities to environment, is committed that the project operations will be made keeping in line with the internationally accepted sustainable measures/practices and methods thus leaving negligible adverse impacts on any segment of environment due to proposed activity.

### **6.0 Environmental Management Plan / Environment Management Costs**

Environmental Management Plan includes the protection, mitigation and environmental enhancement measures to be implemented to nullify the adverse impact on the environment. The management of the MSSKL will take all the necessary steps to control and mitigate the environmental pollution in the designing stage of the project. While implementing the project MSSKL will follow guidelines specified by CPCB. The EMP operation/implementation will be the responsibility of the "EHS Officer", who will be coordinating, arranging the collection and reporting of the results of all emissions, ambient air quality, noise and water quality monitoring.

## 6.1 Air Environment

The major pollutants from boilers during operation phase are PM<sub>10</sub> & PM<sub>2.5</sub>, Sulphur Dioxide and Oxides of Nitrogen. These pollutants will be nullified by adopting following measure.

- For Existing Boiler 85 TPH : stack height 75 M with ESP &
- Existing 80 TPH Boiler: Stack height 70 M and ESP
- ❖ Online Monitoring system is installed and connected to CPCB server
- ❖ Green belt development is developed.

## 6.2 Noise Environment

- ❖ All rotating items will be well lubricated and provided with enclosures as far as possible to reduce noise transmission. Vibration isolators will be provided to reduce vibration and noise wherever possible
- ❖ Manufacturers and suppliers of machine/equipment like compressors, STG turbines and generators will be manufactured as per OHSAS/MoEF guidelines.
- ❖ The personnel safety such as ear muffs, ear plugs and industrial helmets will also act as a noise reducers

## 6.3 Water Environment

- After expansion 760 m<sup>3</sup>/day water required and 630 m<sup>3</sup>/day effluent will be generated.
- Generated effluent will be treated at existing ETP having capacity of 700 M<sup>3</sup>/day
- The continuous efforts will be made to reduce the water consumption and thereby reduce wastewater generation. Periodic water audits will be conducted to explore the possibilities of minimizing water consumption.
- 100 % waste water will be recycled and reused so that plant will be operating on zero discharge concepts. Treated waste water will be used for dust suppression,

green belt development, ash handling system and it will be recycled in process so that raw water consumption will be reduce.

#### **6.4 Storm Water Management**

Based on the rainfall intensity of the proposed area, storm water drainage system will be designed. Storm water drainage system will consist of well-designed network of open surface drains with rainwater harvesting pits.

#### **6.5 Rain Water Harvesting Scheme**

RWH structures will be provided to harvest the rain water from roof TOP and plant area. The collected rain water will be utilized for plant uses to optimize the raw water requirement. The surface water run-off from the main plant area would be led to a sump for settling and the over flow would be collected in the common water basin for further uses in the plant to optimize the raw water requirement of the plant. The excess rain water may be discharged to the nearest surface water body through dedicated storm water drain for recharging the ground water.

#### **6.6 Solid waste management**

Solid by-products such as bagasse, press mud and molasses are generated as process waste products (byproducts) from the industry. Press mud is supplied to member farmers for their used as bio-manure and molasses will be used distilleries for its use as raw material in manufacture of ethanol. Bagasse produced from the Industry is used as a fuel in the boilers. Solid wastes such as boiler ash & ETP sludge are also produced from the expansion unit. These are disposed to farmers for their use as soil conditioner in land.

#### **6.7 Occupational Health & Safety**

During operation stage, dust is the main health hazard. Other health hazards are due to gas cutting, welding, noise and high temperature and micro ambient conditions especially near the boiler and platforms which may lead to adverse effects (Heat

cramps, heat exhaustion and heat stress reaction) leading to local and systemic disorders.

- ❖ Adequate arrangements for preventing generation of dust by providing the chutes at transfer points to reduce the falling height of material, preventing spillage of material by maintaining the handling equipment, isolating the high dust generating areas by enclosing them in appropriate housing and appropriately de-dusting through high efficiency bag filters
- ❖ All workers engaged in material handling system will be regularly examined through PFT (Pulmonary Function Test) tests for lung diseases.

## **6.8 Ecology & Biodiversity**

Flora and fauna inventories within the project area will be monitored on a twice yearly basis. This may involve the use of specific indicators, such as the occurrence of nests or nesting bird species of importance.

### **Green Belt Development**

The main objective of the green belt is to provide a buffer zone between the sources of pollution and the surrounding areas. The green belt helps to capture the fugitive emissions and attenuate the noise apart from improving the aesthetics quality of the region.

The existing green belt on 96 acre land with 60668 standing trees is 60,668 and additionally proposed number of plantation is 4,000 No. in next 5 years.

## 7.0 Budgetary Provision for Environmental management plan

- ❖ The Capital Cost of Expansion of Sugar Unit is Rs. 11 Cr
- ❖ Cost of EMP are presented below

No.	Particulars	Cost in lakh
<b>One Time Installation Cost (Capital Cost)</b>		
1	Noise Control Systems	5.0
2	Green Belt Development	50.0
3	Water Pollution Control System - ETP	25.0
4	Occupational Health & Safety	5.0
	<b>Total</b>	<b>95.0</b>
<b>Recurring Cost</b>		
1	Environmental Monitoring /APH Maintenance	10.0
2	General Maintenance of ETP	10.0
3	Greenbelt maintenance	10.0
4	Noise Pollution Control	5.0
5	Occupational Health & Safety	5.0
	<b>Total</b>	<b>40.00</b>