

EXECUTIVE SUMMARY

OF

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

**EXPANSION OF GRAIN BASED DISTILLERY
(25 KLPD to 60 KLPD)**

AT

**S.No. 284-B, Subhash Nagar,
A/P. Gurgaon, Taluka - Kallamb,
Distt. - Osmanabad (Maharashtra)**

STUDY PERIOD : PRE-MONSOON SEASON-2012

APPLICANT

M/s. ADLERS BIOENERGY LTD.

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s Adlers Bioenergy Ltd. has an existing grain based distillery of capacity 25 KLPD at S. No. 284 (B), Subhash Nagar, A/P Gaurgaon, Taluka Kallamb, District Osmanabad, Maharashtra. M/s Adlers Bioenergy Ltd. has now proposed expansion of the existing unit from 25 KLPD to 60 KPD grain based distillery.

As per EIA Notification dated 14th September 2006, proposed expansion project falls under Category “A”, Project or Activity 5 (g) ii [Manufacturing/ Fabrication; All cane juice/ non-molasses based distilleries \geq 30 KLD], hence Environmental Clearance is required from MoEF New Delhi.

The TOR Presentation with respect to Environmental Clearance was held on 12th January, 2012. Further ToRs (Terms of References) were issued from MoEF F. No. J-11011/422/2011/1A-II (I) letter dated 21st February, 2012. The Draft EIA/EMP Report has been prepared by incorporating all the prescribed ToR points by MoEF.

1.1 DETAILS OF THE PROJECT

S. No.	Particulars	Details
1.	Nature & size of the Project	Expansion of Grain based Distillery (25 KLPD to 60 KLPD)
2.	Products to be manufactured	Rectified Spirit and Extra Neutral Alcohol
	Land Details	
	Total Plot Area	19 ha (46.95 Acre) Expansion will be within the existing plant premises.
	Existing/Proposed Area for green belt/plantation	<ul style="list-style-type: none"> ➤ Existing Green Belt area: 2.4 ha ➤ Proposed Green Belt area: 6 ha ➤ Total Green belt area after expansion will be 8.4 ha (44.22% of total land)
3.	Location Details	
	A. Location	S. No. 284 (B), Subhash Nagar, A/P Gaurgaon

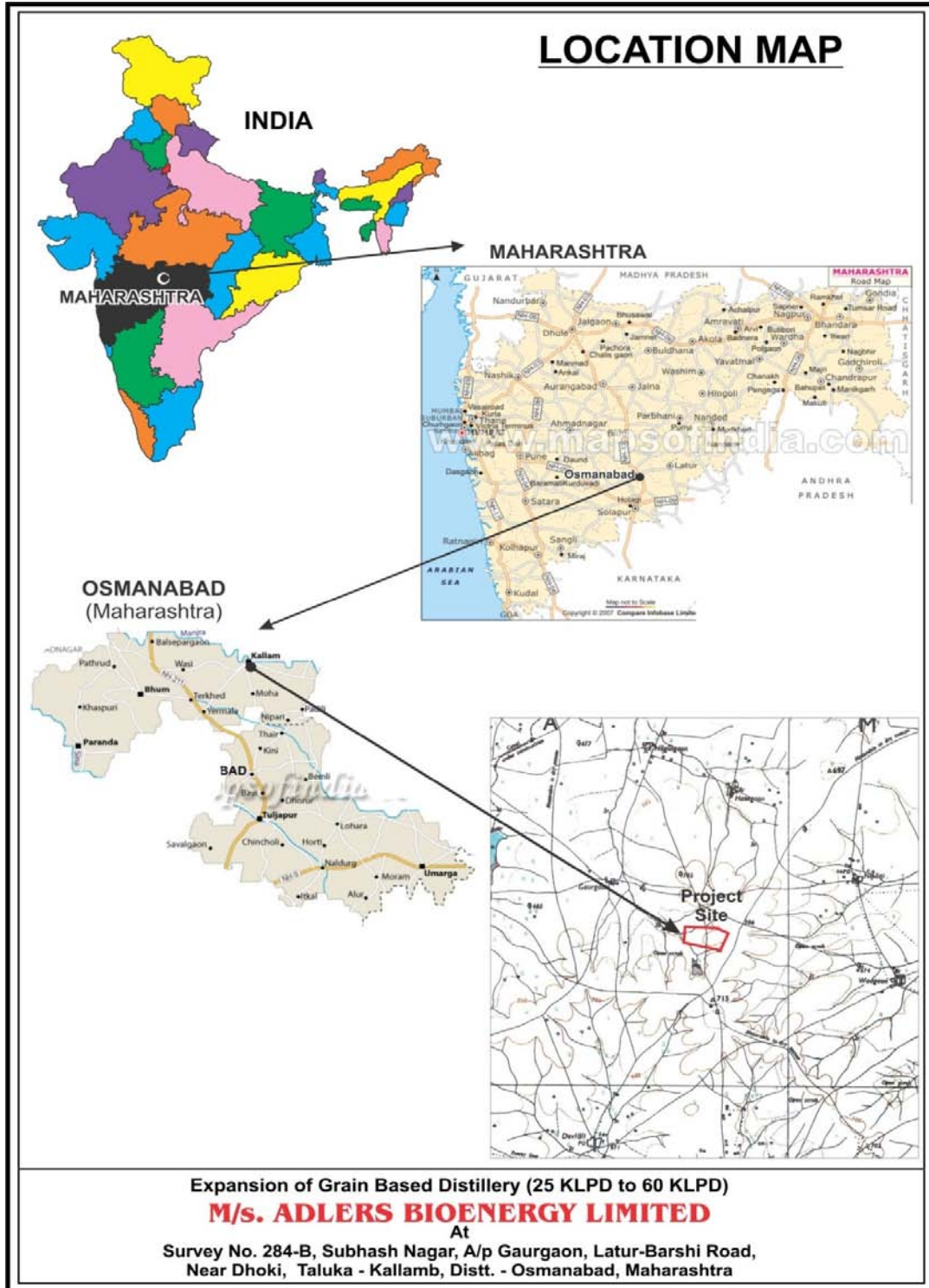
Expansion of Grain based Distillery (25 KLPD to 60 KLPD)

At S. No. 284 (B), Subhash Nagar, A/P Gaurgaon, Taluka Kallamb, District Osmanabad, Maharashtra.

Executive Summary of EIA Report

	B. Taluka	Kallamb
	C. District	Osmanabad
	D. State	Maharashtra
	E. Latitude	18°26'22.58"N to 18°26'34.17"N
	F. Longitude	76°09'22.97"E to 76°08'59.36"E
4.	Cost Details	
	Project Cost	Rs 22.5 Crores
	Cost of EMP	Rs 2.30 Crores
	Recurring cost of EMP	Rs. 37.5 Lacs
5.	Environmental Settings	
	Ecological Sensitive Areas (National Park, Wild Life Sanctuaries, Biosphere Reserves etc.), Reserved / Protected Forest within 10km radius	None, within 10 km radius area of project site.
	Nearest Village	Gaurgaon village, approx 1.7 km in NW direction from the project site.
	Nearest Town/City	➤ Murud Town, approx 9.6 km in SE direction from the project site. ➤ Osmanabad district head quarter, approx 30 km in SSW direction from the project site.
	Nearest National Highway	➤ SH-77 at approx 5.5 km in S direction ➤ SH-162 at approx 9.0 km in E direction ➤ SH-160 at approx 9.0 km in N direction ➤ NH-211 at approx 22 km in SW direction
	Nearest Railway Station	Murud Railway Station, approx 12 km in SE direction from the project site.
	Nearest Airport	Latur Airport, approx 33 km in E direction from the project site.
	Nearest Water Bodies	➤ Nipani Pond, approx 2.7 km in ENE direction from the project site. ➤ Kolegaon Tank, approx 5.5 km in SSW direction from the project site. ➤ Borgaon Tank, approx 4.5 km in WNW direction from the project site.

1.1.1 Location Map



1.2 REQUIREMENTS FOR THE PROJECT

1.2.1 Raw Material

S. No.	Particular	Requirements			Source of the Raw Material & Mode of Transportation
		Existing 25 KLPD Distillery	Proposed 35 KLPD Distillery	After expansion 60 KLPD Distillery	
1.	Grains containing 60% w/w Starch	64 MT/Day	90 MT/Day	154 MT/Day	Nearby Market by Truck.
2.	Fresh Water	414 KLPD	416 KLPD	830 KLPD	MIDC Water Supply, Latur
3.	Chemicals Required	Quantity (Kg/day)			Nearby Market, by Truck
	a) Sodium Hydroxide (Caustic)				
	A. For Main Process Plant (47% Strength).	28	40	68	
	B. For CIP (Fermentation & Evaporation Section, @100% Strength)	2	4	6	Nearby Market, by Truck
	b). Sulphuric Acid	30 Kg/day	42 Kg/day	72 kg/day	
4.	Enzymes (Approx consumption)				
	Liquefying Enzyme	38.40 kg/day	54.00 kg/day	92.40 kg/day	
	Saccharifying Enzyme	30.72 kg/day	43.20 kg/day	73.92 kg/day	
	NH ₂ -CO- NH ₂ (Urea; 46 % N ₂)	56 kg/day	79 kg/day	135 kg/day	
5.	Antifoam Agent	Not required	Not required	Not required	
6.	FUEL Requirement Coal			100 MT/day	

1.2.2 Other Requirements

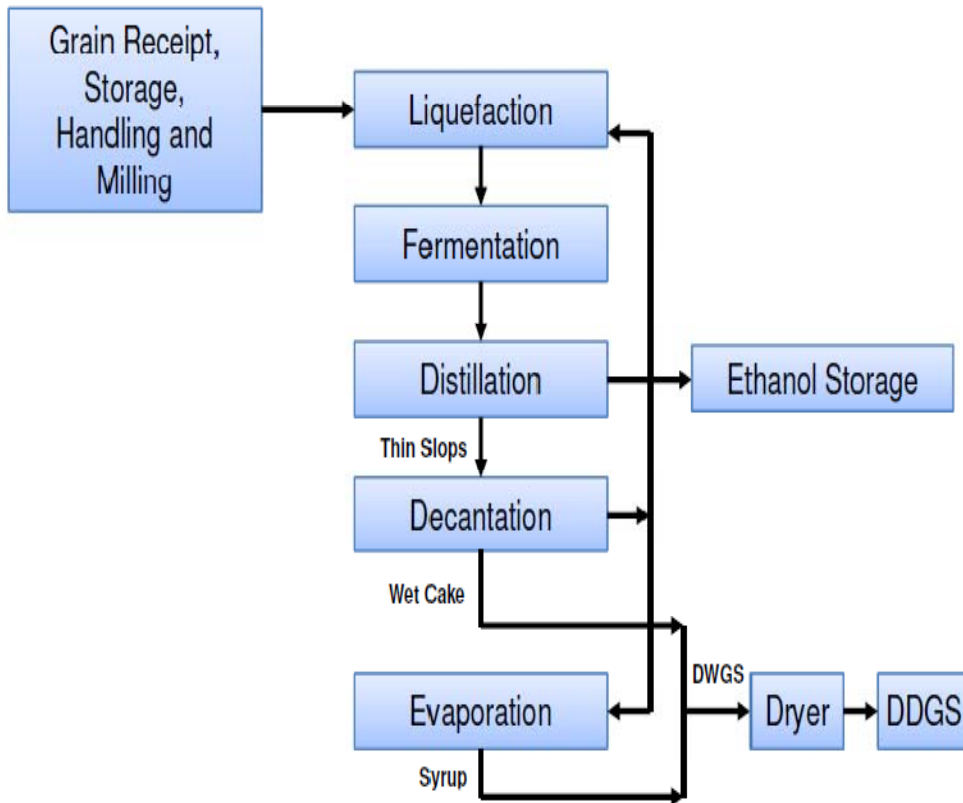
S. No.	Particulars	Existing	Proposed	Total	Source
1.	Power	1100 KW	850 KW	1950 KW	Co-generation Power Plant & Maharashtra

S. No.	Particulars	Existing	Proposed	Total	Source
					State Electricity Board (MSEB)
2.	Water	414 KLPD	416 KLPD	830 KLPD	MIDC, Latur
3.	Man Power	100	90	190	From nearby & other areas.

2.0 PROCESS DESCRIPTION

Ethanol production by fermentation comprises four steps:

- Grain Storage, Cleaning, Milling and Flour Handling
- Liquefaction
- Saccharification
- Fermentation
- Distillation



Process Flow Diagram of Ethanol Production

3.0 BASELINE ENVIRONMENTAL STATUS

Baseline environmental studies have been carried out during pre-monsoon season, 2012. Studies have been carried out in 10-km radius from project as

centre for Soil quality, ambient air quality, water quality, noise level, flora and fauna studies and demography.

3.1 METEOROLOGICAL DATA

The meteorological parameters like wind speed, wind direction (from 0 to 360 degrees), temperature, relative humidity, atmospheric pressure, rainfall and cloud cover were recorded on hourly basis during the pre-monsoon season i.e. March to May, 2012 at proposed plant site. The data shows that the

- Temperature Min: 15.1°C and Max: 42.1°C
- Relative Humidity Min: 21% and Max: 63% at 8:30 hrs
Min: 14% and Max: 51% at 17:30 hrs
- Predominant Wind Direction North West

3.2 AMBIENT AIR QUALITY

The ambient air quality was monitored at 6 locations during Pre-monsoon season (March to May, 2012) the data shows:

- PM₁₀: 46.52 µg/m³ to 85.57 µg/m³
- PM_{2.5}: 19.55 µg/m³ to 40.02 µg/m³
- SO₂: 6.28 µg/m³ to 9.38 µg/m³
- NO₂: 10.51µg/m³ to 17.63µg/m³
- Methane/Non-Methane Hydrocarbon: <0.50 mg/m³

The results of the monitored data indicate that the ambient air quality of the region in general is in conformity with respect to norms of the National Ambient Air Quality (NAAQ) Standards

3.3 WATER QUALITY

The baseline groundwater quality status in the region is established by analyzing 6 samples. The pH varies from 7.28 to 7.70. Calcium and Magnesium content varies between 20.39 mg/l to 108.7 mg/l and 4.86 mg/l to 36.06 respectively. Total hardness and alkalinity expressed as CaCO₃ ranges between 80.56 to 415 mg/l and 133 to 307 mg/l respectively. The physico-chemical and biological analysis revealed that most of the parameters of groundwater are within the permissible limits as per IS: 10500.

One surface water sample was taken for analysis. The pH of pond is 7.59. The COD was found to be 19.61 mg/l. BOD was found to be 5.40 mg/l. The heavy metal contents are found to be well within the limit. The physio-chemical and biological analysis revealed that most of the parameters are well within the prescribed limits.

3.4 SOIL CHARACTERISTICS

The soil samples were tested at 6 locations covering various land uses. It was observed that the soil in the study area is predominantly of silty loam type. It is slightly alkaline in nature. The pH of the soil samples ranged from 7.08 to 7.92. The Conductivity of the soil samples varied from 0.028 to 0.050 μ mho/cm. The phosphorus values ranged between 9.40 to 11.58 kg/ha. The nitrogen values ranged between 287 to 620kg/ha. The potassium values ranged between 50.05 to 301 kg/ha. The soil data indicate soil has less organic matter, good nitrogen and more phosphorous, but less of potassium.

3.5 NOISE LEVEL SURVEY

The noise monitoring has been conducted at 6 locations in the study area. The Day time and Night time Noise Levels in the study area ranged between 47.63 to 51.98 Leq. dB (A) and 41.44 to 43.15 Leq. dB (A) respectively. The noise levels in general found mostly within the acceptable levels as per standards notified under E (P) Act.

3.6 FLORA AND FAUNA STUDIES

Ecological studies were conducted during study to identify the floristic composition in and around proposed project site and surrounding villages. Plant species and animals observed/recorded through primary survey interaction with local people and forest officials of the area. The study area has sparse vegetation and faunal variety.

3.7 SOCIO-ECONOMIC DETAILS

The population of study area as per 2001 Census records is 84320. Scheduled Caste population in the study area (10 km) is 13352 and Scheduled Tribe 2520. Average Percentage literacy rate in study area is 58%. Number of workers those actually engaged in occupation is 37178. Sex ratio of the district is 942.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Air Environment

The following air pollution control systems are proposed to be installed in this project to reduce the anticipated adverse impacts:

Air quality may get affected due to emissions generated from burning fuel in boiler and D.G. sets; they are Particulate matter and small amount of SO_x and NO_x. To mitigate the impact, stack of appropriate height is provided for both boiler and D.G. sets. To reduce particulate matter concentration multicyclone dust collector will be installed. **Green belt is developed in 2.4 ha area. It will be**

expanded to 8.4 ha by bring 6 ha area more under green belt. Green belt is acts like adsorbent of air pollutants.

To combat fugitive emissions roads are paved and regularly swept. Water sprinklers are provided for suppression of dust. Vehicular exhaust is being maintained by providing regular maintenance and servicing of vehicles. Same will be continued for future also.

4.2 Water Environment

Existing units approached Zero Liquid Discharge. Proposed project is also based on zero discharge. No impacts are anticipated on water environment due to the proposed project. Most of the water will be recycled back. Spent Wash generated will be passed through decanter for separation of soluble. The remaining from decanter is passed to MEE for concentration. Concentrate from MEE will be mixed with soluble from decanter to obtain DWGS. Effluent from washing and blow down process will be treated in existing ETP. Treated water will be use for green belt development. Domestic waste will be treated in septic tanks followed by soak pits. Rainwater would be utilized to recharge the underground water source through scientifically designed rain water harvesting system

4.3 Noise Environment:

Noise will be generated due to construction activities & plant operation. Future expansion and installation of the plant machinery will be done after- due consideration to design noise levels and noise mitigation measures. Acoustic enclosures will be provided for D.G. sets and other noise producing equipment. Also workers will be provided with personal protective equipments like ear plug and earmuffs for working in noisy areas. Most of the construction and operation activities will be undertaken during day time.

4.4 Land environment:

No change in land-use will be brought by proposed project as expansion will be carried out in existing plant premises. Quality of soil/land will not be affected as any solid waste or effluent is not disposed on land. Solid waste from the Grain based operations generally comprises the fibers and proteins in form of wet cake, ideally used as Cattle Feed. ETP sludge will be used as manure. Boiler ash will be sold to brick manufacturers. Thus no impact on land is anticipated due to proposed project. Green Belt will be developed (8.4 ha after expansion). This help in improving soil quality and flora of the study area.

5.0 ENVIRONMENTAL MANAGEMNT PLAN

The project will have robust post project monitoring facilities within the company to check the efficacy of the environmental mitigation measures undertaken and it will have a full time environmental management cell with adequately qualified environmental engineers and scientists. The sampling and analysis of the environmental attributes will be as per the guidelines of CPCB. The source emissions will be monitored by establishing monitoring facilities. A rainwater harvesting system to utilize the collected rain water for plant use will be in place.

5.1 COST PROVISION FOR ENVIRONMENTAL MEASURES

The total cost of the project is Rs. 22.5 crores. Capital cost for EMP is Rs. 2.30 Crore and the recurring cost Rs. 37.5 Lacs.

6.0 ADDITIONAL STUDIES

6.1 RISK ASSESSMENT AND DISASTER MANAGEMENT STUDIES

The risks associated with the proposed project are like spontaneous ignition of alcohol & rice husk. Hazard analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the proposed plant. On the other hand, risk analysis deals with the recognition and computation of risks associated with the plant activities. A detailed risk assessment is carried out and on its basis a disaster management plan has been framed to handle the emergency situation.

6.2 PROJECT BENEFITS

Proposed expansion project will increase the employment potential for the villagers. 90 more people will be required after expansion. Labors will be required per day for construction works. This will help raising the living standard of the villagers. After expansion total 190 people will be employed by M/s Adlers Bioenergy Ltd. Ethanol production will add to revenue of the country. More over developmental works will be carried out by M/s Adlers Bioenergy Ltd for betterment of society and development of area.

6.3 CSR ACTIVITIES

M/s Adlers Bioenergy Ltd. has proposed to spend 25 lacs for different social activities leading to the upliftment of people. Also Adlers Bioenergy Ltd. will be organizing regular medical camps and other facilities for local residents. M/s Adlers Bioenergy Ltd. has fully fledged Corporate Social Responsibility Cell (CSR

Cell) to carry out developmental activities in nearby villages timely. This CSR Cell plans various activities to improve social status of the locals.

7.0 CONCLUSION

Proposed expansion of existing 25 KLPD grain based distillery to 60 KLPD grain based distillery will not impact the environment negatively. Emissions and discharges will be maintained to prevent any pollution. All pollution control measures/equipments have been installed and they are regularly monitored to prevent any risk/damage to environment. Comprehensive CSR activities planned to be implemented by M/s Adlers Bioenergy Ltd., will contribute to the overall development of environment and social fabric of the area. The direct and indirect employment opportunities likely to emerge due to the proposed expansion will improve the social and economic well being of the society around.

