

**SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

OF

Chandu Cattle Feeds

10 KLPD Ethanol & 50 TPD Cattle Feed Unit

Plot no. 31 & 30 B of Sy. No. 432/2 P,
APIIC Industrial park,
Kakuturu village,
Venkatachalam mandal,
SPSR Nellore, Andhra Pradesh

SUBMITTED TO

**ANDHRA PRADESH POLLUTION CONTROL BOARD
VIJAYAWADA, ANDHRA PRADESH**

1.0 INTRODUCTION

Chandu cattle feeds is an existing unit located Plot no. 31 & 30 B of Sy. No. 432/2 P, APIIC Industrial park, Kakuturu village, Venkatachalam mandal, SPSR Nellore, Andhra Pradesh.

At present unit is producing cattle feed of 50 TPD capacity using Spent wash generated from distilleries as raw material.

Now it is proposed to put up 10 KLPD grain (maize, broken rice, bajra, jowar and other starch containing raw materials) based ethanol unit in the existing site premises of 1.6 acres of land taken on lease. After the installation of the proposed project the spent wash generated from the Ethanol unit will be used as raw material for producing cattle feed.

The cost of proposed Project will be Rs. 5.62 Crores.

The following will be size of the project

S. NO.	PRODUCT	CAPACITY
1.	Rectified Spirit / Ethanol (through Grains)	10 KLPD
2.	Cattle feed	50 TPD
	By-product	
3.	Calcium Hydroxide	1 TPD
4.	Calcium Carbide	1 TPD

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India for conducting EIA studies, have prepared Draft Environmental Impact Assessment (DEIA) report for the proposed project by incorporating the Terms of Reference issued by MOEF.

- Detailed characterization of status of environment in the area of 10 km. radius from the proposed site for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposed industry along with the noise level assessment.
- Environmental Management Plan (EMP) consisting of Air emission management, waste water management, Noise level management, solid waste management, etc.
- Post project monitoring plan

1.1 SITE DETAILS

The following is the environmental setting within the 10 Km. radius of the project site:

- The project area does not fall under the industrial areas / cluster, which are listed in MoEF office memorandum dated 13th January 2010 and its subsequent amendments for Critically / Severely Polluted area.
- Nearest Habitation Venkatachalam is at a distance of 1.5 Kms. from the project site.

- There are no National Parks/Tiger Reserves/Elephant corridors within 10 Km. radius of the project site.
- Kanupuru west RF (0.14 Kms.), Kakuturu RF (2.4 Kms.), Kantepalli RF (1.6 Kms.), Kanupuru East RF (1.6 Kms.), Chemudugunta RF (4.3 Kms), Cherukumudi RF (6.8 Kms.), Dontali RF (7.2 Kms.), Amancharla RF (7.6 Kms.), Ambapuram RF (7.6 Kms.), Nellore RF (8.0 Kms.), Kasumuru RF (7.0 Kms.), Sarvepalli RF (5.2 Kms.) exists within 10 Km radius of Project site.
- No historical places and places of tourist importance within 10 Km radius of the project site.
- Kanupuru kaluva is flowing at distance of 40 mts (aerial) from the plant site.
- There is no interstate boundary within 5 Km. radius of the plant site (Nearest Interstate boundary is Tamilnadu at 95 Kms. distance)

1.2 RAW MATERIALS

The following will be the raw materials and their requirement.

S.NO.	RAW MATERIAL	SOURCE	QUANTITY (TPD)	METHOD OF TRANSPORT
1.	Grains (Maize, Corn, Sorghum Grain, Broken rice and Starch based grains, etc.)	Local area	24	By Road (Covered trucks)
2.	Dry grass / grain husk / DORB	Local area	26	By Road (Covered trucks)
3.	FUEL : Industrial burners			
	Furnace oil	Local areas / HPCL	2 KLPD	Tankers
4.	Calcium Oxide (CaO)	Piduguralla	1	By Road (Covered trucks)

1.3 MANUFACTURING PROCESS

Ethanol / Rectified Spirit

Initially Yeast will be mixed with Grain syrup for multiplication of yeast cells. Through fermentation, sugars in Grain syrup will be broken to alcohol & Carbon dioxide. Then through distillation rectified spirit will be produced. Ethanol will be produced by tray filter process using Calcium Oxide (CaO).

CO₂ Scrubbing

The CO₂ generated from the fermentation section will be scrubbed and mixed with Calcium Hydroxide to form Calcium Carbonate. Calcium carbonate formed will be given to the user industries

1.4 WATER ENVIRONMENT

Water Requirement

The Total Water requirement for the proposed project will be 60 KLD. This includes Process water, CT make up and for Domestic requirement. Water requirement for the proposed project will be sourced from Ground Water through Borewells.

Prior permission has been obtained from the State Ground Water Board for drawl of Water.

WATER CONSUMPTION

SECTION	WATER CONSUMPTION (in KLD)
Process Water	48
Cooling Tower make-up	10
Domestic	2
Total	60

1.5 WASTE WATER GENERATION AND CHARACTERISTICS

Waste water generation from the proposed project will be 49.6 KLD. The following is the break-up of waste water generation from the Project.

SECTION	WASTE WATER GENERATION (in KLD)
Spent Wash	48
Sanitary waste water	1.6
Total	49.6

EFFLUENT CHARACTERISTICS

The characteristics of Untreated Spent wash and sanitary waste water are shown below.

CHARACTERISTICS OF SPENT WASH

S. NO.	PARAMETER	UNIT	CONCENTRATION
1.	pH		3.8 – 7.5
2.	Total Dissolved Solids	mg/l	25,000 - 30,000 mg/L
3.	COD	mg/l	55,000 - 60,000 mg/L
4.	BOD	mg/l	30,000 - 35,000 mg/L

CHARACTERISTICS OF SANITARY WASTE WATER

S. NO.	PARAMETER	UNIT	CONCENTRATION
1.	pH		7.0 – 8.5
2.	Total Dissolved Solids	mg/l	800 – 900 mg/L
3.	COD	mg/l	300 – 400 mg/L
4.	BOD	mg/l	200 – 250 mg/L

1.6 EFFLUENT TREATMENT PROCESS

Spent wash generation will be 48 KLD. Spent wash generated will be mixed with dry husk or De Oiled Rice Bran (DORB) and grain husk and will be sold as cattle feed in wet cake form or dried form after drying. No spent wash will be discharged to the outside premises.

1.7 AIR EMISSIONS

In the proposed project, industrial burners will be provided to cooking section, distillation section & dryer. In the Industrial burners, furnace oil will be used as fuel. Thermic fluid heated through industrial burners will be circulated in reactor jacket around distillation section.

The air emissions from the proposed project will be Particulate matter, nitrogen dioxide and Sulphur dioxide. Particulate matter concentration in the gases will be below 50 mg/Nm³ as ash content in furnace oil is very low.

For effective dispersion of gases into the atmosphere, stack of 22 m height will be provided to Cooking and distillation section and stack of 18 m will be provided to the Drying section.

2.0 DESCRIPTION OF ENVIRONMENT

Baseline data has been collected on ambient air quality, water quality, noise levels, flora & fauna and socio-economic details of the people within 10 km. radius of the Plant.

2.1 AMBIENT AIR QUALITY

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂, NO_x & CO at 8 stations during December 2016 to February 2017 as per MOEF guidelines. The following are the concentrations of various parameters at all the monitoring stations.

Particulate matter (PM _{2.5})	-	16.1 to 20.3 µg/m ³
Particulate matter (PM ₁₀)	-	26.9 to 33.1 µg/m ³
Sulphur Dioxide (SO ₂)	-	6.7 to 12.9 µg/m ³
Nitrogen Oxide (NO _x)	-	8.6 to 14.1 µg/m ³
Carbon monoxide (CO)	-	285 to 560 µg/m ³

2.2 WATER QUALITY

Ground water samples at 8 locations and Surface water samples at 2 locations have been analyzed for various physico – chemical & Bacteriological parameters.

The water sample shows that they are suitable for potable purpose.

2.3 NOISE LEVELS

Noise levels were measured at 8 stations during day time & night time. The noise levels at the monitoring stations are ranging from 43.37 dBA to 54.88 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 PREDICTION OF IMPACTS ON AIR QUALITY

The emissions of concern from the proposed project will be PM₁₀, SO₂ and NO_x. For the purpose of prediction of Ground Level Concentrations the emissions from the industrial burners and vehicles are considered. Industrial Source Complex (ISC-3) software is applied for prediction of GLCs.

NET RESULTANT MAXIMUM CONCENTRATIONS DUE TO THE PROJECT

Item	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (µg/m ³)
Maximum baseline conc. in the study area	33.1	12.9	14.1	560
Maximum predicted incremental rise in Concentrations due to the proposed project	1.3	3.0	3.6	--
Maximum predicted incremental rise in Concentrations due to the vehicular emissions	0.01	--	0.1	0.1
Net resultant concentrations during operation phase	34.41	15.9	17.8	560.1
National Ambient Air Quality Standards	100	80	80	2000

The predicted results show that the incremental rise over the existing baseline status of ambient air quality will be within the National Ambient Air Quality Standards during operation Phase of the Ethanol project.

3.2 PREDICTION OF IMPACTS ON NOISE QUALITY

The major noise generating sources will be air blower, gear pumps & DG set. The Ambient Noise levels will not exceed the standards prescribed by MOE&F, GOI vide Notification under the Noise pollution (regulation & control) Rules, less than 75 dBA during day time and less than 70 dBA during night time. It is proposed to develop Greenbelt in 1/3rd of the total area will further mitigate the noise levels.

3.3 PREDICTION IMPACTS ON WATER ENVIRONMENT

Spent wash generated will be mixed with dry husk and grain husk and will be sold as cattle feed in wet cake form or dried form after drying. No spent wash will be discharged to the outside premises. Hence zero discharge will be implemented in the proposed project as per CPCB norms. Rainwater Harvesting pits will be constructed in the premises which will help in augmentation of Groundwater table. Hence there will not be any impact on water environment.

3.4 PREDICTION OF IMPACTS ON BIOLOGICAL ENVIRONMENT

There are no rare & endangered species in the area. All the required pollution control systems will be installed and operated to comply with the norms. Once all the norms are complied with, then there will not be any adverse impact on flora, fauna & on Crops due to the proposed project.

4.0. ENVIRONMENTAL MONITORING PROGRAMME

Ambient Air Quality, Stack monitoring & effluent analysis will be carried out regularly as per CPCB norms and the analysis reports will be submitted to Ministry of Environment Forest & Climate Change, Chennai & Andhra Pradesh Pollution Control Board regularly.

5.0. ADDITIONAL STUDIES

No Rehabilitation and Resettlement is involved in the proposed project. Hence no R & R study has been carried out.

6.0. PROJECT BENEFITS

With the establishment of the proposed project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

7.1 AIR ENVIRONMENT

A stack height of 22 m (attached to Jet cooker & Thermic fluid heater) and 18 m (attached to Dryer) respectively will be provided as per CPCB guidelines for effective dispersion of sulphur dioxide emissions into the atmosphere.

7.2 WATER ENVIRONMENT

Spent wash generation will be 48 KLD. Spent wash generated will be mixed with dry husk and grain husk and will be sold as cattle feed in wet cake form or dried form after drying. No spent wash will be discharged to the outside premises. Hence zero discharge will be implemented in the proposed project as per CPCB norms. . Rainwater Harvesting pits will be constructed in the premises which will help in augmentation of Groundwater.

7.3 SOLID WASTE GENERATION & DISPOSAL

The following table shows the generation & disposal of Solid Waste.

S.No.	Solid waste	Total Quantity (TPD)	Disposal
1.	Calcium Hydroxide	1	Will be given to cement industries
2.	Calcium Carbonate	1	Will be given to the user industries
3.	Waste lube oil	300 lit/annum	Will be given to the SPCB approved recyclers & reprocessors.

7.4 NOISE ENVIRONMENT

The major noise source in the proposed plant will be gear pumps, air blowers & DG set. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt proposed to be developed around the plant covering 1/3rd of total area will also help in attenuating the noise levels further. Noise barriers in the form of trees will be grown around the administrative block and other utility buildings.

7.5 LAND ENVIRONMENT

The effluent generated from the proposed project will be treated to comply with the A.P.Pollution Control Board standards. All the solid waste will be disposed as per norms. Hence there will not be any adverse impact on land environment due to the proposed project.

7.6 GREENBELT DEVELOPMENT

Green belt development will further enhance the environment quality through limitation of air emissions, attenuation of noise levels, balancing Eco environment, prevention of soil erosion and creation of aesthetic environment. 0.54 acres of greenbelt will be developed in the plant premises as per CPCB norms.