

EXECUTIVE SUMMARY

For

Environment Impact Assessment of proposed Expansion of Co-generation from 2.5 MW to 20.5 MW Project

of

Raosahebdada Pawar Ghodganga Sahakari Sakhar
Karkhana Ltd.

Raosaheb Nagar, Nhavare, Taluka Shirur, District Pune (M.S.)



PREPARED BY

S G M Corporate Consultants Pvt. Ltd
(Environmental Consultancy
Recognized By MoEF, NABET Approved)

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MKW BIO SYSTEMS PUNE

April - 2015

1. INTRODUCTION

This is a proposal to 20.5 MW co-gen plant. Agro – based Sector on a mousy land. The Proponents are **M/s Raosahebdada Pawar Ghodganga S.S.K. Ltd.,** at Raoshahebnagar, Nhavare, Taluka- Shirur, District- Pune (M.S.) on boot basis. The proposed products (main & attendant) are –

Table No. 1: Product Details

SL.NO.	Product	Production			Unit
		Existing	New/Expansion	Total	
1	Sugar plant	2500	Proposed 2000	4500	TCD
2	Co-gen power	2.5	18	20.5	MW
3	Distillery	30	--	30	KLDP

The Notification no. S. O. 1533 promulgated on 14th September 2006 has covered this No.1 Product and is at Entry 1(d). The proposal is acknowledged by Government of India, Ministry of Commerce and Industry, Entrepreneurial Assistance Unit, New Delhi.

2. Justification for the project

Justification of this Project can be submitted in many ways, namely –

- How this Project is economically strong by converting its own waste in useful product and power generation.
- How the pollution generated from this unit can be successfully managed through EMP implementation, or in fact
- How the pollution generated from this unit can be converted to useful irrigation water with nutrients, and
- How the pollution generated from this unit can be converted to Electricity.

Table No. 2: Justification of Project

<ul style="list-style-type: none"> • India Needs Electric power • Consumes Bagasse, which otherwise is an environmental risk
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Various Government Departments will also be examining **Justification** and propriety of this venture and permissions will be obtained to establish this unit. Many are already in hand.

- Certificate of incorporation of the company
- Industrial Entrepreneurs Memorandum (IEM), New Delhi for Co-gen Power
- NOC from Local body
- Land Registration, NA permission and Industrial purpose
- Water drawl permission
- On site emergency plan approval
- Central Excise Registration

3. Location and Boundaries

The proposed project is located at Raoshahebnagar, Nhavare, Taluka- Shirur, District- Pune (M.S.) The project falls at North Latitude 18°38'47.76" and East Longitude 74°22'26.60" The environmental setting around the proposed site is given in below Table

Table No. 3 Environmental Setting of the Proposed Project

#	Particulars	Details
1	Latitude	18°38'47.76" N
2	Longitude	74°22'26.60"E
3	Elevation above MSL	560 M above Mean Sea Level
4	Climatic Conditions (As per IMD)	Annual Mean Maximum Temperature: 39.9°C Annual Mean Minimum Temperature: 4.6°C Annual Rainfall : most of the 722 mm Range in between 700 to 1000
5	Present land use at the proposed site	Industrial
6	Nearest Highway	SH 61– Shirur-Satara- Ahmednagar abating to the project site
7	Nearest Railway Station	Daund Railway Station- 45.8 Km by road distance from the site
8	Nearest Airport	Pune : 82 km by road distance from pune
9	Nearest water bodies	Bhima river at 8 km, Ghod dam 12 km
9	Ecologically sensitive zones	None within 10-km radius
10	Historical/ Archaeological places	None within 10-km radius
11	Seismic Zone	Zone –III (High) (Safe as per Indian Seismological Institute)

4. Land Utilization:

Less buildings and less roads means saving of rubble, sand, bricks, etc, which otherwise has to be procured by robbing nature. The land utilization is

Table No-4 Area Utilizations in Plot

#	Particulars	Area in Acres	%
1	Total Land Available	179	100
2	Total Land utilized for Existing Sugar Factory	4.9	2.74
3	Total Land utilized for Existing distillery	10.05	5.61
4	Land used for residential colony	1.60	0.89
5	Land reserved for sugar mill modernization cum expansion	3.50	1.95
6	Land reserved for co-generation project	12.5	6.98
7	Existing Road	8.700	4.86
8	Effluent treatment plant	1.925	1.07
9	Composting yard, compost storage, lagoon	15.7	8.77
10	Utilities Godown, spray pond, water reservoir & petrol pump	9.875	5.51
11	Open area	91.555	51.15
12	Plantation	12.06	6.73
13	Nursery & offices	2.32	1.29
14	Amenities (School & temple)	4.315	2.41
15	No of trees provided	2488	----

Table-5 Land utilization for co-generation unit

Description	Area (Acres)
Part of plot available for co-gen unit	12.5
Built up area (area also include machinery area)	3.75
Road & Open Area	8.75

5. PROJECT INVESTMENT,**Table No. 6 Project investment**

#	Particulars	Total (Rs. in Cr)
1	Land and Site Development	7
2	Civil Works	4
3	Plant & Machinery	16
4	Preliminary & Pre-operative exp.	3
5	Power evacuation arrangement	1
6	Contingencies	2
7	Margin Money	4.5
8	Supervision charges for evacuation Power	2.68
9	Miscellaneous fixed assets	3.5
	Total (Rs. in lac)	43.68

6. Raw Materials and Products for Cogeneration plant

List of raw material along with its quantity and source is given in Table no.2.6

Table No. 7: Raw Materials

#	Raw Material	Quantity (T)
1.	Bagasse	1,98,900
2.	Cane trash	38100
3.	Imported Coal	17330

7. Resources:**7.1 Plant Capacity:**

We have existing 2500 TCD sugar plant (proposed expansion 2000 so total 4500), proposed a unit of 20.5 MW new cogeneration plant. We will convert the waste thermally in co-gen plant, due to which sufficient steam is generated to meet the sugar plant requirement as well as generation of power with available potential. Power generated is utilized for in plant requirement and also exported to the grid at reasonable tariff rate. The estimated operational days of co-gen project are 234 days. The estimated operational days of co-gen project are 234 days. The co-gen plant capacity is 13.08 MW (Avg. exportable power, Season 160 days) and 16.06 MW (Avg. exportable power, Off Season 74 days).

7.2 Raw Materials:

The capacity of the proposed co-gen project shall be 20.5 MW. For this the main and sole raw material is Bagasse during crushing season and during non crushing season are

Bagasse save during crushing season, biomass like wood chips ,cane trash (about 5% on availability, but not consider), imported coal of GCV 5500 Kcal/kg or equivalent (not consider)

Item	Quantity	Particulars
Bagasse	850 TPD	Available in District
Water	545 M ³ / d	Available in District

7.3 Raw Material Availability

Our requirement of Bagasse at the rate of 850 TPD for 234 working days will be 1,98,900 MT/annum. We have many sugar factories in the district with separable Bagasse. Survey is made and MoU obtained. Bagasse in Maharashtra is procured through state excise authority. We shall get the required Bagasse without difficulty.

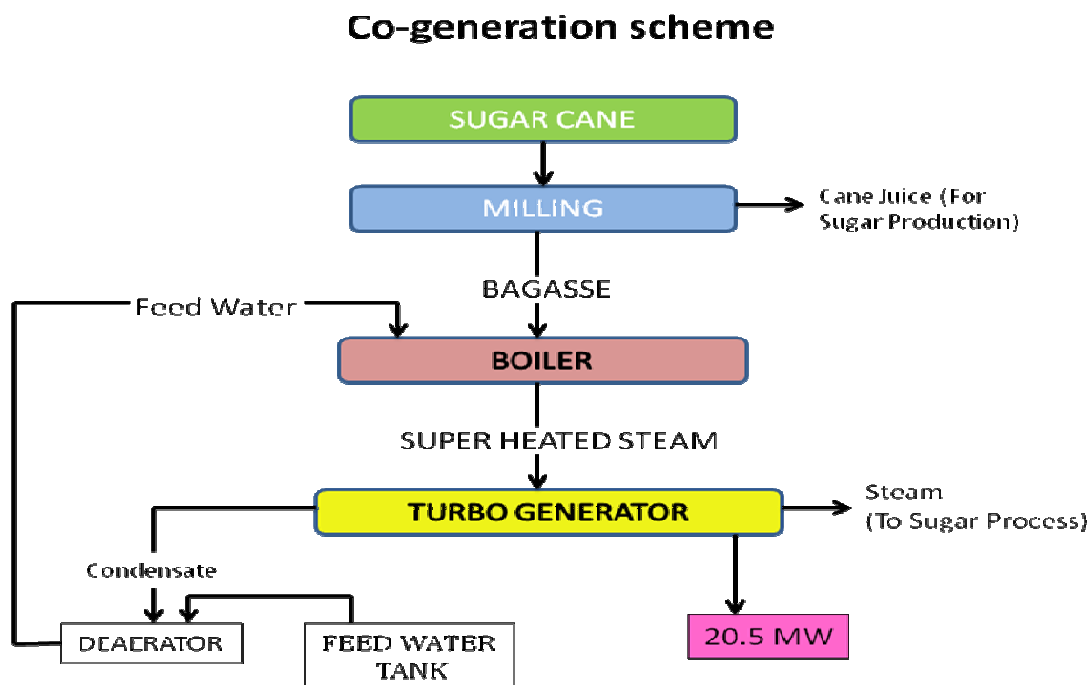
7.4 Utilities

In addition to the raw material, utilities are also required. These are:

- Fuel: Available as Bagasse and biomass like wood chips, cane trash.
- Man Power: This is an Agro based type of Industrial activity. The man power required for administration and production purposes will be recruited locally without any difficulty. The unit will need 24 workforce and 16 staff members.
- Construction workers will reside in nearby villages and residential facility will not be required for the construction personnel.)
- Total steam required for co-gen is 100 TPH + 32 TPH+ (32 TPH standby), superheated steam pressure is 108.65 kg /cm², require superheated temperature is 495 °C and inlet feed water temperature is 165 °C

8.Process:-

A) Co-Generation Power Plant:-



9. Pollution Control

9.1 Water Environment

9.1.1 Raw Water:

The water used for this Unit plant is already available, assured and dependable. Our source is granted by Govt. of Maharashtra from River Bhima about 8 kms. From the site. This is treated to a reasonable extent by us, and it has good characteristics. As it is earmarked for this industry, we are not encroaching on anybody else's water source.

Water is used at various stations like heating, cooling, process, floor washing, vessel washing, laboratory, scrubbing etc.

9.1.2 Water Budgeting:

1. Co-gen unit:-

Table No.5: Details of water balance

#	Step	Water input cum/d	Loss	Wastewater out cum/d
1	Regeneration De-min	Fresh = 10	1	Moderate BOD to ETP = 9
2	Boiler	Fresh = 200 (Make-up)	175	Sober to ETP = 25
3	Cooling	225 (Make up)	205	Sober to ETP = 20
4	Pump Blower Sealing water	Fresh = 90	5	Sober to ETP = 85
5	Floor & vessel washing	Fresh = 20	2	Mod. To ETP = 18
	TOTAL	545	388	Moderate 27 + Sober 130 = 157

For domestic purpose it is propose to use 6m³/day of fresh water
Condensed water is recovered & recycled.

Input side :

Fresh Water for Co-gen	- 545cum/d
Total Input	- 545 cum/d

The polluted effluent after ETP will be recycled collectively as 157 m³/day.

Output side :

Loss from Industrial Use	- 388cum/d
Effluent sober nature sent for ETP	- 27cum/d
Effluent Moderately polluted sent to ETP	- 157 cum/d

Total Output	- 545 cum/d

9.2 AIR POLLUTION:

9.2.1 Emission Control Equipments (ECE):

The air pollution caused by this industry is mainly from dust as SPM from fuel. The dust is not predominantly due to the composition and handling of raw materials because those are largely controlled.

The efforts taken by the Industry in this respect are also indicated. Further, regarding the product looking to the description of manufacturing operations and the corresponding flow sheet, **TI** knows from which unit operation or process, air pollutants are expected. For the purpose of arresting and capturing the pollutants, measures are proposed and designed.

Table No.6: Emission Control Equipments

#	Source	Pollutant	In-plant Measures	Control Equipment
1	Bagasse/ Cane Yard	SPM road dust, HC	Leveled Roads & land, rubber tire, slow speed. Less waiting	--
2	Boiler	SPM, CO	Feed Bagasse/husk more dry, also will be used methane. Improved quality of water	ID Fan, CO ₂ meter, Fly-ash arrestor (wet scrubber for existing & ESP for proposed) (*), Light ash through very tall stack.
3	Other effluents	H ₂ O, CO ₂	Closed transfer	Fully Aerobic regime.

(*) = The Dust Collector of suitable capacity, with hopper bottom. The dust-free air is sucked and thrown into stack through duct by I.D. Fan. The length of duct is kept very small. Instead of cyclone, ESP will be provided.

As co-gen is of moderate size and Boiler uses three types of fuels, for agro residue & Bagasse long distance haulage is not required.

10.0 Solid Waste

Based on above working, the summary is per day

Table No. 7: Solid Waste per Day

Waste	Qty kg/day	Treatment	Disposal
Canteen	10	Vermi composting	Own Garden
ETP Sludge	12	---	Authorized Recycler
Sweepings	20	Segregation	Sales

Garden trash	20	Collection	Mulching
Ash	8 TPD	Collection	Takers available (Brick kiln)
Barrel	3/month	Collection	Back to vendor
Spent oil	10 kg/d	Collection	Boiler

Guest House is very small (only nominal) and the labor strength attends in shifts. The municipal waste from the colony and canteen is thus controllable. This will be composted and used in due course on own land as manure. Plastic use is discouraged. STP sludge is organic and digested. Thus after dewatering can be used on land for conditioning. This will be so done. Office and packing trash is kept minimum and disposed by sales or reuse. In addition to above plantation is done for mitigation.

11.0 Background Study:

This is important part of study.

(A) Natural Environment: We have undertaken to do the sampling as –

1	Surface Water
2	Ground Water
3	Ambient Air
4	Ambient Noise

The stations are selected in all the directions from the factory and in 10 km radius. The Environmental quality is generally found satisfactory.

(B) Manmade environment

This includes existing land-use, demography, employment, socio-economic aspects and community development needed and proposed. This is for entire area both rural and urban in this study zone.

- Socio-Economic Status in Influence Zone will include the study of Non-Workers percentage whether high, from the percentage employed population on Agricultural, how far is the scope for other avenues of livelihood like Live Stock, Forestry, Fishing, Hunting, Orchards, Mining, Trade Commerce.
- Further out of Total Land what percentage is already under Cultivation and Out of Total Land what percentage is already under Irrigation?
- If the land is not likely to support more people, then whether Industrialization is necessary to improve the situation. All this is studied as cost benefit ratio.

It was found that industrialization is the only solution.

12.0 Safety

Safety and Occupational Health will be dealt carefully. A disciplined approach is natural to this industry. Safety policy will be in place. The unit will be Registered under Factory Act and are bound by State Factory Rules. Thus, First aid trained and Fire-fighting trained person will be available in every shift. Safety Officer will be appointed, as also the competent person retained. Where necessary, provisions of other Acts, where required like Petroleum act, Explosive Act, etc. will be obeyed. Fire fighting system is kept as per norms of Insurance Company and CIF.

DMP (Disaster Management Plan) and off-site emergency plan will be in place. Accordingly, Personal protection equipment will be given and use will be insisted. Consulting Physician is retained to attend the factory.

13.0 Benefits

We shall generate some power for the State. The liquid CO₂ will be produced which is useful for forging industry as well as food preservative. This will not disturb the present land use because our area occupied is already sanctioned by Govt. for industrial purpose, with only small % of Influence zone 10 km and already is in possession. Compatible Architecture will be adopted and No Prime Agriculture Land will be put to this industrial use. Trees will be maintained and not razed down. No Rehabilitation is involved because the land is already in possession of the Industry. The problematic waste materials like solid waste will be reused or taken care of, Wastewater will be reused to grow greenery, and air pollutants will be arrested. Water harvesting will be done and greenery will be increased. People will get some jobs here. Some incidental small employment like eatery, canteen, tyre repairs, and garage too will become available to genuine people.

In the final analysis, it is the endeavor of the Proponents to give benefits --

- To keep transparent relations with the neighbours in the area
- To strengthen the Gram panchayat democratic set up by assistance to community.
- Not to disturb any prime agricultural land
- Not to encroach on others' existing water source
- Not to overload the existing power supply, causing load-shedding to the villagers
- To remove the barren-ness of the land and prevent wasting of rainwater.
- To Recharge the groundwater
- To strengthen the physical infrastructure
- To create greenery within our premises and even outside to some extent
- To reduce the wastewater pollution created by this new activity by utilizing it in our own fields as water to grow plantation and landscaping.
- To reduce the solid waste pollution created by this new activity by utilizing it in the fields of our own community land development.
- This could be a win-win situation with benefit to Proponents, benefit to the Public and no (or low) harm to the environment.
- All this is possible for which Environment Management Plan is scrupulously obeyed.

14.0 EIA Study Report

This is finally prepared and submitted as per guidelines given by MoEF as –

Table No.8: EIA Study Report

Chapters	Contents	
I	Proponents, ToR, Purpose	
II	Project explained. Why this, Why needed, Why here, What priorities, What options	
III	Environment Setting	Natural & Man-made
	Material, Method, Approach	Delphi technique
IV	High Significant Impact → Low Insignificant Impact & Shield	
	Proper Site → Prevention → Abatement → Treatment → Mitigation → Smooth Disposal	
V	Alternate Analysis	
	Selection of Raw Materials, Site, Process, Machinery-Hardware, Collaborators, Staff & Team	
VI	Monitoring = Stations, Parameters, Frequency, Statistics, Rectify	
VII	Risk	To Environment, To Health, To Bankers
	Public	Community, Rehabilitation, Others- Assistance
VIII	Benefits = Physical, Social, Employment, Other Tangible. Sustainable??	
IX	Cost-Benefit. If Project Done? If No-Project??	
X	EMP = Plan, Cell, Schedule, Watch-dog, Monitoring, Documentation, Reporting	
XI	Summary, Conclusion,.	
XII	EIA Team = Proponent, Consultant, Associates, Future	

The preparatory drill for above was on the background of our thinking --

15.0 Conclusion:

This industry will manufacture Power by using their own waste. Project will not disturb the present land use because our total land majority is already under cultivation. for the employed majority of population is on agriculture and there is no much scope for house hold service employment, live stock ,forestry, fishing ,hunting, mining, trade commerce . Thus industrialization is necessary to improve the situation as well as no Prime agriculture land will be put to this industrial use. Trees will be maintained and not razed down. No Rehabilitation is involved. There will be no problematic waste materials as all will be utilized.

- The local people desire that industries should come here on existing plot.

- The candidate site is suitable from general MoEF expectations.
- Water, power, Raw material, and market is assured and found available with ease.
- Full precautions will be taken for Pollution Control, Resource Conservation and Environmental Protection.
- This is cost effective and Sustainable Development.

The Report gives the details and finds that the impact overall is favorable to the country, to the people and to the environment as a sustainable development.

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