EXECUTIVE SUMMARY

OF

Rapid Environment Impact Assessment Study

For

R.R. ENERGY   LTD.

Village- GARHUMARIA Tehsil-Distt- Raigarh (C.G.)

(For Public Hearing submission)

*****

:: Prepared By::
Indus Technical and Financial Consultant Ltd
205, Samta Colony Raipur (C.G.) 492001

INTRODUCTION

The Biomass base power plant of RREL is located near village Darramuda and Garh umaria , at Raigarh district in the Chhattisgarh state. The 14 MW Biomass based captive power plant is operational since Feb 2007 and 1 lakh tonnes capacity steel plant base on induction furnace is under implementation, for which the consent to establish has already been obtained. It is proposed to set up a 30000 TPA Ferro Alloys and 25 MW Coal, Char Dolochar & Washery reject based captive power plant to fulfill the power requirement

SITE AND SURROUNDING LOCATION:

The plant is located about 8 km east from Raigarh City which is situated at North Eastern part of the state of Chattisgarh. The project site is in South of the Mumbai Nagpur Howrah electrified main Rail route of South Eastern railway and nearest rail head Raigarh railway station is approx 8 Km away from the plant. All weather tar road connect the area. The latitude and longitude of the area is 21o 50' 56'' North to 21o 51' 22'' North and 83 o 24' 55'' East to 83 o 25' 10'' East in the toposheet No. 64 O/5 . The nearest airport is located at Mana village near Raipur at a distance of about 225 km from the Project area. The site is located on flat terrain having general elevation 222 m above MSL with gentle slope toward South and red brownish colour lateritic and sandy loam soil. The predominant wind direction at the site is from North East during October to May and from South East during June to September

The north and eastern side of project site is surrounded by three protected/reserve forest namely Gajmar Reserve Forest : 3 km at East- North direction, Boirdader Reserve Forest : at 9 km North-Eest direction and Urdana Reserve Forest in 9.0 Km-N The forest is dominated by Sal, Teak and Bamboo species. There are no endangered plant species reported in the impact zone. Several local species including Mahua tree and fruit bearing tree have been planted in and around the village and along the road. There is no ecological sensitive place like national park, sanctuary, biosphere reserve, heritage sites etc around 10 km of the site. A Bhitti-chitra is   the main archeological monument located at "Kabera Pahar" at 6.5 km East direction. There is no route of migratory animals within 10 km radius neither have critically polluted area because density of industry is moderate.

DRAINAGE PATTERN

The study region fall under the Mahanadi River basin and its tributaries. The impact zone drained by two perennial river i.e. Sapnai river and Kelo River. Sapnai river origin 7 km East-North direction in Sapnai village and passing 2.5 km East direction flow toward South and finally confluence to Kelo River. Kelo River passing 3 km East from the project site and flowing from North-East to South and finally confluence to Hirakund Reservoir in Orissa

Many other seasonal nalla are seen around the project site most which finally confluence in Kelo River.

1.0   PROJECT DETAILS

The technical details of the Expansion project are as follows :

Name of the Unit	:	M/s RR ENERGY Ltd
Regd. Office	:	Village: Gadh-umaria, Jharsuguda Road,Raigarh, (C.G.) 496 004
Plant Location	:	IB- Vally Road (8 Km from Raigarh towards IB vally) Village - Garhumaria , Raigarh (C.G.)
Existing Production	A	Semi Finished Steel -100000 TPA (Under Implementation)
	B	Bio-mass Power Plant – 14 MW

	C	Fly Ash Bricks Plant- 19800TPA
Expansion & Proposed Production Capacity	(A)	Bio Mass Power Plant -1 MW
	(B)	Ferro Alloys Plant 3 X3.6 MVA (Ferro/ Silico Manganese – 30000TPA)
	(C)	Captive Power Plant =25MW Coal/ Char Dolochar based
Working days/year	:	330 days
Total Land Area	:	17 hect. Total Private land
Total No. of Man-Power	:	100 Nos Existing + 90 Nos Additional Total =190 people

1.1   SALIENT FEATURES OF THE PROJECT SITE

Feature	Details
Toposheet No	64-O/5
Altitude	222 above msl
Longitude	83º24' 55"
Latitude	21º 50' 56"
Tehsil ,District,State	Gadh umariya, Darramuda Raigarh, Chhatisgarh
Max, Temp	46ºC
Min. Temp	7ºC
Relative Humidity	52%
Annual Rainfall in mm	1400 to 1600(millimeter)
Land availability	17 hectare + 4 hectare for Ash Pond
Topography	Plain
Soil Type	Predominantly clayey with upper land being laterite
Nearest River	Kelo River East 2.5Km
Nearest State Highway	Highway at a distance 0.5Km from the site .
Nearest City	Raigarh – N- 8 KM
Nearest Railway Junction	Raigarh -8 Km
Nearest Industries	1. Shree Chem resin 2. Blastech India 3. Maa Shakambari Steel (P) Ltd., 4. Shiva Shakti Steel (P) Ltd. 5. Mangla Ispat (P) Ltd 6. Ind Synergy Ltd
Nearest Village	Garh Umaria 0.5 KM Darramura S- 0.5 Km
Nearest Air Port	Mana Air Port Raipur(C.G.) - 225 Km
Nearest Forest	Gajmar Reserve Forest E – 3.0 Km ,Urdana Reserve Forest in 9.0 Km-N & Boirdadar Reserve Forest in 9.0 Km -NE
Historical Places	No
Religious Place	Gauri Shankar Temple at Raigarh city at a distance -9 Km

1.2 PROJECT COST

RREL will implements the project with a total cost of about Rs 93.10 Crores

Rs. In Lakh

S.NO	Particulars	Amount proposed (coal based Power Plant)	Amount proposed (Power Plant & Ferro Alloys)	Amount
1	Land & Development (land common for both)	Existing	Existing	00
2	Building & Civil Work	1000.0	1200.0	2200.0
3	Plant & Machinery & Other Equipment	1100.0	5000.0	6100.0
4	Electrical Installations	Common	Common	200.0
5	Preliminary & Preoperative Expenses	Common	Common	120.0
6	Contingencies	Common	Common	255.0
7	Deposit with C.S.E.B.	Common	Common	435.0
8	Total			9310.0

:

1.3 PROJECT RAW MATERIALS

The detailed breakup of raw materials

1.3.1 INDUCTION FURNACE PLANT Under Implementation)
PRODCUTION CAPACITY: 100000TPA(Semi Finished Steel Billet, Ingot)

S.NO	Particulars	Total (TPA)
1.	Sponge Iron	90000
2.	Pig Iron /Scrap	25000
3.	Ferro Alloys	1000
4.	Pet Coke	1000

1.3.2 Ferro Alloys Plant (Proposed)
Production Capacity -3 X3.6 MVA Silico Manganese

S.NO	Particulars	Total (TPA)
1.	Mn Ore	60000
2.	Sludge	6000
3.	Coke	15000
4.	Coal	7500
	Dolomite	10500
	Paste	750

1.3.3 Raw Material for Coal Based Power Plant (25 MW)

S.NO	Particulars	Total (TPA)
1	Coal	158400
2	Coal Middling /Char/Dolochar	79200
3	Limestone Dolomite	792

1.3.4 Raw Material fro 15 MW (Biomass based Thermal Power Project)

S.NO	Particulars	Total (TPA)
1	Rice Husk	142560
2	Limestone Dolomite	1188

1.4   WATER BALANCE DETAILS

	Coal based Captive Power Plant (Propose) Kl/day	Ferro Alloys Plant (Proposed) Kl/day	Biomass based Power Plant Kl/day	Induction Furnace)Kl/day
Capacity	25 MW	3.6 x3 MVA	15 MW	1,00,000 TPA
Process	Nil	Nil	Nil	Nil
Boiler	30	Nil	20	Nil
Cooling	50	28	30	60
Other	10	Nil	4	Nil
Total	90	28	54	60 Kl
Domestic	15			
Total	247			

NOTE:

1)   There will be no discharge out side the premises.
2)   The Above loss of water is mainly due to evaporation, but other losses are also inclusive.
3)   Power Plants will be based on Air circulated Cooling System, hence no loss of water will be envisaged in the steam condensation.

1.5   BRIEF MANUFACTURING PROCESS

(A) Induction Furnace:- The manufacturing process is well established and proven and presently being followed by majority of similar manufacturing units .Sponge Iron & Pig Iron and mild steel scrap, end cutting from rolling mills or scrap from user units is taken from raw material storage and necessary ingredients like Ferro Manganese, Ferro Silicon etc. are added by weight, Flux is taken up in crucible and then charge is put into it. Melting of steel along with other alloying element is accomplished in the crucible of coreless M.F. Induction Furnace. The high A.C. Current is passed through the copper oil wrapped around the outer periphery of crucible. By transformer action the A.C. Current induces much higher secondary current at 1000 hertz in charge through the coil. Enormous heat it thus developed by resistance which causes the melting of charge. As soon as the molten pool is formed very pronounced stirring action in the molten mental takes place which helps in accelerating the melting. Deoxidizing agents and sometimes specific alloying elements are also added at suitable intervals during melting. Melting of homogenous mass occurs at 1600 C. After completion of melting cycle of an hour the homogeneous mass is poured hydraulically into ladle refining furnace .After refining in LRF the Molten metal is transferred to CCM where the Billets are casted continuously. With the help of natural heat transfer the molten metal solidifies in the casted shaped. After a period of half an hour Billets are taken out.The slag generated during the Melting is removed manually through BELCHAS (Steel Spatulas) Accumulated Slag is used for land fill.

(B) Ferro Alloys Plant
The High Carbon Ferro Alloys are alloys of manganese and Iron with additions of Silicon, Carbon and several other various elements. They can be divided into various grades depending upon the content in the alloy. Manganese Ore is the basic material having the major constituents of the alloy viz. Iron and manganese. Different type of manganese ores is blended to achieve an appropriate manganese iron ratio used for the furnace charge. Coke is used as a reductant and quartz as an additional agent. The raw materials are charged into a furnace where they are smelted by electric power supplied through three carbon electrodes. The alloy and the slag produced in the furnace are tapped at regular intervals.

(C):- Power Plant (Coal Based)
A circulating   fluidized Bed Boiler is capable to use even very low grade fuel up to 2000K Cal per kg . The CFBC boiler will generate steam at high temperature & high pressure , which will drive turbine to generate 25MW Power at   11Kv , which will be boosted to 132 KV for Grid Synchronization Air cooled condenser DM Water plant of Reverse osmosis type ,Ash Handling

system will be installed for Dry Ash collection system . A very high efficiency ESP with 50 mg/Nm3 dust load design will be set up.

(D) Bio Mass Power Plant

Steam Power Plant: Steam Power Plants continuously converts the energy stored in fuel (Biomass, coal, oil, natural gas) in to steam and then to shaft work and ultimately into electricity. The working fluid is water, which is sometime in liquid phase and sometime in vapor phase during its cycle of operation power plant as a bulk energy converter from fuel to electricity using water as a working medium. Energy is released by the burning of Bio-mass . The heat is transferred to water in the boiler (B) to generate steam at a high pressure and temperature, which then expands in the turbine (T) to a low pressure and low temperature to produce shaft work. The steam leaving the turbine is condensed in cooling tower to carry away the heat released during condensation of steam vapor, this is also creates vacuum which add to the turbine force. The water (condensate= C) is then fed back in to the boiler by the pump (P) and the cycle goes on repeating itself

2.0 DETAILS OF BASELINE ENVIRONMENT DATA

2.1 BASELINE DATA

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 proposed project site.

2.2 AMBIENT AIR QUALITY

Ambient air quality was monitored for RPM, SPM, SO_2 & NO_x at 8 stations for one season. The following are the spectrum of concentrations of various parameters at various monitoring stations.

RPM	-	23..0 to 79.0 $\mu g/m^3$
SPM	-	98.0 to 305.0 $\mu g/m^3$
SO_2	-	6.4 to 19.5 $\mu g/m^3$
NO_X	-	7.9 to 20.7 $\mu g/m^3$

2.3 WATER QUALITY

Ground water samples indicate neutral nature of water with a variation in pH values in the range of 7.1 to 7.5. The turbidity is found in the range of 1.0 NTU to 5.0 NTU. Total dissolved solids are found in the range of 245 to340 mg/l. The alkalinity is found in the range of 105 mg/l to 222.0 mg/l. Total hardness for all the samples is found to be in the range of 182 to 325.0 mg/l. The concentration of Chloride and fluoride is found in the range of 45.0 to 189.0 and 0.25 to 0.4. All the ground water samples were also analyzed for heavy metals and except zinc most of the heavy metals were found to be in ND range.

The surface water characteristics include Sapnai River and Kilo River 6 samples. pH has been found to be in 7.1 to 7.7, Total dissolved solids in the range 49.0 to 66.0 mg/l. The alkalinity, total hardness and chloride concentrations are found to be 41.0 to 42.0 mg/l, 58.0 to 59.0 mg/l and 9.17 to 9.98 mg/l respectively. l. The fluoride is found to be 0.03 to 0.04 ml/l. .

Four pond water samples were also collected and analysed for different physico-chemical characteristics. The pH values are found in the range of 7.3 to 7.5 The TDS values range between 47.0 to 67.0 mg/l. The alkalinity of pond water samples range between 29.0 to 51.0 mg/l and total hardness of the samples very between 45.0 to 59.0 mg/l. Chlorides range between 9.48 to 12.32 mg/l whereas fluoride is found in the range 0.04 to 0.38

All the Surface water samples were also analyzed for heavy metals and except zinc most of the heavy metals were found to be in ND

2.4 SOIL QUALITY

The soils samples collected from all the location around the site indicate light soils with bulk densities ranging from 1.15 to 1.70 g/cm3. These soils are moderately porous (porosities ranging between 32.0 to 40.0%). The Ph is ranging from 5.5 to 6.8 The.

2.5.1 NOISE LEVELS –

Noise levels were measured at 8 stations during day time & night time. The noise levels at the monitoring stations are ranging from 49.0 dBA to 62.7 dBA.

3.0 POLLUTION CONTROL & PREDICTION OF IMPACTS

3.1 AIR POLLUTION CONTROL PREDICTION OF IMPACT ON AIR QUALITY

Stacks height of 73 Meter existing for Biomass Power Plant , 65 Meter for Captive Power Plant ,30 Meter Steel Ingot 30 Meter for Ferro Alloys respectively for effective dispersion of pollutants into the atmosphere. Electro static precipitator will be provided for Power Plant to bring down the particulate matter in the exhaust gas to less than 50 mg/Nm^3. Suction hood with bag filter for Induction furnace and Bag Filter for Ferro Alloys Plant

It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of SPM, and SO_2 are 5.84 µg/m^3 and 1.42 µg/m^3 respectively at a distance of 1000 m from the origin stack in the down wind direction.

The predicted results show that the net resultant concentrations (Max. Baseline conc. + Max. incremental rise in conc.) of SPM, SO_2 & NO_x will be well within the National Ambient Air Quality Standards after commissioning of the proposed Project. Hence there will not be any adverse impact on air environment due to the proposed Project.

3.2 NOISE LEVEL CONTROL PREDICTION OF IMPACT ON NOISE QUALITY

The major sources of noise generation in the proposed expansion Project will be Power Plant, steam turbine, generator Boiler feed pump, Steel Ingot Crushers, Screens and Compressors, Ferro Alloys Plant etc. Noise generation will be controlled at source and then arrested through enclosures & ECHO proof walls and by provided acoustic anclosured . The ambient noise levels will be with in the standards prescribed by MOE&F vide notification dated 14-02-2000 under the noise pollution (Regulation & Control), rules 2000 i.e. the noise levels will be less than 75 dBA Leq during day time and 70 dBA Leq during night time. The extensive greenbelt proposed to be developed in the Plant premises will further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed Project.

3.3 WATER POLLUTION CONTROL & PREDICTION OF IMPACTS ON WATER

The effluent generated will be treated in the effluent Neutralization cum treatment plant to meet CECB standards for on land irrigation. The treated effluent will be used for, Induction Furnace Slag Quenching Coal moistening, ash conditioning, dust suppression and for greenbelt development with in the premises. Hence there will not be any adverse impact in water environment in the surrounding of the project area due to the proposed expansion project. Rain water Harvesting pits has been constructed to recharge the ground water, it will be through augmented.

3.4 PREDICTION OF IMPACTS ON LAND ENVIRONMENT

The effluent generated from the Biomass Power Plant, Semi Finished Steel , Ferro Alloys Plant & power plants will be treated to achieve CECB standards for irrigation on land. All the required air pollution control systems such as ESP's, bag filters, dust suppression systems will be provided in the proposed expansion project 100% waste Water will be used within the project. Hence there will not be any adverse impact on land environment due to the proposed expansion project.

3.5 PREDICTION OF IMPACTS ON FLORA & FAUNA

As all the required Air pollution control systems such as ESP, bag filters, etc., are proposed along with Effluent treatment Plant to meet CECB norms there will not be any adverse impact on flora & fauna due to the proposed expansion project. The net resultant GLC's are well with in the National Ambient Air quality standards for sensitive area.

3.6 PREDICTION OF IMPACTS ON SOCIO-ECONOMIC PATTERN

With the establishment of the proposed Expansion project the employment potential will increase. The economic status of the people will improve with this project. Land prices in the area will increase. The company will provide socio-economic development support to the community, Hence there will be only positive impact on socio-economic status.

3.7 AIR POLLUTION CONTROL MEASURES

The following equipments will be installed:

- ESP for Power plant to control up to 50 mg/ nm^3 or less

- Bag filter with dust extraction system for Steel Ingot & at all the transfer points, Dust

Collector with bag filters will be installed Covered conveyor belts. Bag Filter for Ferro Alloys

- Water spraying on coal hip, coal yard and raw material will control the fugitive emissions.
- Tarred – Pucca Road inside the plant will be built
- Coal Fines will be stored under cover .
.

3.8 PLANT SAFETY AND INDUSTRIAL MEASURE :-

Plant safety and industrial hygiene will be given full attention as per provision stipulated in the factories Act. Some proposed measures are described in brief as follows.

1. Fire protection system by means of fire hydrant fire extinguisher have been envisaged.
2. A centre will be established for providing first aid and regular health care facilities to the plant personal.
3. For the operation and maintenance personal all necessary safety kits like hand gloves, gumboot, helmets, goggle, dust mask, ear-plug, safety approves , Safety shoes etc. will be provided.
4. Proper sanitation facilities drinking water facilities water sprinklers washing room change room plant lighting have been envisaged for the project.
5. All safety and health code as prescribed by BIS and department of industrial health & safety Govt of India will be strictly implemented in the plant.

4.0 ENVIRONMENT MONITORING PLAN

4.1 SUGGESTED STAFF REQUIREMENT FOR ENVIRONMENTAL MANAGEMENT

Post project monitoring will be an encaential activity of RREL . The staffing pattern shall be as follows

i.	Manager / Chief Chemist (Environment) M.Sc (Environment) / M.Sc. (Chemistry)	1
ii.	Safety Engineer Graduate with Diploma in Industrial Safety	1
iii.	Laboratory Technicians (if own lab setup) B.Sc. (Chemistry)	2
IV.	Field Assistant	4

4.2 SOLID WASTE , ASH HANDLING AND DISPOSAL SYSTEM

1) Ash generated will increase from 22000 tons per annum to 114500 tons per annum. Fly Ash   used in own Fly Ash Brick Plant and surplus will be used for land fill and these for disposal in Ash Pond
2) Slag generation will increase from 10000 tons to 24000 tons per annum. However comprehensive solid waste management will mitigate the above at the same time the unit will be able to utilize about 79800 tons per annum of char/ dolochar an industrial solid waste The Slag generated from the Semi Finished Steel Induction Furnace   will be used for metal recovery the n for filling of the low lying area as well as some people have been taking it for Brick making.
3) Thus the ultimate increase in the waste would be only to about 93000 TPA

5.0 ADDITIONAL STUDY

5.1 IMPORTANT FEATURES WITHIN 10 KM RADIUS .

There are about 67Villages in 10 Km radius in project site.

* There are no Historic Places There is only one Religious place

Gaurishankar Mandir –North –within 10 Km radius

* There are Gajmar Reserved Forest in 3.5 km-E, Urdana Reserve Forest in 9.0 Km-N and Boirdadar Reserve Forest in 9.0 Km -NE radius

* There is Kelo River at a distance of 2.5 km and Saponoai River at a distance of 7.o Km :

6.0 BENEFITS OF THE PROJECT

1 Power & Steel Production through Environment friendly Green house gas reducing technology,. The 14 MW Biomass Based Project is implemented as a CDM project. The 25 Mw Coal Based power plant will utilize Char /Dolochar

2. Increased Employment Generation.

3. Support in Cultural & Religious & Community activities.

4. Improvement in Socio Economic status

5. Industrialization through Pollutant free Environment

6. Increasing Revenue of the State

6.1 SOCIO –ECONOMIC ENVIRONMENT

With the commencement of expansion of Biomass Plant , Semi Finished Steel Ferro Alloys Plant and Power Plant project, general infrastructure facilities in surrounding village shall improve benefiting the community as such. However, in order to improve the socio-economic environment under the community development programme and improvement of the quality of life of the people, the company will further examine the possibility of providing some of the welfare measures listed below :

- Local manpower to be preferred for employment depending upon their merit and qualifications.

- Training to the local youth shall be provided for seeking employment in the industrial activity

- Assist in Agro Forestry and tree plantation program.

- Assist in Educational activities.

- Assist in Health & Medical Treatment for the Local communities

- Assist in Cultural & Religious & Community activities .

7.0 ENVIRONMENTAL MANAGEMENT PLAN
7.1 DURING CONSTRUCTION PHASE

1. After construction, all the excavated materials will be suitably disposed with proper back filling and leveling of excavated areas.

2. For Dust suppression Water spraying will be under taken to minimize the fugitive dust emission. Slopes shall be well stabilized before the on set of monsoon.:
3. The workers at site during construction will be provided with proper drinking water and sanitation facilities.
4. All laborers to be engaged in the construction activity will be examined by medical personnel before employment. Medical facilities will be provided to the laborers during construction period.
5. Noise emitting construction activities will be done in day time
6. All the foundation pits will be temporarily fenced till they will be filled back.
7. All the fabricators will be provided with the personnel protective equipment & safety devices.

7.2   DURING OPERATION PHASE

7.2.1   LAND ENVIRONMENT

Effluent will be treated to meet CECB standards for on land for irrigation. Extensive greenbelt will be developed in the proposed plant premises in 33% area. Desirable beautification and landscaping practices will be followed.

7.2.2   WATER ENVIRONMENT

Waste water generated from the project will be treated in Effluent Treatment Plant to meet the CECB standards. The treated waste water will be used for slag quenching, coal quenching, Greenbelt development with in the plant premises.

The following will be treated effluent characteristics.

pH	-	6.5 - 8.5
TSS	-	< 100 mg/l
Oil & Grease	-	< 10 mg/l
Free available chlorine	-	< 1.0 mg/l
Copper	-	<1.0 mg/l
Iron	-	< 1.0 mg/l
Zinc	-	< 1.0 mg/l
Chromium	-	< 0.2 mg/l
Phospahtes	-	< 5 mg/ l

The characteristics of the treated effluent will be well below the Chhattisgarh Environment Conservation Board standards for on land irrigation. Hence there will not be any impact on ground water / surface water due to the proposed project.

As part of post Project environmental monitoring the effluent shall be analyzed weekly for pH, TDS, SS, chlorides, sulphates and oil & grease.

7.2.3   AIR ENVIRONMENT

Two ESP's will be provided for Power Plant with less than 50 mg/Nm3 as per CREP recommendations. The exhaust gases from ESP will be let out through stacks of above 65 meter height for effective dispersion of pollutants. All material transfer points, dust-generating areas in the plant will be provided with dust extraction system consisting of Bag filters and dust suppression system with Nozzles will be provided for Ferro Alloys & Induction Furnace Plant

7.2.4 NOISE ENVIRONMENT

The major sources of noise will be steam turbine, Boilers, Transfer, Screen and Compressors. The turbine, CFBC Boiler will be of reputed make which are designed to meet the latest National / International Standards on noise levels Noise generation will be controlled at source and then arrested through acoustic enclosures.

The employees working near the noise generating sources will be provided with earplugs. Noise absorbing materials will be used in the construction of roofs, walls and floors. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise

barriers in the form of trees are recommended to be grown around power house, administrative block and other utility units.

7.2.5   GREEN BELT DEVELOPMENT

Thick greenbelt in about one third area will be developed with in the plant premises of the proposed project to further enhance environmental quality through limitation of air emissions, attenuation of noise levels, balancing eco environment, prevention of soil erosion and creation of aesthetic environment

7.2.6   RAINWATER HARVESTING

Rainwater harvesting structures constructed will be augmented to harvest the run off water from roof top and from the plant area & by laying a separate storm water drainage system for recharging of ground water.

7.3   BUDGETARY PROVISION FOR EMP

The estimated project cost is around 93.10 Crores Rs . Total capital cost for installation of the Pollution Control equipment is estimated at Rs. 7.71 Crores. The cost for the operation and recurring cost or Environment Management Monitoring and operation of Pollution Control Equipment is estimated at Rs 0.65 Crores year. Total capital cost for Ash Pond Dyke and Ash Management system is estimated at Rs. 3.00 Crores . The cost of maintaining Ash Management System and Ash Pond is estimated at Rs 0.70 Crore .

7.4   CONCLUSION

Based on the Environment Impact Assessment for different Environment components it can be concluded that the Environment impact due to proposed activities would be marginal . However strategies have been formulated under Environment Management Plan for mitigation of expected impacts and increase the beneficial Impact