

**SUMMARY ON  
ENVIRONMENTAL IMPACT ASSESSMENT  
REPORT  
OF**

**Simran Industries Pvt. Ltd.**

Patharra Village  
Bemetara Tehsil  
Durg District  
Chhattisgarh

Submitted to:

**CHHATTISGARH ENVIRONMENT CONSERVATION BOARD**  
Raipur, Chhattisgarh



### 1.0 INTRODUCTION

**Simran Industries Private Limited** has proposed to install 2 x 10 MT Induction Furnaces to produce 60,000 TPA of MS Billets, 1 x 200 TPD Rolling mill to produce 60,000 TPA of TMT Bars/Structural Steels, 4 x 9 MVA Submerged arc furnaces to produce Ferro Alloys consisting of 27,000 TPA of Ferro Silicon, 52,500 TPA of Silico Manganese & 60,000 TPA of Ferro Manganese and a FBC based Power Plant of 20 MW in Patharra Village, Bemetara Tehsil, Durg District, in the state of Chhattisgarh. 25.97 acres of land is in possession of management. The total Khasra Numbers of the total land are 144/1, 41, 100, 54, 52/2, 30, 96, 103, 52/4, 36/2, 36/4, 36, 38/2, 38/3, 39/1, 39/2, 46/3, 101/1, 101/2, 104, 102, 107/2, 119/1, 119/3, 119/4, 119/5, 109/2, 119/2, 40/1, 105/2, 40/2, 105/1, 105/3, 218. The following are products and capacities proposed in the proposed project.

Sr. No	Products	Plant Configuration	Production Capacity
1	MS Billets	Induction Furnaces – 2 x 10 MT	60,000 TPA
2	TMT bars/Structural steel	Rolling Mill – 1 x 200 TPD	60,000 TPA
3	Ferro Alloys	Submerged Arc Furnaces – 4 x 9 MVA	
	a	Ferro silicon	27,000 TPA
	b	Silico manganese	52,500 TPA
	c	Ferro manganese	60,000 TPA
4	Power generation (through FBC Boiler)	1 x 20 MW (80 TPH)	20 MW

*Pioneer Enviro Laboratories & Consultants Private Limited*, Hyderabad, NABET approved consultant for preparation of EIA report have prepared Draft Environmental Impact Assessment (DEIA) report for the proposed Steel Plant by incorporating the Terms Of Reference approved by Ministry of Environment & Forests, New Delhi. The report contains detailed description of the following:



- a. Characterization of status of environment with in an area of 10 Km. radius from the project site for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- b. Assessment of air emissions, liquid waste and solid waste from the proposed project along with the noise level assessment.
- c. Pollution control measures proposed to be adopted in the proposed Plant.
- d. Environmental Management Plan (EMP) along with Environmental Monitoring Program.

## **2.0 PROJECT DESCRIPTION**

- The proposed project area does not fall under the industrial areas / clusters, which are listed in MoEF office memorandum, dated 13<sup>th</sup> January 2010.
- Coordinates of the plant site are 21°39'18.55"N & 81°36'43.80"E.
- Dokla is the nearest village at a distance of 0.55 Km from the project site.
- There are no National Parks / Wild life Sanctuaries/Reserve Forests within 10Km radius of the project site.
- No forest land is involved in the proposed site.
- No habitation in the proposed site. Hence no Rehabilitation and Resettlement is required.
- Shivnath River is at a distance of 3.2 Km from the project site.
- NH 12A is at distance of 0.2 Km from the project site.
- No industry is running within 10 Km. radius of the project site except few rice mills.
- No litigation pending against the project and/or any direction/order passed by any Court of Law against the project.

## **3.0 DETAILS OF PROJECT**

### **3.1 RAW MATERIALS**

The raw materials required for the proposed project are Sponge Iron, Billets, Manganese ore, quartz, pet coke, MS scrap, electrode paste and coal (Indigenous/Imported).



S.No.	Item	Quantity (TPA)	Source	Mode of Transportation
<b>Induction Furnaces</b>				
1	Sponge Iron	52950	Raipur	Through covered trucks
2	Scrap	15790	Raipur	Through covered trucks
3	Ferro Alloys	600	Raipur	Through covered trucks
<b>Rolling Mill</b>				
1	Steel Billets/Ingots	66000	In plant generation & External Purchase	Covered conveyor & Through covered trucks
2	Furnace Oil	3300	Raipur	Through tankers
3	Coal for Gasifier	6000	SECL / CIL / Imported Coal	By Rail & Through covered trucks
<b>Power Plant</b>				
1	Coal (Domestic)	96000	SECL/ CIL / through E-auction	By Rail & Through covered trucks
or				
	Coal (Imported)	59000	Imported	By Sea, Rail and Road
<b>Ferro alloys plant</b>				
<b>A. Ferro Silicon</b>				
1	Quartz	32,400	Durg	Through covered trucks
2	Pet Coke	4,000	Raipur	Through covered trucks
3	M.S. Scrap	700	Raipur	Through covered trucks
4	Electrode Paste	1,600	Raipur	Through covered trucks
<b>B. Silico Manganese</b>				
1	Manganese Ore	52,500	Orissa & MOIL, Nagpur	By Rail & by Road (Covered trucks)
2	Manganese slag	60,812	In plant generation	---
3	Quartz	1,312	Raipur	Through covered trucks
4	Pet Coke	5,250	Raipur	Through covered trucks
<b>C. Ferro Manganese :</b>				
1	Manganese Ore	78,000	Orissa & MOIL, Nagpur	Through covered trucks
2	Pet coke	45,000	Raipur	Through covered trucks
3	M.S. Scrap	3,000	Raipur	Through covered trucks
4	Electrode paste	9,000	Raipur	Through covered trucks

**Note:** We do here by confirm that only Pet coke will be used and no char will be used.

### 3.2 MANUFACTURING PROCESS

#### 3.2.1 INDUCTION FURNACE

In the proposed project, initially scrap & other metallics such as Sponge Iron will be charged into the Induction furnace. After scrap & other metallics are fully melted, the temperature of the melt reaches above 1600°C and then DRI



will be continuously charged into the furnace. As soon as the charge is melted, bath samples will be taken and temperature will be measured.

There will be 2 nos. of induction furnaces each of 10 MT capacity. Concast will be used to produce Billets.

### **3.2.2 ROLLING MILL**

In the proposed project, there will 1 x 200 TPD reheating furnaces is proposed for the heating of billets. Furnace will be heated with Furnace oil. A bar and round mill will be installed in the plant to produce 200 TPD of TMT bars/ Structural steel.

### **3.2.3 FERRO ALLOYS**

Ferro manganese or Silicon manganese or Ferro silicon are produced using manganese ore in a sub-merged arc furnace using reducer and flux under high voltage.

### **3.2.4 POWER GENERATION**

Coal (Indian / Imported) will be used in FBC Boiler to generate 20 MW electricity. FBC Boiler will emit lower SO<sub>2</sub> and NO<sub>x</sub> emissions. The flue-gases will be treated in high efficiency ESP and then discharged through stack of 61 m height. The outlet dust emission will be less than 50 mg/Nm<sup>3</sup>.

### **3.3 WATER REQUIREMENT**

The proposed project requires about 690 cum/day of water. This includes Make-up water for Induction Furnace, Rolling Mill, Submerged EAF, Power Plant and Domestic water. The water requirement for the proposed project will be met from Ground water source. Water drawl permission from C.G.W.A is already obtained.



WATER REQUIREMENT

Sr. No.	SOURCE	QUANTITY (Cum / day)
1.	Make up water for SMS	100
2.	Make up water for Rolling mill	80
3.	Make up water for Ferro alloys	100
4.	<b>Power plant</b>	
	i) Boiler make up	355
	ii) DM plant regeneration	45
5.	<b>Domestic</b>	10
	<b>Total</b>	<b>690</b>

Note: In the power plant Air cooled condensers are proposed instead of water cooled condensers to conserve the precious water.

3.4 WASTE WATER GENERATION

Total effluent generated from the proposed project is 124 cum/day. There will not be any process waste water from the SMS, Rolling mill and Submerged Electric Arc Furnace as closed circuit cooling system will be adopted. Air cooled condensers have been proposed power plant instead of cooling towers to reduce the water consumption. Boiler blow-down & DM Plant regeneration will be the sources of effluent generation from the power plant.

WASTE WATER GENERATION

SOURCE	QUANTITY (in Cum / day)
Boiler Blow down	71
DM plant regeneration	45
Sanitary waste water	8
<b>Total</b>	<b>124</b>

3.5 WASTE WATER CHARACTERISTICS

The following are the Characteristics of the effluents generated from different sources.CHARACTERISTICS OF EFFLUENT

PARAMETER	CONCENTRATION		
	DM Plant regeneration	Boiler blowdown	Sanitary waste water
pH	4 - 10	9.5 - 10.5	7.0 - 8.5
TDS (mg/l)	5000 - 6000	1000	800 - 900
COD (mg/l)	--	--	300 - 400
BOD (mg/l)	--	--	200 - 250



**4.0 DESCRIPTION OF ENVIRONMENT**

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio economic details of people within 10 Km. radius of the proposed site.

**4.1 Ambient Air Quality**

Ambient air quality was monitored for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub> & NO<sub>x</sub> at 8 stations including project site for one season as per MOEF guidelines. The following are the concentrations of various parameters at the monitoring stations.

Parameter		Concentration
PM <sub>2.5</sub>	:	15.8 µg/m <sup>3</sup> to 23.4 µg/m <sup>3</sup>
* PM <sub>10</sub>	:	27.3 µg/m <sup>3</sup> to 39.3 µg/m <sup>3</sup>
SO <sub>2</sub>	:	5.9 µg/m <sup>3</sup> to 8.4 µg/m <sup>3</sup>
NO <sub>x</sub>	:	6.6 µg/m <sup>3</sup> to 13.1 µg/m <sup>3</sup>

\* PAH in PM<sub>10</sub> were analyzed and their concentrations at all monitoring Stations are below Detectable level.

**4.2 Water Quality**

Ground water samples were collected at 8 stations along with surface water samples and analysed for various Pysico-Chemical parameters. The water samples are within the permissible limits of BIS: 10500 & BIS: 2296.

**4.3 Noise levels**

Noise levels were measured at 8 locations during day time & Night time. The noise levels at the monitoring stations are ranging from 40.65 dBA to 48.65dBA.

**5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

**5.1 Prediction of impacts on air quality**

The likely emissions from the proposed Plant are PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>. The predictions of Ground level concentrations have been carried out using ISCST3. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the



model. The emissions from other industries in the area have also been considered to assess the air quality status during the operation phase of the plant. It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> during operation of plant and the other industries in the area are 0.6 µg/m<sup>3</sup>, 4.1 µg/m<sup>3</sup> and 5.0 µg/m<sup>3</sup> respectively at a distance 950 m in the down wind direction.

### NET RESULTANT MAXIMUM CONCENTRATIONS DUE TO THE PROJECT

Item	PM <sub>10</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
Maximum baseline conc. in the study area	39.3	8.4	13.1
Maximum predicted incremental rise in conc. due to Simran Industries Private Limited.	0.6	4.1	5.0
Net resultant concentrations during operation of the plant	39.9	12.5	18.1
National Ambient Air Quality Standards	100	80	80

**Note:** No major industries within the study area. Hence no incremental GLC due to other industries is considered.

The predicted results shows that the net resultant concentration (max. baseline conc. + max. incremental rise in conc.) of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> will be well within the National Ambient Air Quality Standards after commissioning of Plant. Hence there will not be any adverse impact on air environment due to the proposed Plant.

### 5.2 Prediction of impacts on noise quality

The major sources of noise generation in the proposed Plant will be STG, compressors, etc. 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 during day time and less than 70 dBA during night time. 9.0 acres of extensive greenbelt will be developed in the Plant premises to further attenuate the noise levels. Hence there will not be any adverse impact due to noise on the environment in surrounding areas due to the proposed project.

### **5.3 Prediction of impacts on Water Environment**

Closed circuit cooling system will be implemented and this will result in lower water consumption and there will not be any effluent generation from the process & cooling. The effluent generated will be from power plant activities which include Boiler blow down, DM plant regeneration and this will be treated in Effluent treatment plant. This treated effluent after ensuring compliance with norms of CECB/CPCB will be used for dust suppression, ash conditioning & for greenbelt development. Zero effluent discharge will be adopted in the proposed plant. Sanitary waste water will be treated in septic tank followed by soak pit. Rain water harvesting will be implemented in consultation with Central Ground Water Board. This will help in improvement of ground water table in the area. Water drawl permission from C.G.W.A is already obtained; hence there will not be any adverse impact on water quality or quantity due to the proposed Plant.

### **5.4 Prediction of Impacts on Land Environment**

The effluent will be treated to achieve CECB standards for on land for irrigation. Zero effluent discharge will be adopted. All the required air emission control systems will be provided to comply with CPCB/CECB norms. All solid wastes will be disposed / utilized as per CPCB/CECB norms. Hence there will not be any adverse impact on land environment due to the proposed Plant.



**5.5 Socio - Economic Environment**

There will be lot of opportunities in employment to local people during construction as well as in operation phase. There will be an upliftment in Socio Economic status of the people in the area. Regular medical check ups will be conducted in the village. Hence there will be further development of the area due to the proposed Plant.

**6.0 ENVIRONMENTAL MONITORING PROGRAMME**

Post project monitoring will be conducted as per the guidelines of CECB and MoEF are tabulated below.

**MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS**

S. No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
<b>1. Water quality</b>				
	Water quality in the area	Once in a month except for heavy metals which will be monitored on quarterly basis.	Grab sampling	As per IS: 10500
	<b>Waste water quality</b>			
	Effluent at the outlet of the ETP	Twice in a month	Composite sampling (24 hourly)	As per EPA Rules, 1996
	Sanitary waste water	Twice in a month	Composite sampling (24 hourly)	As per EPA Rules 1996
<b>2. Air Quality</b>				
A.	Stack Monitoring	Online monitoring (CFBC Boiler stack)		SPM
		Once in a month		SO <sub>2</sub> & NO <sub>x</sub>
B.	Ambient Air quality	Twice a week	24 hours continuously	PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> & NO <sub>x</sub>
C.	Fugitive emissions	Once in a Month	8 hours	PM
<b>3. Meteorological Data</b>				
	Meteorological data to be monitored at the proposed project site.	daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.
<b>4. Noise level monitoring</b>				
	Ambient Noise levels	Twice in a year	Continuous for 24 hours with 1 hour interval	



**7.0 PROJECT BENEFITS**

The local areas will be benefited by way of generation of employment opportunities, increased demand for local products and services. There will be an overall improvement in the income level of the local people.

The project creates employment to about 200 persons once the plant is commissioned and for 500 persons during construction stage. Priority will be given to locals for Semi-Skilled and Unskilled workers. With the development of this plant there will be lot of scope for more industrial investments which in turn will benefit the nation.

**8.0 ENVIRONMENT MANAGEMENT PLAN**

**8.1 Air Environment**

S. NO.	UNIT	AIR POLLUTION CONTROL SYSTEM
1.	FBC Boiler	Electro Static Precipitator
2.	Induction Furnaces	Fume Extraction system with bag filters
3.	Submerged Arc Furnaces	Fume Extraction system with bag filters

The following air pollution control systems/ measures are proposed in the Plant

- All the dust prone points material handling systems will be connected with de-dusting system with bag filters.
- All discharge points and feed points, wherever the possibility of dust generation is there a de-dusting suction point will be provided to collect the dust.
- All the required Air emission control measures will be strictly implemented so that the ambient air quality will be within the Revised National Ambient Air Quality standards during the operation of the plant.
- Extensive greenbelt proposed to be developed will help in further mitigating the air emissions.



## 8.2 WATER ENVIRONMENT

Waste water generated from the proposed Plant will be treated in Effluent Treatment Plant and fully reused within the plants/premises. Zero discharge system will be adopted.

### EFFLUENT TREATMENT PLANT

The effluent generated from the proposed Plant will be treated in the following manner. pH of the boiler blowdown will be between 9.5 to 10.5 & that of DM Plant regeneration will be between 4 to 10 . Hence a neutralization tank will be constructed for neutralizing the boiler blow down & DM plant regeneration water. After neutralization these two effluent streams will be taken to a Central Monitoring Basin (CMB). Part of this treated effluent will be utilized for dust suppression, part of it for ash conditioning and the remaining will be utilized for green belt development within the premises. A dedicated pipe distribution network will be provided for using the treated effluent. Sanitary waste water will be treated in Septic tank followed by soak pit. No effluent will be let out of the plant premises. Hence Zero discharge concept will be implemented.

## 8.3 SOLID WASTE GENERATION & DISPOSAL

S.No	Solid waste	Quantity	Disposal
1.	Slag from SMS	6000 TPA	Will be used in road construction
2	Mill scales from Rolling mill	3000 TPA	Mill scale will be used in SMS.
3.	<b>Slag generation from Ferro Alloys manufacturing</b>		
	a) Ferro Manganese	60812 TPA	To be used in manufacture of Silico Manganese as it contains high MnO <sub>2</sub> and silicon.
	b) Silico Manganese	45360 TPA	To be used for road construction.
	c) Ferro Silicon	7596 TPA	Will be given to cast iron foundries.
4.	Ash from Power Plant (with domestic coal)	43200 TPA	Partially consumed as raw material for in-house brick making and remaining will be sold to nearby brick manufacturers
	(or)		
	Ash from Power Plant (with imported coal)	5900 TPA	Consumed as raw material for in-house brick making.



#### **8.4 Noise environment**

The major sources of noise in the proposed Plant will be STG, DG set & compressors. 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 administrative block and other utility units. Training will be imparted to plant personnel to generate awareness about the damaging effects of noise.

#### **8.5 Land Environment**

The waste water generated from the Plant will be treated in the Effluent Treatment plant to comply with the CECB standards and will be used for dust suppression, ash conditioning and for greenbelt development. All the required Air pollution control systems will be installed and operated to comply with CECB norms. Solid wastes will be disposed off as per norms. Extensive greenbelt will be developed in the plant premises as per CPCB norms. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed Plant.

#### **8.6 GREENBELT DEVELOPMENT**

9.0 acres of greenbelt will be developed in the plant premises. Greenbelt will be developed as per CPCB guidelines. 15 m wide greenbelt will be developed along the periphery of the plant. Capital cost for environment protection is Rs. 16.0 Crores.



**8.7 IMPLEMENTATION OF CREP RECOMMENDATIONS**

All the CREP recommendations will be strictly followed in the proposed Plant.

**8.8 POST PROJECT ENVIRONMENTAL MONITORING**

Ambient Air Quality, Stack monitoring & effluent analysis will be carried out regularly as per CPCB norms and the analysis reports shall be submitted to MoEF & CECB regularly.

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