
**SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT
REPORT**

OF

MSP Metallics Limited

Expansion of Steel Plant

at

Marakuta Village,
Jharsuguda Tehsil & District,
Odisha

Submitted to:

STATE POLLUTION CONTROL BOARD, ODISHA
Bhubaneswar, Odisha

1.0 PROJECT DESCRIPTION:

M/s. MSP Metallics Ltd. has set up an Integrated Steel Plant having the facilities starting from processing of iron ore and coal up to production of Mild Steel Billet through Pellet, Sponge Iron, Sinter, Pig Iron and Billet which have been commenced from April 2009 onwards in phases. This unit of the company is located at Marakuta village in the district of Jharsugda, Odisha which is a part of industrial region close to the resources of coal.

Environmental Clearances for the entire project has been obtained from MoEF vide its letter no. I-11011/494/2007-IA II(I) dated 13th July, 2009 for setting up of the Integrated Steel Unit to produce 0.994 MTPA Sponge Iron , 1.06 MTPA Pig Iron, 1.05 MTPA Steel Billet with 85 MW CPP. All Units are implemented in part with proper Consent-to-Establish and valid Consent-to-Operate of State Pollution Control Board (SPCB) of Odisha too.

OBJECTIVE OF REDUCTION & EXPANSION :

The Promoter of the project, due to scarce availability and rising of price of iron ore & coal, compelled to shift their focus of producing value added special category steel products such as Seamless Tube & Steel Rod, Blast Furnace instead of DRI (Sponge Iron) route. As a strategic measure, capacities of Sponge Iron (DRI) is reduced substantially along with the Coal washery, Coke oven and CPP. In order to match the capacity of metallics enhancement of Pellet and Sinter capacity is envisaged.

Accordingly ToR has been issued by the MoEF vide letter no. J-11011/331/2012-IA II(I) dated 9th May, 2013. The profile of the project capacity reduction, enhancement and new products addition is summarized in the table below :

Sl. No.	Plant / Product	EC obtained on 13.07.2009	Existing facilities	Facilities proposed for reduction	EC solicited for proposed facilities	Total EC capacity on Reduction & Addition
(ALL CAPACITIES ARE IN MTPA)						
1.	Sponge Iron	0.994	0.240	0.422 1 x 300 TPD 3 x 550 TPD	----	0.572
2.	Iron Ore Pellet	0.600	0.600	----	0.600	1.200

3.	Iron Ore Sinter	0.460	0.460	----	0.460	0.920
4.	Pig Iron (MBF)	1.060	0.188	----	----	1.060
5.	M.S. Billet (SMS)	1.050	0.260	----	----	1.050
6.	Seamless Tube	----	----	----	0.300	0.300
7.	TMT Bars & Rod	----	----	----	0.240	0.240
8.	Power	85 MW (25 MW-FBC) (60 MW-WHRB)	24 MW (16 MW-FBC) (8 MW-WHRB)	20 MW-WHRB	----	65MW (25MW-FBC) (40 MW-WHRB)
9.	Coke Oven	0.600	0.240	0.100	----	0.500
10.	Coal Washery	1.500	0.700	0.800	----	0.700
11.	Oxygen Gas	----	----	----	(~ 6000 M ³ /hr)	(~ 6000 M ³ /hr)

Total cost of the proposed restructured project is estimated at Rs.1279 Crores.

RATIONAL BEHIND RESTRUCTURING PROJECT:

Considering the following features and impact, the project has been restructured.

- (1) **LAND:** No additional land is envisaged because the new facilities would come up on surplus area after reduction of unviable production/plant facilities.
- (2) **WATER:** No need of any additional quantum of water because water requirement for enhanced facility would be less than the water balance surplus created due to substantial reduction of production/plant facilities.
- (3) **COAL:** Consumption & handling of coal will be reduced substantially, by around 1.42 MTPA for reduction of DRI & CPP capacity.
- (4) **FLY ASH & CHAR:** Solid waste comprising Fly Ash and Char will be reduced substantially, to the tune of 0.768 MTPA for reduced consumption of coal.
- (5) **TRAFFIC:** Production of hot metal without the use of Coal shall reduce the volume of traffic proportionate to reduction of coal usage.
- (6) **IRON ORE FINES USAGE:** The unit would be capable of value addition of iron ore fines (i.e. mines waste) to produce hot metal.
- (7) **ORE SUBSTITUTE:** Pellet plant enables to produce of Iron Ore / CLO substitute from mines waste suitable for both DRI kiln & Mini Blast Furnace.

- (8) EMPLOYMENT: Targeted employment will not be affected because of addition in capacities (Pellet & Sinter) and new product (Seamless Tube + TMT Rebars + Oxygen) as well.
- (9) VIABILITY: Reorientation of project by dropping of unviable projects would enable us to strengthen project's bankability and enrich the State Exchequer too.
- (10) GROWTH IMPAIRMENT: Development and growth of the unit is bound to saturate and consequential erosion of financial condition impacting socio-economic standard of peripheral area can not be prevented without restructuring the project proposed herein.

CONSULTANT FOR THE PROJECT:

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India for conducting EIA studies for Steel plant, have prepared this Draft Environmental Impact Assessment (DEIA) Report for the proposed expansion project of Steel plant by incorporating the TOR approved by Ministry of Environment & Forests, New Delhi. The report contains detailed description of the following:

- Characterization of status of environment with in an area of 10 km radius from the plant 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 project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development.
- Post Project Environmental Monitoring.

1.1 Raw Materials

The following will be the raw material requirement for proposed expansion project:

Raw material	Quantity (TPA)	Source of Supply	Method of Transportation
For Iron Ore Pelletization Unit			
Iron ore fines	65000	Sundergarh / Keonjhar Dist. Odisha	By Rail & Road (Covered Trucks)
Bentonite	6000	Bhuj – Gujarat / Chhattisgarh	By Road (Covered Trucks)
Limestone	6000	Odisha / MP / Chhattisgarh	By Road (Covered Trucks)
Dolomite	6000	Jharsuguda	By Road (Covered Trucks)
Coal (Imported)	4680	Imported from Indonesia / South Africa	By Sea, Rail & Road (Covered Trucks)
For Sinter Plant			
LD Slag	8360	In plant generation	Through Closed Conveyor
Iron ore fines (MG)	312315	Sundergarh / Keonjhar Dist. Odisha	By Rail & Road (Covered Trucks)
Limestone	71515	Odisha / MP / Chhattisgarh	By Road (Covered Trucks)
Dolomite	46425	Jharsuguda	By Road (Covered Trucks)
Coke Breeze	15605	Dhanbad, Jharkhand	By Road (Covered Trucks)
Mill Scale	26520	In plant generation	Through Closed Conveyor
BF Flue Dust	8360	In plant generation	Through Closed Conveyor
Dust / Sludge	10455	In plant generation	Through Closed Conveyor
For Steel Melting Shop			
Fe Alloys	7390	Meghalaya / Chhattisgarh	By Road (Covered Trucks)
Iron ore	4620	In plant generation	Through Closed Conveyor
Calc. LIME	25410	Jharsuguda	By Road (Covered Trucks)
Calc. DOLO	9240	Jharsuguda	By Road (Covered Trucks)
Return Scrap	46200	In plant generation	Through Closed Conveyor
Oxygen	25.41 x 10 ⁵ Nm ³	In plant generation	Through Pipes
Argon	0.6 x 10 ⁵ Nm ³	In plant generation	Through Pipes

Nitrogen	13.86 x 10 ⁵ Nm ³	In plant generation	Through Pipes
For Continuous Casting Shop			
Liquid Metal	462000	In plant generation	By Closed conveyor
For Seamless Tube Mill			
Rounds	445000	In plant generation	By Closed conveyor
For Oxygen gas unit			
Air	465.7 Lakh NM ³ (~ 6000 M ³ /hr)	----	Through Pipes

1.2 Manufacturing Process

1.2.1 Pelletisation Plant

Iron ore fines will be grinded in Ball mill will be concentrate will be fed to thickener and subsequently to filtering unit. The filter cake will be sent to pellet plant comprising of Travelling grate machine. Green pellets will be produced from this process. The flue gases from grate kiln will be treated in ESP and discharged through a stack.

The emission from Producer gas plant will be treated in Cyclone separator to remove dust particles and Electric detarrer to separate the tar. The clean gas will be sent to Pelletization unit.

1.2.2 Sinter Plant

The proposed sinter plant complex will consist of one sinter Machine of 40 m2 grate area along with associated services facilities. The sinter plant is rated for a total production of 4,60,000 TPA of BF Sinter.

1.2.3 Induction Furnaces (Steel Making Shop)

The Steel Making Shop will comprise the following the new major plant facilities in addition to the existing Induction Furnace shop facilities:

- 1 No. of Desulphurisation unit
- 1 x 40 T Basic Oxygen Furnace (BOF)
- 1 x 40 T Ladle furnace (LF), 8 MVA
- 1 x 40 T Vaccum degassing unit (VD / VOD)

1.2.4 Seamless Tube Unit

Round billet is the input material for Seamless Tube production. The continuous cast rounds from steel melt shop will be transferred by trailer truck to Seamless Tube mill's billet preparation bay where round billets will be cut to size as per requirement of the final product. The billets are also dressed in this bay if required.

1.2.5 Rolling Mill

In the proposed project there will 1 X 800 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 800 TPD of TMT bars/ Construction steel.

1.3 Water Requirement

The water requirement for present proposal will be 1650 cum/day. This includes Make-up water for Pellet Plant, SMS, Rolling Mill, Sinter Plant, Seamless pipe unit, Oxygen gas unit and Domestic water. Total water required after present proposal will be 10123 cum/day. Water required for the proposed project will be sourced from Hirakud Reservoir. Water Resources Dept., Govt. of Odisha has revalidated the allocation of water from IB river to Hirakud reservoir. The following is the break-up of the water requirement for proposed expansion project.

WATER REQUIREMENT (cum/day)

S.No.	Unit	EC obtained	Present proposal		After present proposal
			Surrender	Present proposal	
1.	Make water for Sponge Iron	2230	945	---	1285
2.	Make water for Mini Blast Furnace	1631	---	---	1631
3.	Make water for SMS	1040	---	445	1485
4.	Make water for Sinter Plant	200	---	200	400
5.	Make water for CFBC	2970	---	---	2970
6.	Make water for Coke Oven	500	80	---	420
7.	Make water for Pellet plant	200	---	200	400
8.	Make water for Coal for washery	1400	747	---	653
9.	Make water for TMT bars & rod	---	---	190	190
10.	Make water for Seamless pipe	---	---	340	340
11.	Make water for Oxygen gas	---	---	235	235
12.	Domestic purpose	100	26	40	114
	Total	10271	1798	1650	10123

1.4 Waste Water Generation

No waste water will be generated from the present proposal of Pellet Plant, SMS, Rolling Mill, Sinter Plant, Seamless pipe unit, Oxygen gas unit as Closed circuit cooling /settling system will be adopted for re-use of them in process. Only source of waste water generation from present proposal will be sanitary waste water which will be treated in septic tank followed soak pit.

WASTE WATER GENERATION (cum/day)

S.No.	Wastewater generated from	EC obtained	Present proposal		After present proposal
			Surrender	Present proposal	
1.	Sponge Iron	---	---	---	---
2.	Mini Blast Furnace	---	---	---	---
3.	SMS	---	---	---	---
4.	Sinter Plant	---	---	---	---
5.	CFBC	560	---	---	560
6.	Coke Oven	---	---	---	---
7.	Pellet plant	---	---	---	---
8.	Coal washery	---	---	---	---
9.	TMT bars & rod	---	---	---	---
10.	Seamless pipe	---	---	---	---
11.	Oxygen gas	---	---	---	---
12.	Sanitary waste water	80	20.8	32	91.2
	Total	560	20.8	32	651.2

1.5 Wastewater Characteristics

The characteristics of sanitary waste water (untreated) will be as following:

PARAMETER	CONCENTRATION
pH	7.0 – 8.5
BOD	200 – 250 mg/l
COD	300 – 400 mg/l
TDS	800 – 900 mg/l

2.0 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 plant.

2.1 Ambient air quality

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂ & NO_x at 10 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 _{2.5}	:	15.2 to 49.1 µg/m ³
PM ₁₀	:	25.4 to 82.1 µg/m ³
SO ₂	:	6.8 to 15.9 µg/m ³
NO _x	:	7.9 to 22.3 µg/m ³

* PAH in PM₁₀ were analyzed and their concentrations at all monitoring Stations are Below Detectable Level.

2.2 Water Quality

Ground water samples were collected at 10 stations along with surface water samples and analyzed for various Physico-Chemical parameters. The water samples are within the permissible limits of IS: 10500 & IS: 2296.

2.3 Noise Levels

Noise levels were measured at 10 locations during Day time & Night time. The noise levels at the monitoring stations are ranging 43.1 dBA to 54.86 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed project are PM₁₀, SO₂, NO_x. The predictions of Ground level concentrations have been carried out using Industrial Source Complex model. 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.

It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of PM₁₀, SO₂ & NO_x during operation of the proposed expansion project in the area will be 0.6 µg/m³, 1.4 µg/m³ & 3.9 µg/m³ respectively.

Net Resultant maximum concentrations due to the Proposed Project

Item	PM ₁₀ (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)
Maximum average baseline conc. in the study area	82.1	15.9	22.3
Maximum predicted incremental rise in concentration due to the proposed plant	0.6	1.4	3.9
Net resultant concentrations during operation of the plant	82.7	17.3	26.2
National Ambient Air Quality Standards	100	80	80

The predicted results shows that the net resultant concentration (max. baseline conc. + max. incremental rise in conc.) of PM₁₀, SO₂ and NO_x will be well within the National Ambient Air Quality Standards after commissioning of proposed project. Hence there will not be any adverse impact on air environment due to the proposed expansion project.

3.2 Prediction of impacts on noise quality

The major sources of noise generation in the proposed expansion project will be DG set. The ambient noise levels will be within the standards prescribed by MoEF 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. 85.0 acres of extensive greenbelt (inclusive of existing) will be developed to 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 expansion project.

3.3 Prediction of impacts on Water Environment

There will not be any process waste water (or) cooling blow down generation from the Pellet plant, Sinter plant, SMS, Seamless tube unit, Rolling mill & Oxygen gas units as closed circuit cooling system is envisaged in the present expansion proposal. Sanitary waste water will be treated in septic tank followed by soak pit. Water required for the proposed project will be sourced from Hirakud Reservoir. Water Resources Dept., Govt. of Odisha has revalidated the allocation of water from IB river to Hirakud reservoir. Rain water harvesting pits have been proposed to recharge the precious ground water in

consultation with CGWB. The depth of ground water table will certainly increase due to these measures. Hence there will not be any adverse impact on water environment due to the proposed project.

3.4 Prediction of Impacts on Land Environment

All the required air pollution control systems will be provided to comply with CPCB / OSPCB norms. All solid wastes will be disposed / utilized as per CPCB / OSPCB norms. 85.0 Acres of greenbelt (inclusive of existing) will be developed as per guidelines. Hence there will not be any adverse impact on land environment due to the proposed expansion project.

3.5 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 further upliftment in Socio Economic status of the people in the area. Hence there will be further development of the area due to the proposed expansion project.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

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

MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	PARTICULARS	FREQUENCY OF MONITORING	DURATION OF SAMPLING	PARAMETERS REQUIRED TO BE MONITORED
1.	Water & Waste water quality			
A.	Water quality in the area	Once in a month except for heavy metals which will be monitored on quarterly basis.	Grab sampling (24 hourly)	As per IS: 10500
B.	Waste water	Once in Month	Grab sampling (24 hourly)	As per IS: 10500
2.	Air Quality			
A.	Stack Monitoring	Online monitoring Once in a month		PM SO ₂ & NO _x
B.	Ambient Air quality	Twice a week	24 hours continuously	PM _{2.5} , PM ₁₀ , SO _x NO _x
C.	Fugitive emission monitoring	Once in a month		Particulate Matter
3.	Meteorological Data			
	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.

5.0 ADDITIONAL STUDIES

Since there is no displacement required for the project, no Rehabilitation and Resettlement is involved in the proposed expansion project. Hence no R & R study has been carried out for the project.

6.0 PROJECT BENEFITS

With the establishment of the proposed project employment potential will increase. The economic status of the people in the area will improve due to the proposed project. As a CSR programme, periodic medical checkups will be carried out. Top priority will be given to locals in employment. Ancillary industries like – Transport/ Mechanical workshop/Automobile workshop/ Fabrication works.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the proposed expansion project:

S.No.	Source	Control Equipment	Guaranteed Outlet Dust Emission
1.	Pelletization Plant	ESP	<50 mg / Nm ³
2.	Sinter Plant	ESP	<50 mg / Nm ³
3.	Seamless tube plant	Fume extraction & cleaning system with Bag filters	< 50 mg/Nm ³
4.	Induction furnaces	Fume extraction & cleaning system with Bag filters	< 50 mg/Nm ³
5.	Rolling Mill	---	<50 mg / Nm ³

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

- All conveyors will be completely covered with G.I. sheets to control fugitive dust.
- All bins will be totally packed and covered so that there will not be any chance for dust leakage.
- 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.
- The collected dust from the Bag house of Steel Melting will be taken to a dust storage bin through a pneumatic conveying system.
- All the required Air pollution control measures will be strictly implemented so that the ambient air quality will be with in the 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.

7.2 Water Environment

There will not be any process waste water (or) cooling blow down generation from the Pellet plant, Sinter plant, SMS, Seamless tube unit, Rolling mill & Oxygen gas units as closed circuit cooling system is envisaged in the present expansion proposal. Sanitary waste water will be treated in septic tank followed by soak pit. Water required for the

proposed project will be sourced from Hirakud Reservoir. Water Resources Dept., Govt. of Odisha has revalidated the allocation of water from IB river to Hirakud reservoir. Rain water harvesting pits have been proposed to recharge the precious ground water in consultation with CGWB. The depth of ground water table will certainly increase due to these measures. Hence there will not be any adverse impact on water environment due to the proposed expansion project.

7.3 Noise Environment

The major sources of noise generation in the proposed expansion project will be DG set. The ambient noise levels will be within the standards prescribed by MoEF 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. 85.0 acres of extensive greenbelt (inclusive of existing) will be developed to further attenuate the noise levels.

The employees working near the noise generating sources will be provided with earplugs. 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.

Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed expansion project.

7.4 Land Environment

All the required Air emission Control systems will be provided in the proposed activities. No wastewater will be generated from the present expansion proposal, as closed circuit cooling system will be adopted. Only wastewater generated will be sanitary waste water which will be treated in septic tank followed by soak pit. Hence there will not be any impact on land environment due to the proposed plant.

The solid waste generated from the project will be reused / disposed as per norms. Hence there will not be any adverse impact on land environment due to the solid waste generated from the proposed activities.

Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed expansion project.

Solid waste generation and disposal

S.No	Waste	Quantity (TPD)	Method of disposal
1.	Slag from SMS	150	After recovery of inert material, will be used in road construction. Inert material will be reused in the Sinter plant.
2.	Tailings from Pellet	500	Will be given to ceramic industry and filled in abandoned oil exploratory wells.
3.	Mill scales from Rolling Mill	40	Will be reused in Induction furnace
4.	Mill scales from Seamless pipes unit	67	Will be reused in the Sinter plant
5.	Dust from Pellet plant, Sinter plant	100	Will be reused in the Sinter plant

7.5 Greenbelt Development

- Local DFO will be consulted in developing the green belt.
- Greenbelt of 85 acres (inclusive of existing greenbelt) will be developed in the plant premises. 15 m wide greenbelt will be developed all around the plant.
- The tree species to be selected for the plantation are pollutant tolerant, fast growing, wind firm, deep rooted. A three tier plantation is proposed comprising of an outer most belt of taller trees which will act as barrier, middle core acting as air cleaner and the innermost core which may be termed as absorptive layer consisting of trees which are known to be particularly tolerant to pollutants.
- Greenbelt will be developed as per CPCB guidelines.
- 600 plants will be planted per acre as per CPCB norms.

Capital cost for environment protection for the total project is Rs. 15 Crores.

7.6 Implementation of CREP Recommendations

All the CREP recommendations will be strictly followed in the proposed expansion plant.
