

**EXECUTIVE SUMMARY OF THE
DRAFT ENVIRONMENTAL IMPACT ASSESSMENT
REPORT**

**Project
Expansion for Manufacture of Value Added Products
In the Existing Pig Iron Complex**

Project Proponents



M/s. SLR METALIKS LIMITED
Narayanadevarakere Village, Hagaribommanahalli Taluk,
Bellary District, Karnataka **State**

Consultant

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Under the guidance of VTU, Belgaum

NABET Accreditation of Consultant

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CHAPTER - 1 INTRODUCTION

1.1 PROJECT BACKGROUND

M/s SLR Metaliks Ltd have already established and operating an Iron making industry consisting of 262 m³blast furnace with 2,00,000 TPA capacity, 33 m² sinter plant(3,31,000 TPA) and 6 MW B.F. off gas based power plant at Narayanadevarakere Village, Hagaribommanahalli Taluk, Bellary District, Karnataka State. Presently, the pig iron produced in the industry is sold to other industries for use in steel making and foundries. Granulated slag is sold for use as raw material to cement industries& also used as a replacement to sand in civil works.Sinter produced is completely utilized as a captive source of blast furnace raw material. Power generated from captive source is completely utilized in the industry it-self.

All the existing units are fully operational. Now M/s SLR Metaliks Ltd propose to improve viability of the plant by value addition to the existing hot metal production by installing additional and balancing facilities to produce more valuable downstream products with ready market opportunity. Towards this objective, the company proposes establish 3.0 Lakh TPA steel plant, 3.2 Lakh TPA rolling mill, 1.2 Lakh TPA Coke oven plant, 9.0 MW coke oven off gas based power plant, 120 TPD oxygen plant, 10TPH Pulverized coal injection plant and Producer gas plant 15000NM³/hr in the existing plant .

1.2 LOCATION FEATURES OF THE PROJECT

The proposed site for the expansion is located at Narayanadeverakere Village, Hagaribommanahalli Taluk, Bellary District, Karnataka. SH-25 joining Harihar and NH-13 is located at a distance of about 4.3km SE, NH-13 joining Hospete and Chitradurga is located at a distance of about 6.5 km E.District head quarter Bellary town is located at 85 km E from the site. District Bellary has which is proximate to rich deposits of Iron ore. Hospete&Sandur area provide an assured and continuous supply of raw materials. The nearest railway station at Vyasanakere, 7.2km NE from the site.The location is very well connected by Road & Rail.

Land-use pattern around the project site is basically agrarian.

1.3PROCESS DESCRIPTION

The production capacity and the plant facilities established in the existing industry and those proposed for expansion are given in Table-1.1

Table-1.1 Existing & Proposed Plants and their Capacities

Sl. No.	Plant/product	Capacity
EXISTING PROJECT		
1	Pig Iron	2,00,000 TPA
2	Sinter Plant	3,31,000 TPA
3	BF Gas based captive Power Plant	1 x 6 MW
PROPOSED PROJECT		
1	Steel plant	3,00,000 TPA
2	Rolling mill	3,20,000 TPA
3	Coke oven plant	1,20,000 TPA
4	Coke oven off gas based power plant	1 x 9.0 MW
5	Pulverized coal injection	10 TPH
6	Air separation plant	120 TPD Oxygen capacity
7	Producer gas plant	15000 Nm ³ /hr

Steel plant will be added in the industry to convert hot metal produced from blast furnace into special steel, a high value and much needed product. Similarly the rolling mill based on steel plant product will be established to cater additional market and to realize higher returns to the product. Coke oven plant will be established to manufacture metallurgical coke for captive utilization in BF plant. Further an air separation plant will be installed for generation of oxygen and nitrogen for their captive use in steel plant. In addition, a captive power plant based on coke oven off gas will also be installed along with coke oven plant. Producer gas is used in Reheating furnaces of rolling mill. Pulverized coal injection system will be established to enhance the performance of blast furnace and also to reduce the coke consumption.

1.4 LAND UTILISATION

The proposed site is located at Narayandevarakere, Lokappanahola Village, Near Hagaribommanahalli Tq., Bellary Dist., Karnataka State. The industry possesses 50 acres land for the existing activities. The extent land to be provided for the proposed project is 190 acres. 90 acres of land is already allocated through KIADB another 100 acres is under process through KIADB. 65 acre land will be utilized for green belt and greenery development, 76 acres will be built up area for establishment of project facility and 49 acre will be vacant open land for future development.

1.5 MANPOWER REQUIREMENT

A maximum of 400 persons will be engaged during construction period and 550 persons during operation period of the proposed project. More than 90 % of the persons employed in the industry will be recruited from the local area. Hence the influence of influx on environment is insignificant.

1.6 RAW MATERIAL REQUIREMENT

The main raw material required for Steel mill are hot metal generated from captive source, DRI, scrap& fluxes. The coking coal is used in coke oven plant and B grade coal is used in producer gas plant. The coke oven gas is used as fuel in coke oven gas based power plant. A water reservoir of 100d capacity will be constructed to store water for use during lean flow period.

1.7 WATER REQUIREMENT

The source of water for the proposed plant will be Tungabhadra River. The fresh water requirement for the proposed project will be about 3005 m³/d including 2965 m³/d industrial and 40 m³/d for domestic use. The water will be drawn from the river only during the overflow period of the Tungabhadra dam.

1.8 FUEL& POWER

Fuel like HSD, Furnace oil, coke and plant generated BF gas, producer gas, coke oven gas will be will used for heating in furnaces and power generation.

Table 1.2: Fuel requirement and use

Sl. No.	Fuel	Utilization	Quantum
1	HSD/LDO	Turndish Pre heating, 2 nos.	600 KL/Yr
2	Furnace oil	VD Boiler / Re heating furnace	3,000 KL/Yr
3	B Grade coal	PCI Unit/ producer gas plant	30,000 TPA
4	BFG	Ladles preheating, 4 nos./reheating furnace.	30,000NM ³ /hr.

1.8.1POWER :

The proposed industry is power intensive and needs assured power at economical cost. The total power requirement of the industry is 20MW. 9 MW power will be available from coke oven off gas based power plant & 11MW will be obtained from KPTCL grid.

CHAPTER - 2

DESCRIPTION OF ENVIRONMENT

Base line environmental data were collected from primary and secondary sources for the study area of 10 km region around the project site.

2.1 CLIMATE

The region experiences dry climate with hot summer and moderate winter. Monthly maximum temperature during summer and minimum temperature during winter reach to 38⁰C and 14⁰C, respectively. Relative humidity is in the range of 34% to 79% during. Average annual rain fall is 760 mm and most of the precipitation occurs during July to September. Light to moderate winds with monthly mean velocities of 1.6 km/hr to 20.52 km/hr blow through the year. Predominant directions of wind are SE to NE or NE to SW.

2.2 AIR ENVIRONMENT

Ambient air quality of the study area was monitored at 12 different locations. Maximum concentration ($\mu\text{g}/\text{m}^3$) of observed is PM₁₀ :61.4, SO₂ 13.2 and NO_x 12.6, respectively. Permissible limits of these parameters for rural area are SPM₁₀ :100, SO₂ :80 and NO_x :80, respectively. The quality of air in the region is good and with in the permissible limits for the rural area.

2.3 WATER ENVIRONMENT

The quality of ground water samples from 8 bore wells around the site and surface water samples from Tungabhadra River were monitored. The river water is suitable for drinking after conventional treatment and disinfection. The hardness and dissolved solids of some of the bore well waters is above the desirable limits and with in the permissible limits for drinking water.

2.4 SOIL QUALITY

The quality of soil samples collected from 3 different locations in the study area was analyzed. The soil in the region is sandy loamy to brown soil. The soils are slightly alkaline with moderate organic carbon and other nutrients.

2.5 SOCIO ECONOMICAL

The region is rural and economically backward. Infrastructure facilities including education, medical, road, transportation and job opportunity are limited. The region is basically agrarian and crops cultivated are ground nut, maize, sun flower, cotton,juvar and sugar cane.

2.6 ECOLOGY

No protected forests or thick plantations in the region. There is no endangered flora or fauna species in the region.

CHAPTER-3

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The environmental parameters such as air, water and land are likely to be affected by the discharges of gaseous, liquid and solid wastes. The environmental impacts and their mitigation measures are given below.

3.1 WASTE WATER

The waste water generated from the industry includes domestic effluent, 32m/d and industrial effluent consisting of blow down from circulating cooling & quench water. The consisting of is treated in septic tank and the sent to existing sewage treatment plant for treatment. The industrial effluent is neutralized and settled in guard pond and then sent to dust suppression and greenery development.

3.2 AIR ENVIRONMENT

The gaseous emission sources are mainly from furnaces and boilers. The gases generated from producer gas plant and coke oven plant consist of mainly suspended particles. These gases are cleaned in a gas cleaning plant consisting of scrubber and bag filter and then used as fuel. Flue gases from furnaces contain pollutants such as SPM, SO₂ and NO_x. These gases are de-dusted in bag filter and then vented through stacks of adequate height. Boiler vent gases are vented through the stack of adequate height. These gases contain pollutants such as SPM, SO₂ and NO_x. The concentration pollutants in flue gases are within the permissible limits and will not affect the air environment. The concentration of pollutants in these vent gases is within the permissible limits hence will not cause significant impact on environment.

3.2.1 FUGITIVE EMISSIONS

Fugitive emissions in the plant are likely to be present at crushers, graders, feeding and unloading points storage yards and roads. At these locations de-dusting systems consisting of collection hood, ID fan, bag filter, duct and stack will be provided. Water spraying and sprinkling is practiced at raw material loading, unloading points and storage yards to control fugitive emissions in the premise.

3.3 SOLID WASTES AND ITS DISPOSAL

Solid wastes such as coal fines, Coke fines, EOF, LRF Slag and GCP Sludge, mill scale are produced in the industry. Coke fines, GCP Sludge and mill scale are used input in sinter plant. Coal fines are used as input to coke oven. EOF and LRF slag are sold is used for brick manufacturing, road works and civil works. Cut ends and scraps are reused in the Steel melting shop. Coal ash is sold to brick manufacturers. Solid wastes are completely reused in the plant. No solid wastes are disposed to environment.

In view of the waste management and pollution control measures as above the environment including air, water or land environment is not affected by the activities of the industry.

CHAPTER-4

ENVIRONMENTAL MONITORING PROGRAMME

An environment Environmental Cell is established in the industry to implement and monitor environmental policy and programme.

4.1 ENVIRONMENTAL MANAGEMENT CELL

Environmental cell consisting Chief Executive Officer and departmental heads will be created to effectively manage and monitor the environmental activities in the distillery.

4.2 ENVIRONMENTAL DEPARTMENT

Environmental department will be formed with environmental scientist, laboratory chemists and operators to implement and operate pollution control and environmental protection and up-gradation measures.

4.3 SELF MONITORING SYSTEM

Self monitoring system consisting of well equipped laboratory with man power and facilities will be established under Environmental department in the industry to analyze waste water, soil, stack emission, ambient air etc. to ascertain the compliances of environmental norms and standards.

4.4 ENVIRONMENTAL RECORDS

Environmental department will maintain log sheets and records for operation and maintenance of pollution control and related facilities. Progress reports and statutory records for submission to authorities will also be maintained.

CHAPTER-5 ADDITIONAL STUDIES

5.1 PUBLIC CONSULTATION

The Public hearing and Public consultation as per the guidelines will be conducted in co-operation with KSPCB.

5.2 RISK ASSESSMENT

Risk assessment studies for the industry are being conducted to ensure safety and reliability of plant through a systematic and scientific methods to identify possible failures and prevent their occurrences before they actually cause disasters and production loss.

5.3 SAFETY MANAGEMENT AND PERSONNEL HEALTH CARE PROGRAMME

Environmental cum Safety officer will be appointed in the industry to manage safety and occupational health care programme.

- i. Safety training will be given to the employees.
- ii. Safety appliances, first aid medical kits and Personnel protective will be maintained.
- iii. Health and safety related displays will be provided in the work place and premise.
- iv. Fire fighting facility including Fire hydrants, fire extinguishers and fire protective appliances will be provided.
- v. Medical Check ups and health records of employees will be maintained.

5.4 EMERGENCY MANAGEMENT PLAN

The project proponents have prepared an "Onsite Emergency Plan" for the industry with the main objective to keep the organization in a state of readiness to contain the emergency and its cascading effect and to bring the incident under control with priority to saving of life, preventing injury and loss of property and also to bring back the plant to normality and working condition. Onsite Emergency Plan is the systematic information along with a set of instructions and preparatory details to meet such eventualities with a view to contain it to be minimal in terms of damage or loss to health, life, property with in the industry or outside the industry.

CHAPTER-6

PROJECT BENEFITS

1. The industry is established in backward region of the state. The presence of the industry helps to develop road and transportation facilities in the region and also to improve the economic status of this rural under- developed region.
2. The industry after execution will create 450 direct and 1500 indirect employments to the local population in terms of factory employment, transportation, vehicle maintenance, petty shops, etc.
3. The industry has the potential to curtail the import of coke and steel and allied products. Thus the industry has the advantage to improve foreign exchange position and the economic status of the country.
4. The industry has proposed to take up socio- developmental activities such as:
 - Contribution for arrangement of mass marriages
 - Road improvement in the region.
 - Contribution for sports development in the rural area
 - Contribution to primary education
 - Health care services to villagers
 - Contribution for drinking water facility in the area
5. Self sufficiency will be attained on Met-Coke and Power so as to be one of the most competitive manufactures of Alloy Steel with positive impact on environment.
6. Dependency on Imported costly coke will be overcome. Coke will be generated using Indian Coal and Power will be generated by cogeneration principle.

The Proposed Plant will be cost effective, environmentally friendly & energy wise efficient. This will help the company in facing the market competition.

Production of down stream products in the industry will improve economic viability and sustainability of the existing project.

CHAPTER-7

CONCLUSION

1. The proposal is for manufacture of downstream and associated products. This will reduce transportation and operation cost and result into overall economy and viability of the industry.
2. Metallurgical coke from coke oven plant will be utilized as captive source in the existing BF plant. Coke oven off gases will be used in waste heat recovery boiler for generation power. The power thus generated will be used in the industry as a captive source.
3. This industry does not produce any toxic products and does not have significant adverse effect on the quality of land, water and air. The industry has taken all the necessary preventive measures to mitigate even the small effects which might be caused by industrial activities.
4. Gaseous emissions will be generated from furnaces, boiler, fume exhaust will be treated in suitable APC system and vented through the stacks of adequate height.
5. The concept of Reduce, Reuse and Recycle is also practiced in the industry as per the eco-policy of Govt. of India. This will result in high performance, and minimal resource utilization. With the addition of steel making units energy savings of 405 KWH/ton of pig iron will be saved as it avoids re-melting of pig iron.
6. Wastewater generated in the industry will be treated and re used for industrial purpose and green belt and greenery development in the factory premise.
7. The site is connected to supply of raw material and product utilizers through well laid national and state high ways and railway lines. The traffic on these lines is with in the permissible limits.
8. The project is proposed in economically & industrially backward / rural area of Karnataka State.
9. The industry will adopt an effective environment management system and environment management plan to protect the environment. Due priority will be given for greenery development and rain water harvesting at the factory premises.