

## EXECUTIVE SUMMARY

### 1. Introduction

**M/s Sri Hari Sponge LLP.**, a Limited Liability Partnership company having its registered office at Plot No. #2, Ground Floor, Navodaya Catholic, opp. Opd Hospital Cantonment, Ballari Karnataka State is proposing to expand brownfield project for manufacturing Sponge Iron at Survey No 60,61, Voderahalli village, Rampur Post, Molakalmuru Taluk, Chitradurga District, Karnataka.

Considering the potential in future steel market and growing economy of the Country coupled with Government impetus to 'Make in India', the new management desired to undertake expansion in production capacity of its existing set up. The LLP owns sprawling 17 Acres 35Guntas of the land with required permissions and the proposed project can be conveniently undertaken on existing land located at Survey No 60,61, Voderahalli village, Rampura Post, Molakalmuru Taluk, Chitradurga District, Karnataka. The proposed expansion shall involve replacing 1no. of 50TPD Kiln out of 2nos. of 50TPD Kiln with a new 100TPD Kiln so as to increase the existing production capacity from 100TPD to 150 TPD. This section highlights the details of proposed project along with the availability of requisites, technical features of main plant equipment, environmental aspects and estimates of project financials.

EIA study is in particular essential for the industries causing significant environmental impacts. Ministry of Environment and Forests (MoEF), Government of India has issued EIA Notification dated 14-09-2006 in which guidelines are given for conduct of EIA study and also the list of industries attracting the said notification.

The proposed industry is listed under EIA Notification dated 14-09-2006 and as amended in December 2009 of Ministry of Environment and Forests (MoEF), Government of India. As per this notification the industry is categorized under Schedule 3(a), for Primary Metallurgical Industries (Ferrous & Non Ferrous) and Category-B. As per the notification, prior Environmental Clearance (EC) from SEIAA is mandatory before expansion of this industry. Hence, the industry has to follow due course of procedure to secure EC including application to SEIAA for EC clearance,

terms of references from SEIAA for conduct of EIA studies, public hearing/consultations and deliberation of project at Expert Appraisal Committee of SEIAA. Accordingly, the project proponents have submitted prescribed application along with pre-feasibility report to the SEIAA Karnataka seeking terms of references for conduct of EIA studies. The application for issue of Terms of References (TORs) was submitted on 14th December, 2020 to State Level Environment Impact Assessment Authority (SEIAA), Karnataka. The proposal was considered in 254th SEAC meeting held on 6th Jan, 2021. Thereafter, proposal was considered in 193rd SEIAA meeting held on 30th Jan, 2021 wherein TORs were issued for the preparation of draft EIA Report. The final TOR letter was issued by SEIAA, Karnataka vide Letter No. **SEIAA/66/IND/2020** dated 26th March 2021 copy of the TOR letter is attached along with the report.

### 1.1 Introduction of the Project Proponent

**SRI HARI SPONGE LLP** an emerging leader in manufacturing Industry engaged in manufacturing of sponge iron. The facility is located in at Survey No 60,61, Voderahalli village, Rampur Post, Molakalmuru Taluk, Chitradurga District, Karnataka.

Name of the occupier : Mr. Kailash Vyas

Contact number : 98454-46943

E-Mail : [sriharispongellp@gmail.com](mailto:sriharispongellp@gmail.com)

**Table 1: Salient Features of the existing and proposed expansion project:**

SL No	PARTICULARS	DESCRIPTION
1.	Name of Project	M/s. SRI HARI SPONGE LLP
2.	Constitution	Limited Liability Partnership
3.	Location	Survey No 60,61 (Old Sy No 17/P1,17/P2), Voderahalli Village, Rampura Post, Molakalmuru Taluk, Chitradurga District, Karnataka

4.	Type of Project	3(a) Metallurgical industries (ferrous & non ferrous) – EC-Expansion (TOR). 'B1'
5.	Project Proponent	Mr. Kailash Vyas , Designated Partner
6.	Phone	9845446943
7.	E-Mail	<a href="mailto:sriharispongellp@gmail.com">sriharispongellp@gmail.com</a>
8.	No. of employees	150 Nos.
9.	Size of Industry	Large Scale Industry
10.	Capital Cost	INR 12.00 Crores
11.	Latitude & Longitude	14°51'31.68" N and 76°44'06.18" E
12.	Nature of Business	Manufacturing of Sponge Iron
13.	Combined Consent Order by KPSPB	AW-301189 dated 07/01/2016 valid till 30/06/2021
14.	Total plot area	Total Area of the land is 17 Acres-35 Guntas
15.	Existing EC Capacity	100(2X50) TPD Sponge Iron Manufacturing
16.	Present Proposal	Increase in production Capacity of Sponge Iron Unit from 100 TPD to 150 TPD within the existing land premises by replacing 1 no. of 50 TPD Kiln with a new 100 TPD Kiln
17.	Water requirement	Existing – 27 KLD Proposed – 63 KLD Total Water Requirement – 90 KLD
18.	Source of water supply	Bore well
19.	Electrical Supply/Demand/ Connected load	Existing – 400 KVA Additional Proposed – 600 KVA Total Requirement – 1000 KVA Additional Requirement of 600 KVA is Sanctioned from GESCOM.
20.	Nearest Water Body	Chikkanahalli Lake – 3.30 Kms (SE) Appayyanahalli Kere – 5.65 Kms (NW) Nagasamudra Lake – 7.2 Kms (S) Nala which drains into Nagasamudra lake is at a distance of 6.5 Kms towards South
22.	Nearest Fire station	Fire station Molakalmuru – 15.5 Kms (South)
23.	Nearest Village	Vaderahalli Village -0.50 Kms (NW)

24.	Nearest Railway Station	Molakalmuru Railway station which is at a distance about 16.5kms towards (South)
25.	Nearest Air port	Toranagallu (Bellary) Airport at a distance of about 45kms towards NE direction.
26.	Nearest Highway	The project has a close connectivity to the SH-131 which is at distance of about 0.26kms (N), SH-19 is at 4.5Kms (W)
27	Inter State Boundaries	Andhra Pradesh state boundary is at a distance of 9.3Km (SE).

### 1.2 Need for Project

Steel is crucial to the development of any modern economy and is considered to be the backbone of the human civilization. The level of per capita consumption of steel is treated as one of the important indicators of socio-economic development and living standard of the people in any country. All major industrial economies are characterized by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the strength of their steel industries in their initial stages of development. Sri Hari Sponge LLP is having its existing units of Sponge Iron Plant. Over the last few years, there has been a great change in the Indian Economic Scenario due to Global slowdown which affected the whole world including India. These measures will certainly reduce the cost of production. It can be concluded from the Market scenario that the product has sustained marketability, more so due to the cost reduction measures being focused in the planned expansion project. Also there will be lot of scope for indirect employment of the people of the state in and around the project site like in transportation sector. Thus, to contribute to iron industries for making the end product economically viable in present fluctuating market, M/s Sri Hari Sponge LLP has decided to go for expansion in the steel plant. The EIA report is prepared as per the standard & additional ToR and EIA Notification, 2006.

## 2. Project Description

### 2.1 Land Requirement

The proposed project is an Expansion of existing Sponge Iron unit located in an industrial converted land. The Industry owns 17Acres 35Guntas of the land with required permissions and the proposed project expansion can be conveniently undertaken on existing land located at Survey No 60,61, Voderahalli village, Rampur Post, Molakalmuru Taluk, Chitradurga District, Karnataka. Hence no additional land is required and no alternative site is considered. Land use breakup is given in the

**Table 2**

**Table 2: Land Use Break Up**

<b>Description</b>	<b>Area in SQM</b>	<b>% Area</b>
Ground Built up Coverage Area	41927.56	57.96
Road and Paved Area	3431.35	4.74
Greenery Area	23871.39	33.00
Open Space Area	3107.25	4.30
<b>Total</b>	<b>72337.55</b>	<b>100.00</b>

### 2.2 Production Profile

Now the company is proposed to undertake expansion in production capacity of Sponge Iron from 100TPD to 150 TPD by replacing existing 1no. of 50TPD kiln with a new 100TPD kiln within the existing premises. Hence expansion of

Environmental Clearance is sought, for which Form-I & Prefeasibility report as Per EIA notification 2006 & its subsequent amendment for issue of Environmental Clearance is submitted.

**Table 3: The structure of production capacity (per month)**

<b>Sl. No.</b>	<b>Product</b>	<b>Existing Consent per month</b>	<b>Additional Production per month</b>	<b>Total Production Capacity per month</b>
1.	Sponge Iron	2500 MT (100TPD)	2000 MT* (50TPD)	4500MT (150TPD)

\* The current 50TPD 2nos. Kiln is operated 25days a month. The total production of sponge iron with 50TPD & 100TPD Kilns operated for 30days after expansion will be 4500MT/month. Hence the difference of Total production after expansion & the current EC capacity is declared as 2000MT/month.

### 2.3 Raw Material Requirement

The principal raw materials for manufacture of Sponge Iron are Iron Ore or Iron Ore Pellets. Coal is required as major fuel for carrying out the heating process.

**Table 4: Details of Raw materials**

Raw material	Quantity Existing (in TPD)	Quantity Proposed (in TPD)	Type of storage	Source	Transportation
<b>For Iron Ore</b>					
Iron Ore	200.00	300.00	Shed	Local Supply /Auction	Road
Coal (Fuel)	100.00	150.00	Shed	Imported	Road
Dolomite	4.00	6.00	Shed	Local Supply	Road
<b>For Iron Ore Pellets</b>					
Pellets	-	225.00	Shed	Local Supply /Auction	Road
Coal (Fuel)	-	150.00	Shed	Imported	Road
Dolomite	-	6.00	Shed	Local Supply	Road

### 2.4 Project Cost

The cost of the project for proposed expansion of Sponge Iron plant will be around INR 1231.04 Lakhs (Amount in words: Rupees Twelve Crore Thirty One Lakh four Thousand only) which includes Development of Land, Plant, Machinery & Civil works as listed below.

**Table 5: Proposed Expansion Cost**

Sl No	Particulars	Cost (INR in lakhs)
1.	Development of Land	10.00
2.	Civil and structural works of buildings	75.00
3.	Plant & Machinery – Sponge Iron Kiln	453.81

4.	Conveyor Equipment's	25.58
5.	Stock House	1.09
6.	Pollution Control Equipment's	137.84
7.	Diesel Generator 750 KVA	30.14
8.	Instrumentation and Electrical Items	204.80
9.	Erection and Fabrication Charges	142.78
10.	Foundation & Structural Items	135.00
11.	Consultancy Charges and other expenses	15.00
	TOTAL	1,231.04

## 2.5 Location of the project

The Geographical location of this industry lays in 14°51'31.68"N and 76°44'06.18"E. The proposed project location is bounded by following coordinates given in **Table 6**. The old survey numbers of the land was 17/P2 & 17/P1 and now the survey number are being renumbered as 60 & 61 respectively. The survey number details and neighboring land details are given in **Table 7**.

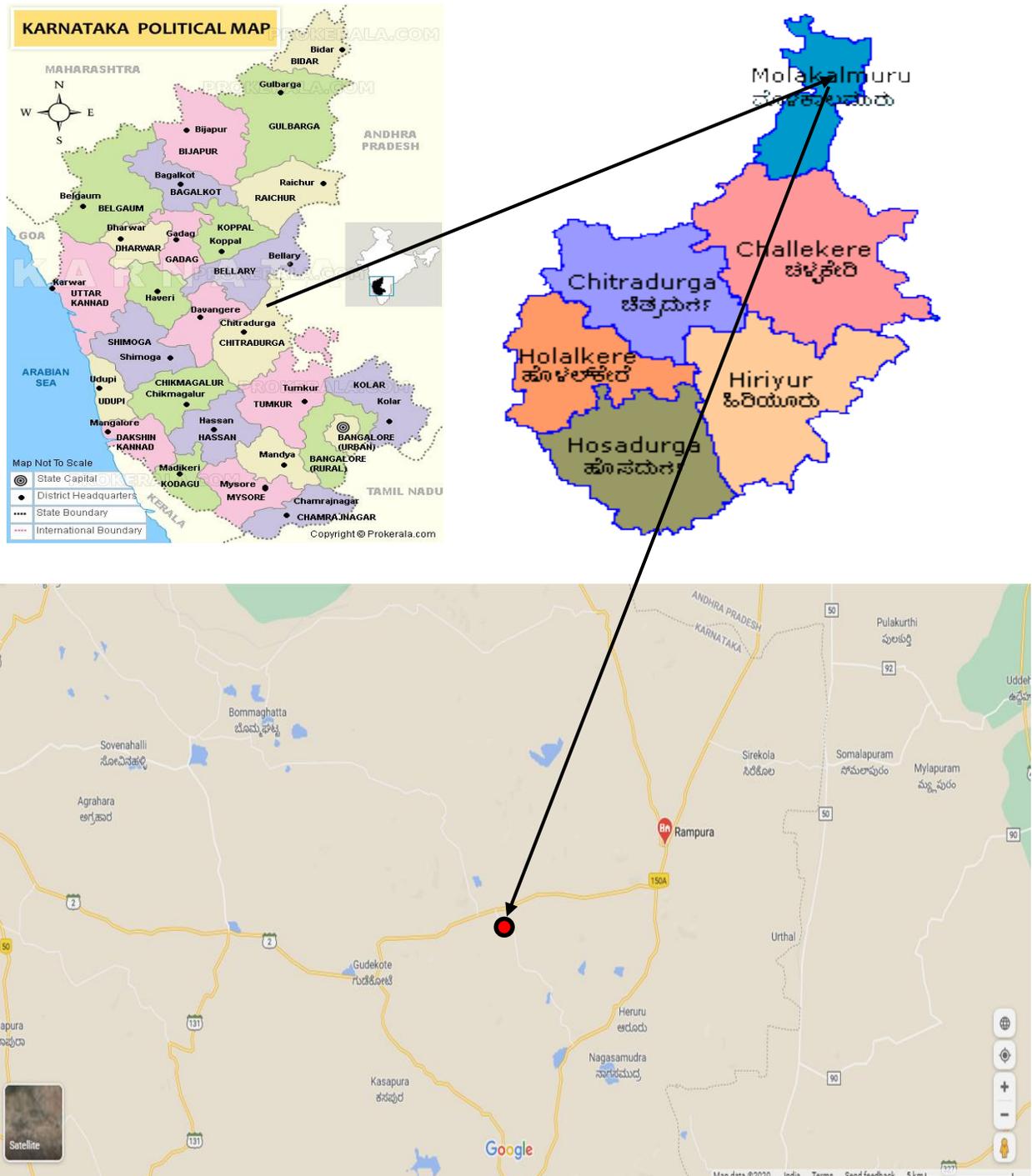
**Table 6: Corner Co-ordinates of the site**

Sl.no.	Latitude	Longitude
1	14°51'31.68"N	76°44'06.18 "E
2	14°51'32.0"N	76°44'04.6"E
3	14°51'32.4"N	76°44'05.1"E
4	14°51'33.1"N	76°44'04.6"E

**Table 7: Area with respect to Survey Number**

Sy No. 60 allotted 8Acre and Sy No. 61 allotted 9Acres 35Guntas						
Total area of 17Acres and 35Guntas						
New Sy. Nos	Old Sy. Nos.	Areas	East	West	North	South
60	Sy.No.17/P2	8Acres	61	17	62	17
61	Sy.No.17/P1	9Acres35Guntas	40	60	62	17

Figure 1: Location map of the project site



## 2.6 Water Requirement

Water requirement for existing plant is 27 KLD which is being supplied by Borewells. Proposed expansion would require additional 63 KLD as given in **Table 8**.

**Table 8: Water Requirement**

Sl. No	Water Requirement	Quantity in KLD		
		Existing	Proposed	Total
1.	Domestic	2	5.5	7.5
2.	Sponge Iron Manufacturing (Cooling Unit)	25	35	60
3.	Dust Suppression	-	15	15
4.	Green Belt	-	7.5	7.5
<b>Total</b>		<b>27</b>	<b>63</b>	<b>90</b>

## 2.7 Power Requirement

Power requirement for the existing plant is being met from GESCOM to the extent of 400 KVA. Proposed expansion would require 600 KVA leading to the total requirement of 1,000 KVA. Further, the project has DG Sets installed with capacity of 380 KVA and proposing to expand it by adding 1no DG with capacity of 750 KVA.

**Table 9: Power Source**

Sl No	Power Source	Existing	Proposed	Total
1.	From GESCOM	400 KVA	600 KVA	1000 KVA
2.	From DG (when necessary)	380KVA (1No)	750KVA (1No)	380KVA & 750KVA (2No)

## 2.8 Green Belt Area

Green belt is recommended as one of the major components of Environmental Management Plan. 33% of total area is reserved for green belt development i.e., 23871.39 sqm and presently complete 33% of the area is developed as green belt. Further some more species will be incorporated to improve the habitat and aesthetics of green belt. Some of the species proposed to incorporate are *Melia dubia*, *Siris*, *Azadirachta indica*, *Ficus religiosa*, *Mangifera indica* etc.

## 2.9 Generation of Pollutants

### 2.9.1 Gaseous Emissions

A number of systems have been adopted for air pollution control which will provide safe environmental conditions in the working area and will ensure acceptable air quality in the surrounding area of the steel plant. Different air pollution control facilities / equipment that would be considered include dust suppression systems, bag filters, Electrostatic Precipitators (ESP), etc. Cleaned waste gases would be discharged through tall stacks to ensure adequate dispersion and dilution of pollutants. Some of the air pollution sources and control measures are given in **Table 10**.

**Table 10: Details of Gaseous emission**

SL No.	Air Pollution Sources	APCD	Stack Height (AGL)
1.	Existing DG Set Capacity-380KVA	-	6m
2.	Proposed DG Set Capacity-750KVA	-	9m
3.	Cooler and Junction house	Bag Filters	30m
4.	Product separation System	Bag Filters	30m
5.	Coal crushing Plant	Bag Filters	30m
6.	Iron ore crushing plant	Bag Filters	30m
7.	Rotary Kilns (2Nos)	Electrostatic Precipitator (ESP)	50m

### 2.9.2 Waste water generation

Source of Waste water generation is from domestic activities. At present, the domestic wastewater generation is 2 KLD and from the expansion domestic wastewater generation will be 4KLD totaling to 6KLD. A sewage treatment plant of 10KLD capacity with Sequencing Batch Reactor technology is proposed for treating the sewage. The treated sewage will be reused for gardening.

Domestic: Treated in 10KLD STP.

Industrial: There is no generation of industrial waste water.

### 2.9.3 Solid Waste Generation

Solid wastes generated in the facility are of Organic waste & Inorganic waste type. Organic waste generated is STP sludge. Inorganic waste is generated from process unit. List of solid wastes and quantities are tabulated below.

**Table 14: Details of Solid wastes**

Sl No	Type of waste	Existing Qty (TPA)	Additional Qty (TPA)	Total Qty (TPA)	Disposal method
1.	Fly Ash	8640 TPA	4320 TPA	12960 TPA	Sold to Brick manufacturers
2.	Dolochar	7200 TPA	3600 TPA	10800 TPA	Sold to downstream vendors
3.	STP Sludge	-	0.5TPA	0.5TPA	Composted and reused for gardening

## 3. Description of Environment

### 3.1 Micrometeorology

The study of micro-meteorological conditions of a particular region is of utmost importance to understand the variations in ambient air quality status in that region. The prevailing micrometeorology at project site plays a crucial role in studying transport and dispersion of air pollutants released from the project site. The persistence of the predominant wind direction and wind speed at the project site will decide the direction and extent of the air pollution impact zone. The principal variables, which affect the micrometeorology, are horizontal transport and dispersion (average wind speed and directions), convective transport and vertical mixing (atmospheric stability) and also topography of the area towards local influences the micro-meteorological data recorded in the study region as well as surface meteorological data procured from IMD corresponding to nearest available observatories are appropriately used in this study. The hourly record of wind speed and wind direction during study period was used for computing the relative percentage frequencies of wind occurrences in various directions. Wind speed and

direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the area.

### **3.2 Study period**

The baseline data collection for the sponge iron facility has been carried out during the post monsoon season (**December 2020, January 2021 & February 2021**). The data collection with respect to meteorological conditions, air pollution levels, water quality, noise levels, soil quality, biological and socio economic conditions were carried out during the study period.

### **3.3 Ambient Air Quality Monitoring**

The major objective of baseline air monitoring is to evaluate the existing air quality of the area. Formulation of baseline Ambient Air Quality (AAQ) data of the study area occupies a significant role in the Environmental Impact Assessment studies in assessing the conformity to standards of the ambient air quality during the construction and operation phase of the project. A preliminary survey was conducted at 8 AAQM locations (within 10Kms radius of the project) baseline status of air environment has been assessed through ambient air quality monitoring (AAQM) network covering 8 sampling locations during December 2020, January 2021 & February 2021.

### **3.4 Noise Environment**

The current status of noise environment within 10 km radius of the project site was assessed through identification of major noise sources, receptors etc.,

A reconnaissance survey was conducted with a view to establish the baseline status of the environment with respect to noise levels in the study area. A primary survey was undertaken to identify the major noise sources in the study area. The sampling locations in the area were identified considering the location of industrial, residential & commercial. The prevailing ambient noise levels were monitored using precision noise level meter in and around 10Km radial distance at 8 locations during December 2020, January 2021 & February 2021.

### **3.5 Water Environment**

The significant representative sampling locations for ground water are chosen through reconnaissance survey of project area to determine the pre-project status of the water quality in the study area.

To establish the baseline status of water environment, the existing representative sampling locations for ground water within a radial distance of 10 Km from the site, have been selected as per CPCB guidelines of Water Quality Monitoring through an adequate survey of the project area.

The prevailing status of water quality at eight sampling locations each for surface water and ground water has been assessed during December 2020, January 2021 & February 2021.

### **3.6 Soil Environment**

The present study of the soil quality was carried out at eight sampling locations to establish the baseline characteristics of the study area and to determine the impact of the proposed project on the soil characteristics.

The prevailing status of Soil quality at eight sampling locations has been assessed during December 2020, January 2021 & February 2021.

### **3.7 Impact on Socio Economic Conditions**

There shall be positive impact on the socio economic environment of the area. Increase in direct/ indirect job opportunity shall take place. Services in the locality shall be used and accordingly growth in economic status of the area will take place.

### **3.8 Ecology**

No plant or animal species were found as per the endangered list within 10 km radius of the project location. No ecologically sensitive area like biosphere reserve, tiger reserve, elephant reserve, migratory corridors of wild elephant, wetland, national park and wildlife sanctuary are present within 10 km distance of the project location. There is a Appayannahalli reserved forest at 5.8km (NW), Santhegudda reserved forest is situated towards south adjacent to the proposed project.

#### **4. Anticipated Environmental Impact and Mitigation Measures**

This section discusses the impacts of the project activities on the environmental receptors that stand to get affected by the project. It discusses probable impacts during various phases of the project lifecycle to the environmental receptors. Many scientific techniques and methodologies are available to predict impacts on physio-ecological and socio-economic environment. Such predictions are superimposed over the baseline (pre-project) status of environmental quality to derive the ultimate (post-project) scenario of environmental conditions. The prediction of impacts helps to identify and implement environmental management plan during and after the execution of the developmental activity to minimize the deterioration of environmental quality, proposed project are discussed in chapter 4.

##### **4.1 Construction Phase**

Construction of the proposed plant will be within the existing industrial premises hence would not involve extensive land preparation & clearing. The existing industrial shed will be utilized for the proposed project. Construction of additional shed will be done for Coal & Sponge Iron storage. The major source of air pollution during construction phase will be fugitive emission due to transportation activity. Dust may arise due to movement of dump trucks, construction equipment on unpaved roads, during batching and mixing of aggregate for concrete preparation.

##### **4.2 Operation phase**

The major activities at M/s Sri Hari Sponge LLP in the operational phase involves storage and handling of various raw materials like iron ore, non-coking coal, limestone/dolomite, sponge iron as well as operations of Sponge Iron Plant, Rotary Kiln. These activities may affect the environment in varying degrees through natural resources depletion, water consumption, release of pollutants (particulates and gaseous emissions), effluent discharge, run-off from storage areas etc. Air, water and noise may be affected due to these activities. Associated activities like transportation of materials, operations of workshop and garage, canteen etc., may also affect air, water and noise environment. Greenbelt development will have a positive impact not

only on flora and fauna but also on air quality, noise and soil characteristics. Positive impacts on socio-economic environment are expected due to employment & infrastructure development.

### **Positive impact**

- **Impact on Human Settlement**

There is no human settlement in or adjacent to the Sponge Iron project. Nearest human settlement is located at Voderahalli village, 0.5 km NW of the project area. Thus there will not be any impact on the human settlement in the area. The operation of the Sponge Iron and associated activities will improve the economic development, civic amenities, and educational facilities in the project vicinity. Overall, due to employment generation and economic progress, there will be Large scale positive changes in the socio-economic condition of the people residing in the vicinity of the project site.

- **Impact on Population Growth**

Total 150nos. manpower will be employed directly during operation phase of project. Mostly local persons will be employed in the industry. Additional manpower requirement in the industry will be employed from the nearby villages. Thus, there will not be any population growth in the area due to the proposed Sponge Iron project.

- **Impact on Civic Amenities**

LLP management will take efforts as a part of CSR for improvement in civic amenities like sanitation, drinking water facilities, transport road, etc. in the nearby villages.

- **Impact on Health Care Facilities**

There are primary health care facilities in the nearby villages and hospital is available in Molakalmuru town 15km. Sponge Iron Plant management will also conduct periodic medical camps in the nearby villages as a part of CSR.

- **Impact on Economic Aspects**

During operational phase, the manpower requirement will be a total of 150 persons. Mostly local persons will be employed in the industry. The local population will be

given preference in employment. The employment potential will improve economic conditions of these families directly and provide employment to many other families indirectly who are involved in business and service oriented activities. This in-turn improves the quality of life in the region.

### **Negative impact**

- During operation phase transportation will increase due to loading/unloading of material at project site.
- Fugitive emission will increase due to operation on Sponge Iron plant.

### **5. Analysis of Alternatives (Technology & Site)**

The proposed project is an Expansion of existing Sponge Iron unit located in an industrially converted land. The Industry owns 17Acres 35Guntas of the land with required permissions and the proposed project can be conveniently undertaken on existing land located at Survey No 60,61, Voderahalli village, Rampur Post, Molakalmuru Taluk, Chitradurga District, Karnataka. Hence no alternative site is considered. The industry proposes the facility with construction activities and hence no alternative sites are considered. The proposed site has sufficient land owned by the proponent. And has good connectivity to SH-131 which is at distance of about 0.26kms (N), SH-19 is at 4.5Kms (W).It is provided with sufficient water and power supply. It has well established infrastructure, transportation and communication networks. Therefore there is no need for the consideration of an alternative site.

### **6. Environmental Monitoring Program**

Environment monitoring is the sampling and analysis tool to know the environment conditions at particular time. The record of environmental monitoring is most important as the environmental changes are slow in nature and impact appears after many years. Environmental Monitoring is the technical heart of assessment of environmental and social impacts arising due to implementation of the proposed project. An equally essential element of this process is to develop measures to eliminate, offset or reduce impacts to acceptable levels during implementation and

operation of projects. The integration of such measures into project implementation and operation is supported by clearly defining the environmental requirements within an Environmental Management Plan. Sri Hari Sponge LLP is an expansion project. It will develop adequate environmental monitoring program. Based on the predicted & assessed impacts as well as the baseline environmental status of the project area, an environmental monitoring program is suggested for implementation during various stages of the project cycle.

## **7. Additional Studies**

### **7.1 Hazard Identification**

Identification of hazards is an important step in Risk Assessment as it leads to the generation of accidental scenarios. The merits of including the hazard for further investigation are subsequently determined by its significance, normally using a cut-off or threshold quantity.

- Fire
- Explosion
- Accidental Spillage or Leak of Hazardous(Flammable, Toxic) Chemicals & Gases
- Loading/ Unloading /Packaging Operations failures
- Electrical Hazards

### **7.2 Disaster Management Plan**

The purpose of this Disaster Management Plan (DMP) is to detail organizational responsibilities, actions, reporting requirement and support resources available to ensure effective and timely management of emergencies at or affecting any of operation of proposed expansion. This will be achieved by.

- Describing procedures to deal with emergencies affecting personnel, equipment, third party contractors, local community and environment.
- Defining the role and responsibility of Incident Response Group (IRG) and others at plant.

- Describing the external resources available to the IRG for use in an emergency and how these resources will be coordinated.
- Incident Controller will be authorized to initially control and contain any and all emergency situations.
- Site Controller will be authorized to co-ordinate strategic response to all emergencies associated to the operation.
- EHS management Review Committee will be authorized to co-ordinate the overall strategic response to any emergency at plant.
- It will be clubbed with DMP of existing operation.
- Disaster Management Plan is being linked with District Disaster Management Plan.

EMP Capital Cost (INR) – 68Lakhs

EMP Recurring Cost – 10.5Lakhs

## **8. Project Benefits**

### **8.1 Improvement in Infrastructures**

This project will increase the economic activities around the area, creating avenues for direct/indirect employment during operation phase of the project. There would be a wider economic impact in terms of generating opportunities for other business like workshops, marketing, repair and maintenance tasks etc. The continuous inflow of people will require local transport system like autos, taxis etc. which would help economic boost.

### **8.2 Employment Potential**

Operation and Maintenance of plant require human resources in different categories like managers, engineers of different discipline like metallurgical, mechanical, electrical, electronics, civil, structural, chemical etc. Highly skilled, skilled and semi-skilled work force in different disciplines, commercial, accountants and financial managers, unskilled labour force, clerical, security personal, etc. Considering the location of the factory and mobility of work force, the LLP has preferred employment

of local labour. The expansion project is likely to double the requirement of employment opportunities which would provide livelihood to local persons and their families. Existing Manpower comprises of 72 Nos. employed & that of the proposed Manpower is 78 Nos. totaling to 150 Nos.

### **9. Environmental Management Plan**

An environmental management plan (EMP) has been prepared for the proposed facility, to minimize negative impacts and is formed on the basis of prevailing environmental conditions and likely impacts of this project on various environmental parameters. This plan will also facilitate monitoring of environmental parameters. Preparation of EMP is required for formulation, implementation and monitoring of environmental protection measure. EMP includes schemes for proper and scientific treatment and disposal mechanism for air, liquid and solid hazardous pollutants. Apart from this, green belt development, safety aspect of the workers, noise control, fire protection etc. are also included in it. The various components of the EMP are outlined in subsequent sections.

### **10. Conclusion**

Raw materials like iron ore, coal, dolomite is available at competitive prices in most parts of the country and hence coal based DRI (sponge iron) plants are being established in large numbers. The DRI plants produce sponge iron and use it spontaneously for steel making or convert it to Hot Briquetted Iron (HBI) for storage or sale. Pig iron and sponge iron form the feed stock for steel making. Therefore, sponge iron will have to play a key role in immediate future in the development of the steel sector and the industry has to depend a great deal on sponge iron for the supply of metal in future.

On overall assessment of the project with technical and financial aspects it is concluded that the expansion of existing sponge iron productivity is technically feasible and financially viable. In addition, the project being located away from the urban areas will avoid pollution-addition to the densely populated areas, at the same time promote the growth of the backward area. The abundance of raw material in

surrounding areas at very cheaper rate will give the firm a great financial strength. The project proponents have decided to give topmost priority for employment to local people within the plant, and outside the plant in direct and indirect employments.

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