

File No.: VIS (2023-24)-PL-687-588-909

Dated: 15.02.2024

# TECHNO-ECONOMIC VIABILITY STUDY REPORT OF

## FERRO ALLOYS MANUFACTURING UNIT

(6MVA SUBMERGED ELECTRIC ARC FURNACE, 8100 MT/ANNUM)

SITUATED AT

NEAR IIL, SIDCO PHASE-1, INDUSTRIAL GROWTH CENTRE, SAMBA, JAMMU &  
KASHMIR, 184121

OWNERS/ PROMOTERS

M/S SHREE MAA CHINTPURNI FERRO ALLOYS PVT LTD

- Corporate Valuers
- Business/ Enterprise/ Equity Valuations
- Lender's Independent Engineers (LIE)
- Techno Economic Viability Consultants (TEV)
- Agency for Specialized Account Monitoring (ASM)
- Project Techno-Financial Advisors

REPORT PREPARED FOR

1<sup>ST</sup> FLOOR, KJ 13, KAVI NAGAR, PUNJAB NATIONAL BANK, MID CORPORATE  
CENTRE, GHAZIABAD, 201002

- Chartered Engineers
- Industry/ Trade Rehabilitation Consultants

- NPA Management
- Panel Valuer & Techno Economic Consultants for PSU Banks

*Important - In case of any query/ issue or escalation you may please contact Incident Manager  
Valuers@rkassociates.org. We will appreciate your feedback in order to improve our services.*

*NOTE: As per IBA Guidelines please provide your feedback on the report within 15 days of its  
submission after which report will be considered to be correct*

CORPORATE OFFICE:

D-39, 2nd floor, Sector 2, Noida-201301

Ph - +91-0120-4110117, 4324647, +91 - 9958632707

E-mail - valuers@rkassociates.org | Website: www.rkassociates.org

## **IMPORTANT NOTICE**

**COPYRIGHT FORMAT:** This report is prepared on the copyright format of R. K. Associates Valuers & Techno Engineering Consultants (P) Ltd. (R. K. Associates) to serve our clients with the best possible information and analysis to facilitate them to take rational business decisions. Legally no one can copy or distribute this format without prior approval from R. K. Associates. It is meant only for the advisory/ reference purpose for the organization/s as mentioned on the cover page of this report. Distribution or use of this format or report or any of its content/ information/ data by any organization or individual other than R.K Associates will be seen as an unlawful act and necessary legal action can be taken against the defaulters.

This report is intended for the sole use of the intended recipient/s and contains material that is **STRICTLY CONFIDENTIAL AND PRIVATE.**

**DEFECT LIABILITY PERIOD:** In case of any query/ issue or escalation you may please contact Incident Manager at [valuers@rkassociates.org](mailto:valuers@rkassociates.org). Though adequate care has been taken while preparing this report as per its scope, but still we can't rule out typing, human errors, oversightedness of any information or any other mistakes. Therefore, the concerned organization is advised to satisfy themselves that the report is complete & satisfactory in all respect. Intimation regarding any discrepancy shall be brought into our notice immediately. If no intimation is received within 15 (Fifteen) days in writing from the date of issuance of the report, to rectify these timely, then it will be considered that the report is complete in all respect and has been accepted by the client up to their satisfaction & use and further to which R.K Associates shall not be held responsible in any manner.

**Part N: R. K. Associates Important Disclaimer and Remarks** are integral part of this report and Feasibility assessment is subject to this section. Reader of the report is advised to read all the points mentioned in these sections carefully.





**TABLE OF CONTENTS**

SECTIONS	PARTICULARS	PAGE NO.
<b>Part A</b>	Report Summary	4
<b>Part B</b>	<b>INTRODUCTION</b>	
	1. About the Report	6
	2. Executive summary	6
	3. Purpose of the Report	9
	4. Scope of the Report	9
	5. Methodology/ Model Adopted	9
	6. Data Information received from	10
	7. Documents/ Data Referred	10
<b>Part C</b>	<b>Company Profile</b>	
	1. Company Overview	11
	2. Proposed Shareholding Pattern	12
	3. Promoters/Directors Profile	12
<b>Part D</b>	<b>Proposed Unit's Infrastructure Details</b>	
	1. Proposed Plant Location	15
	2. Location Map	15
	3. Layout Plan	16
	4. Land Details	17
	5. Site pictures	18
	6. Building & Civil Works	23
	7. Plant and Machinery/ Equipment details	24
	8. Utilities	26
	9. Pollution Prevention & Control	26
<b>Part E</b>	<b>Project Technical details</b>	



	1. Manufacturing Process	28
	2. Basic Architecture: Flow Chart Of The Ferro Alloy Plant	31
	3. Technological Assessment	31
	4. Raw Material Analysis	35
	5. Manpower	36
	6. Selling, General & Distribution Plant	37
<b>Part F</b>	<b>Product Profile</b>	
	1. Product Details	38
	2. Product Pics	41
	3. Pricing Strategy	42
	4. Expected Clientele	43
<b>Part G</b>	<b>Industry Overview &amp; Analysis</b>	45
<b>Part H</b>	<b>SWOT Analysis</b>	49
<b>Part I</b>	<b>Project Cost and Means of Finance</b>	51
<b>Part J</b>	<b>Project Schedule</b>	53
<b>Part K</b>	<b>Statutory Approvals   Licences   NOC</b>	55
<b>Part L</b>	<b>Company's Financial Feasibility</b>	57
<b>Part M</b>	<b>Conclusion</b>	74
<b>Part N</b>	<b>Disclaimer   Remarks</b>	76
	<b>References</b>	80-82





**PART A**

**REPORT SUMMARY**

S. No.	PARTICULAR	DESCRIPTION
1.	Name of the Company:	M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd
2.	Registered Address:	Flat No-19, G/F, Block -D-1, Vasant Kunj, Pkt-E-2, Near Sultangarhi CNG Pump, Delhi-110070.
3.	Project Name	M/s Shree Maa Chintpurni Ferro Alloys Pvt. Ltd.
4.	Project Location:	Near IIL, SIDCO Phase-1, Industrial Growth Centre, Samba, Jammu & Kashmir, 184121
5.	Project Type:	Ferro Alloys Manufacturing Unit [8100 MT/Annum]
6.	Project Industry:	Iron & Steel Industry (Manufacturing)
7.	Product Type / Deliverables:	Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide
8.	Report Prepared for Organization:	1 <sup>ST</sup> Floor, KJ 13, Kavi Nagar, Punjab National Bank, Mid Corporate Centre, Ghaziabad, 201002.
9.	TEV Consultant Firm:	M/s. R.K Associates Valuers & Techno Engineering Consultants (P) Ltd.
10.	Report type:	Techno-Economic Viability Report
11.	Purpose of the Report:	To assess Project's Technical, Economical & Commercial Viability for the purpose of seeking external financial assistance to start a green field Project.
12.	Scope of the Report:	To assess, evaluate & comment on Technical Economical & Commercial Viability of the Project as per data information provided by the client, independent Industry research and data.



		information available on public domain.												
13.	Date of Report:	15 <sup>th</sup> February, 2024												
14.	Documents referred for the Project:	<p><b>A. PROJECT INITIATION DOCUMENTS:</b></p> <ul style="list-style-type: none"><li>a. Project Report</li><li>b. Financial Projections of the Project</li><li>c. Project proposed Schedule</li><li>d. Statutory Approval Details</li><li>e. Layout and Master Plan</li></ul> <p><b>B. PROCUREMENT DOCUMENTS:</b></p> <ul style="list-style-type: none"><li>a. List of Plant &amp; Machinery along with acquisition costs for the same</li><li>b. Major Existing Customer Line</li><li>c. List of Expected Raw material Supplier</li><li>d. Process Flow Chart</li><li>e. Sanction/proposed map of the sites</li><li>f. Lease/Sale deeds of the Land</li></ul> <p><b>C. STATUTORY APPROVALS, LICENCES &amp; NOCs</b></p> <ul style="list-style-type: none"><li>a. MSME UDYAM Registration Certificate</li><li>b. Pollution Control Certificates</li><li>c. Factory Permission Certificate</li></ul>												
15.	Means of Finance:	Equity & Debt (D/E Ratio 1.38)												
16.	Key Financial Indicators:	<table><tr><th>Key Indicators</th><th>Value</th></tr><tr><td>Average DSCR</td><td>2.02</td></tr><tr><td>Maximum DSCR</td><td>2.89</td></tr><tr><td>Average EBITDA Margin</td><td>16.51%</td></tr><tr><td>Avg. PAT Margin</td><td>6.35%</td></tr><tr><td>Promoters' Contribution</td><td>41.93%</td></tr></table>	Key Indicators	Value	Average DSCR	2.02	Maximum DSCR	2.89	Average EBITDA Margin	16.51%	Avg. PAT Margin	6.35%	Promoters' Contribution	41.93%
Key Indicators	Value													
Average DSCR	2.02													
Maximum DSCR	2.89													
Average EBITDA Margin	16.51%													
Avg. PAT Margin	6.35%													
Promoters' Contribution	41.93%													

**Note:** Above financial indicators are based on the financial projections provided by the firm and assessment and analysis of the same done by us.



**PART B**

**INTRODUCTION**

- 1. ABOUT THE REPORT:** This is a Techno Economic Viability Study Report of the proposed Ferro Alloys manufacturing unit (Capacity: 8100 MT/annum) at Near IIL, SIDCO Phase-1, Industrial Growth Centre, Samba, Jammu & Kashmir, 184121 setup by the company named M/s Shree Maa Chintpurni Ferro Alloys Private Limited.
- 2. EXECUTIVE SUMMARY:** M/S Shree Maa Chintpurni Ferro Alloys Pvt. Ltd. has proposed to set up a Greenfield project at IGC Samba, Phase-I in Jammu & Kashmir, to manufacture Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron and Calcium Carbide etc. The proposed manufacturing facility will be having a total capacity of 8100 MT/annum & proposed to be setup with total investment of INR 3,099.90 Lakhs.

As per the certificate of incorporation shared by the client/company, M/S Shree Maa Chintpurni Ferro Alloys Pvt. Ltd. was established on 10<sup>th</sup> December 2021 under the company's act, 2013 for manufacturing of Ferro Alloys.

Ferro Silicon is an essential raw material used in the production of steel and cast iron. Similarly, Silico Manganese, an alloy composed of silicon, manganese, and iron, is widely used in the steel industry for enhancing the strength and durability of steel. Both Ferro Silicon and Silico Manganese have significant applications in the construction, automotive, and infrastructure sectors.

Ferro Chrome, another crucial alloy, is primarily used in the production of stainless steel. Ferro Manganese, on the other hand, acts as a deoxidizer and alloying element in steel production, enhancing the hardness, toughness, and wear resistance of steel products. Pig Iron, an intermediate product obtained during the smelting of iron ore, serves as a key raw material for steel production. Calcium Carbide, a chemical compound, is primarily used in the production of acetylene gas, which finds applications in welding, cutting, and chemical synthesis processes.

To contribute to the growing demand of Ferro alloys in the steel industry promoters of the company led by Mr. Rama Nand Modi and Mr. Rakesh Kumar Modi who come from a business family and possess extensive experience in this line of business, has conceived this Project.



As per the details came on record during this assignment and discussion with the company proponents, both **Mr. Rama Nand Modi and Mr. Rakesh Kumar Modi**, are brothers in relation. Mr. Rakesh Kumar Modi, is the owner of a Proprietorship Firm named M/s Shree Om Gas & Chemicals and the elder brother Mr. Rama Nand Modi supports his brother in expanding the trading business. M/s Shree Om Gas & Chemicals is in trading of Calcium Carbide, Ferro Silicon and Industrial Gas from more than 30 years having turnover of approx. Rs. 96.35 Cr. In FY 2022-23.

As informed by them, through their trading business, the promoters have established a strong network of suppliers, customers, and industry contacts. For the new Project, promoters existing network in the industry can be leveraged for sourcing raw materials, securing sales contracts, and establishing strategic partnerships. Their existing relationships and reputation in the industry will facilitate smooth operations and market penetration. As per ITR filing details shared by the client/company, below table is showing the historical performance of the existing trading business owned by the promoters:

Historical Financial Position of M/s Shree Om Gas & Chemicals			
Particular (Crore)	Assessment Year 2021-22	Assessment Year 2022-23	Assessment Year 2023-24
Total Income	37.69 Cr	96.35 Cr	98.95 Cr
PAT	0.41 Cr	1.06 Cr	1.02 Cr
Total Assets	6.35 Cr	8.81 Cr	16.74

As per the historical analysis of existing trading business of the promoters/directors, it seems that they have decided to reap out the opportunity of higher demand of Ferro alloys in the market and decided to be having the presence in the industry by manufacturing Ferro Alloys at their own facility along with existing trading business, considering the rapid growth in the existing business and contribute more towards supply chain.

As per information provided by the client, the proposed project will be established with a capacity of 8100 metric tons per annum by installing the Submerged Electric Arc Furnace at the manufacturing facility.

The unit will require a connected power load of 6 MVA and approximately 15000 litres of water per day for various processes, sanitation, and drinking purposes. The necessary power supply will be obtained from the local power distribution department, while water will be sourced from the existing water supply in the area.



Proposed Unit's Installed Capacity (MT/Annum)						
Particulars	Ferro Silicon	Silicon Manganese	Ferro Chrome	Ferro Manganese	Pig Iron	Calcium Carbide
Capacity MT/Hour	0.63	0.25	0.25	0.43	0.45	0.25
Running Hrs.	12.00	12.00	12.00	12.00	12.00	12.00
Prod's per day in Pieces	7.50	3.00	3.00	5.10	5.40	3.00
No. of days/month	25.00	25.00	25.00	25.00	25.00	25.00
No. of days/in year	300.00	300.00	300.00	300.00	300.00	300.00
<b>Total Production Capacity</b>	2250.00	900.00	900.00	1530.00	1620.00	900.00
<b>Total Production Capacity</b>			<b>8100 Metric Ton per Annum</b>			

The proposed project cost is estimated at cost Rs. 3099.90 Lacs, which is proposed to be financed through a debt-equity ratio of 1.38. The project cost will be financed through a bank term loan of Rs. 1800.00 Lacs for Plant & Machinery and promoter contribution of Rs. 1299.90 Lacs. Working capital requirements will be met through a WC loan of Rs. 350.00 Lacs.

PROJECT COST	
PARTICULARS	TOTAL (INR Lakhs)
Land	77.00
Building	300.00
Plant And Machinery	2,158.11
Misc. Fixed Assets	274.68
Pre-Operative Expenses	57.00
IDC	113.75
Working Capital Margin	119.36
<b>TOTAL</b>	<b>INR 3,099.90 Lakhs</b>

As per lease deed shared by the client/company, Company has procured a leased land spanning 8 Kanal for the proposed manufacturing facility at IGC SAMBA, PHASE-I, Jammu & Kashmir. Land development work has been completed by the company as also found during the site inspection by our team. As per data/information provided to us, company has obtained some Statutory Approvals/NOC's such as PUC, DIC, Sanctioned Map approval, SIDCO etc. from the respective authorities (Refer the section Statutory Approval Section in the later part of the report).

For the purpose of the Project implementation company is in discussion with ADS associates for the implementation of submerged Arc Furnace. Mr. Arun Kumar and Associates has



prepared the design plan of the unit. Company is also proposing to engage M/s Virendera Construction Co., Samba for civil construction. For Plant & Machinery, company has taken quotations from various vendors & suppliers, however these are not yet finalised. No finalised work orders have been provided to us by the client.

Currently, the manufacturing facility is under construction. Pre-Engineering Building (PEB)/ MS structure's construction work is in progress at the site as per the approved/sanctioned map along with the construction of proposed 6 MVA submerged electric arc furnace (*Kindly refer the site pictures captured during the survey attached in the later section of the report*). The company has planned to achieve the C.O.D by 31<sup>st</sup> March 2025.

Further, Punjab National Bank, MCC Ghaziabad has appointed R.K. associates to assess the Techno-Economic Viability of the proposed Ferro Alloy manufacturing facility at IGC SAMBA, PHASE-I, Jammu & Kashmir.

- 3. PURPOSE OF THE REPORT:** To assess Project's Technical and Financial Feasibility for lender's requirement.
- 4. SCOPE OF THE REPORT:** To only assess, evaluate & comment on Technical & Financial Feasibility of the restructuring proposal of the company as per the information provided by the company.

**NOTES:**

- *Scrutiny about the company, its background, reputation, credibility, credit worthiness is out-of-scope of this report.*
- *This report is only an opinion in respect to Technical and Financial Feasibility of the project as per the future Projections provided by the firm and independent analysis done by us and doesn't contains any recommendations including taking decision on the loan exposure.*
- *Any verification of the documents/ information from originals/ source is out-of-scope of this report.*
- *Any review of the existing business of the promoters is out of scope of this report.*
- *Detailed cost estimation or detailed cost vetting is out of scope of the project.*

**5. METHODOLOGY/ MODEL ADOPTED:**

- a. Data/ Information collection.
- b. Review of Data/ Information collected related to TEV study.





- c. Independent review & assessment of technology used and financial projections provided by the company.
- d. Projections of Revenue, P&L, Balance Sheet, Working Capital Schedule, Depreciation Schedule, Loan Schedule as per the inputs given by the company and assessed by us
- e. Calculation of key financial indicators and ratio analysis including DSCR.
- f. Report compilation and Final conclusion.

**6. DATA/ INFORMATION RECEIVED FROM:** Data/ Information received from:

Person from Whom Data Obtained	
Particulars	Details
Name	Mr. Keshav Modi
Company	M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd
Email Address	Keshav.modi@yahoo.com
Contact No.	9811860046

**7. DOCUMENTS / DATA REFERRED:**

- a. Detailed Project Report
- b. Financial Projections for next 7 Years.
- c. Brief history and description of the company.
- d. Production flow chart, Product profile, Pricing Strategy etc.
- e. List of Raw Material Suppliers.
- f. Selling, Marketing & Distribution Plan of the Company.
- g. List of expected customers of the company.
- h. List of Plant and Machinery along with their acquisition cost.
- i. Historical Financials of the existing trading firm.
- j. Layout Plan.
- k. Certificates of Statutory approvals/NOC's.
- l. Survey Report conducted at the site.



**PART C**

**COMPANY PROFILE**

**1. COMPANY OVERVIEW:**

As per certificate of incorporation shared by the client/company, M/s. Shree Maa Chintpurni Ferro Alloys Pvt Ltd is an unlisted public company incorporated on 10 December, 2021. It is classified as a public limited company and is located in Samba, Jammu and Kashmir. As per MOA, the company will carry on in India and elsewhere the trade or business or manufacturing, buying, selling, importing, exporting, purchasing otherwise dealing in Ferro Silicon, Ferro alloys, Ferro-Chrome, Ferro manganese and other ferrous substances and metals of every description and grades and other alloys.

The Corporate Identification Number (CIN) of the company is U27101DL2021PTC391084. The registered office is Flat No-19, G/F, Block -D-1, Vasant Kunj, Pkt-E-2, Near Sultangarhi CNG Pump, Delhi-110070. INDIA. The company has Two directors names Mr. Rama Nand Modi (DIN: 09431445) and Mr. Rakesh Kumar Modi (DIN: 09431446). The company is registered as MSME shown below:

UDYAM REGISTRATION CERTIFICATE																					
UDYAM REGISTRATION NUMBER	UDYAM-DL-10-0045806																				
NAME OF ENTERPRISE	M/S SHREE MAA CHINTPURNI FERRO ALLOYS PRIVATE LIMITED																				
TYPE OF ENTERPRISE *	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Classification Year</th> <th>Enterprise Type</th> <th>Classification Date</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2023-24</td> <td>Micro</td> <td>16/05/2023</td> </tr> </tbody> </table>	S.No.	Classification Year	Enterprise Type	Classification Date	1	2023-24	Micro	16/05/2023												
S.No.	Classification Year	Enterprise Type	Classification Date																		
1	2023-24	Micro	16/05/2023																		
MAJOR ACTIVITY	MANUFACTURING																				
SOCIAL CATEGORY OF ENTREPRENEUR	GENERAL																				
NAME OF UNIT(S)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Name of Unit(s)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>M/S SHREE MAA CHINTPURNI FERRO ALLOYS PRIVATE LIMITED</td> </tr> </tbody> </table>	S.No.	Name of Unit(s)	1	M/S SHREE MAA CHINTPURNI FERRO ALLOYS PRIVATE LIMITED																
S.No.	Name of Unit(s)																				
1	M/S SHREE MAA CHINTPURNI FERRO ALLOYS PRIVATE LIMITED																				
OFFICIAL ADDRESS OF ENTERPRISE	<table border="1"> <thead> <tr> <th>Flat/Door/Block No.</th> <th>FLAT NO, 198</th> <th>Name of Premises/ Building</th> <th>PKT E-2</th> </tr> </thead> <tbody> <tr> <td>Village/Town</td> <td>VASANT KUNJ</td> <td>Block</td> <td>G/F BLOCK D-1</td> </tr> <tr> <td>Road/Street/Lane</td> <td>NEAR SULTAN GARHI CNG PUMP</td> <td>City</td> <td>DELHI</td> </tr> <tr> <td>State</td> <td>DELHI</td> <td>District</td> <td>SOUTH WEST, Pin 110070</td> </tr> <tr> <td>Mobile</td> <td>9311697227</td> <td>Email:</td> <td>shreemaachintpurni@rediffmail.com</td> </tr> </tbody> </table>	Flat/Door/Block No.	FLAT NO, 198	Name of Premises/ Building	PKT E-2	Village/Town	VASANT KUNJ	Block	G/F BLOCK D-1	Road/Street/Lane	NEAR SULTAN GARHI CNG PUMP	City	DELHI	State	DELHI	District	SOUTH WEST, Pin 110070	Mobile	9311697227	Email:	shreemaachintpurni@rediffmail.com
Flat/Door/Block No.	FLAT NO, 198	Name of Premises/ Building	PKT E-2																		
Village/Town	VASANT KUNJ	Block	G/F BLOCK D-1																		
Road/Street/Lane	NEAR SULTAN GARHI CNG PUMP	City	DELHI																		
State	DELHI	District	SOUTH WEST, Pin 110070																		
Mobile	9311697227	Email:	shreemaachintpurni@rediffmail.com																		
DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	10/12/2021																				
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	01/05/2023																				
NATIONAL INDUSTRY CLASSIFICATION CODE(S)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>NIC 2 Digit</th> <th>NIC 4 Digit</th> <th>NIC 5 Digit</th> <th>Activity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>24 - Manufacture of basic metals</td> <td>2410 - Manufacture of basic iron and steel</td> <td>24104 - Manufacture of ferro-alloys</td> <td>Manufacturing</td> </tr> </tbody> </table>	S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity	1	24 - Manufacture of basic metals	2410 - Manufacture of basic iron and steel	24104 - Manufacture of ferro-alloys	Manufacturing										
S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity																	
1	24 - Manufacture of basic metals	2410 - Manufacture of basic iron and steel	24104 - Manufacture of ferro-alloys	Manufacturing																	
DATE OF UDYAM REGISTRATION	16/05/2023																				



In this company, promoters has proposed Ferro Alloys manufacturing unit to manufacture Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron and Calcium Carbide etc.

2. **SHAREHOLDING DETAILS:** As per Memorandum of Association shared by the client/company, Both the Promoters/Directors is having 50-50% shareholding in the company as listed in the table below:

Shareholding Details		
Particular	Amount (INR)	
Authorized Share Capital	INR 50, 00,000 (5, 00,000 Equity share 10 Rs. each)	
Paid Up Capital	INR 1,00,000	
Name of the Shareholder	No. of Equity Shares	% Holding
Mr. Ramanand Modi	5000	50%
Mr. Rakesh Kumar Modi	5000	50%
<b>Total</b>	<b>10,000</b>	<b>100</b>

Source: Data/Information provided by the Company

3. **KEY PROMOTERS/DIRECTORS PROFILE:**

The project is backed by experienced promoters, **Mr. Rama Nand Modi and Mr. Rakesh Kumar Modi**, who are actively engaged in the Ferro alloys industry from last few decades. Their expertise and extensive knowledge in the field have been instrumental in establishing a reputable business in Ghaziabad, Uttar Pradesh.

Their existing concern is a proprietorship concern in the name and style of **M/s Shree Om Gas & Chemicals** incepted in 1997. Mr. Rakesh Kumar Modi operates from its registered office at L 594 GT Road near Pawan Cinema in Ghaziabad. The company holds a valid GST number, with the GST registration details being **09ABWPK2162L1Z1**.

As informed to us, promoters are already actively involved in the business of importing Ferro Alloys and Calcium Carbide from various countries such as Bhutan, China, Malaysia, Turkey, and domestic sourcing as well. They have established a strong presence in the market and caters to customers across different parts of India.

As per data/information shared by the client/company, some of the major existing customers in this domain are as follows:



Existing Customer Details		
S. No.	Buyer's Name	Address
1	Shree Jagdish Impex Pvt Ltd	Shed No.53 Akshar Industrial Park Near Ramol, Hatijan Circle G.I.D.C. Phase - 4, Vatva Ahmedabad
2	Shri Narsingh Micro Alloys Private Limited	Shed - 84, 583, 32, 91 Axar Indl. Estate B/H Amba, Estate Vinzol Patiya Vatva G.I.D.C, Ahmedabad
3	Jai Balaji Industries Ltd (Unit - iii)	Vill.Banskopa P.O. Rajbandh, Durgapur
4	Jamipol Limited	Namdih Road, Burmamines, Jamshedpur
5	Sadashiv Alloys	Vill. Sounti Opp. Desh Bhagat Collage, Amloh Road Mandi Gobindgarh
6	Indegenous Greenworld Private Limited	G.S. Road, 15th Vile, Byrnihat, Barni, Kamrup Metropolitan
7	Hariaksh Industries Pvt Ltd	Siddha Weston Unit No.204, 2nd Floor 9 Weston Street, Kolkata
8	Brg Iron & Steel Co Pvt Ltd	Works :- Nh 42 Kurunti Motanga, Dhenkanal Odisha
9	Shanti Satya Alloys	Near Prince Dhaba, Ring Road -2, Gogaon, Raipur
10	Namoh Alloys	Godown No. H-5 Munisuvrat Compound Phase - 1, Vill. Rehna Bhiwandi, Distt. Thane
11	Bindal Stainless Private Limited	Dhaura Kuan Paonta Sahib Village Rampur Mazri, Sirmaur

As informed to us, promoters through their trading business, have established a strong network of suppliers, customers, and industry contacts. This network can be leveraged for sourcing raw materials, securing sales contracts, and establishing strategic partnerships.

Deep understanding of the Ferro alloys market, including demand and supply dynamics, customer requirements, and pricing trends and extensive experience in trading Ferro Silicon has given them insights into the industry's nuances and challenges.

(A) Directors/Promoters Details					
Name	DIN	Age	Address	Designation	Contact Details
Mr. Rama Nand Modi	09431445	64 Years	R/O KJ-117, Kavi Nagar, Ghaziabad-201001	Director	9311697227, <a href="mailto:modiramanand6@gmail.com">modiramanand6@gmail.com</a>
Mr. Rakesh Kumar Modi	09431446	62 Years	R/O B-61, Patel Nagarii, Ghaziabad-	Director	9311172353,



			201001		<a href="mailto:shreeomgasandchemicals@rediffmail.com">shreeomgasandchemicals@rediffmail.com</a>
<b>(B) Education &amp; Experience</b>					
<b>Mr. Rama Nand Modi</b>	<ul style="list-style-type: none"> <li>Appointed as Director on 10<sup>th</sup> Dec 2021.</li> <li>As per data/information shared by the client, Mr. Rama Nand Modi is a post Graduate and having an industrial/professional experience of 35 Years. He has been actively engaged in the Ferro alloys industry for over two decades.</li> <li>He has rich experience in the business of importing Ferro Alloys and Calcium Carbide from various countries such as Bhutan, China, Malaysia, Turkey, and domestic sourcing as well.</li> </ul>				
<b>Mr. Rakesh Kumar Modi</b>	<ul style="list-style-type: none"> <li>Appointed as Director on 10<sup>th</sup> Dec 2021.</li> <li>As per data/information shared by the client, Mr. Rakesh Kumar Modi is a post Graduate and having an industrial/professional experience of 30 Years. He has been actively engaged in the Ferro alloys industry for over two decades.</li> <li>He is the owner of the firm Shree Om Gas &amp; Chemicals (Proprietorship Firm) and doing trade business of Calcium Carbide, Ferro Silicon and Industrial Gas for a 35 year old in this firm with his elder brother Mr. Rama Nand Modi.</li> </ul>				

Source: Data/ Information provided by the Company



**PART D**

**PLANT INFRASTRUCTURE DETAILS**

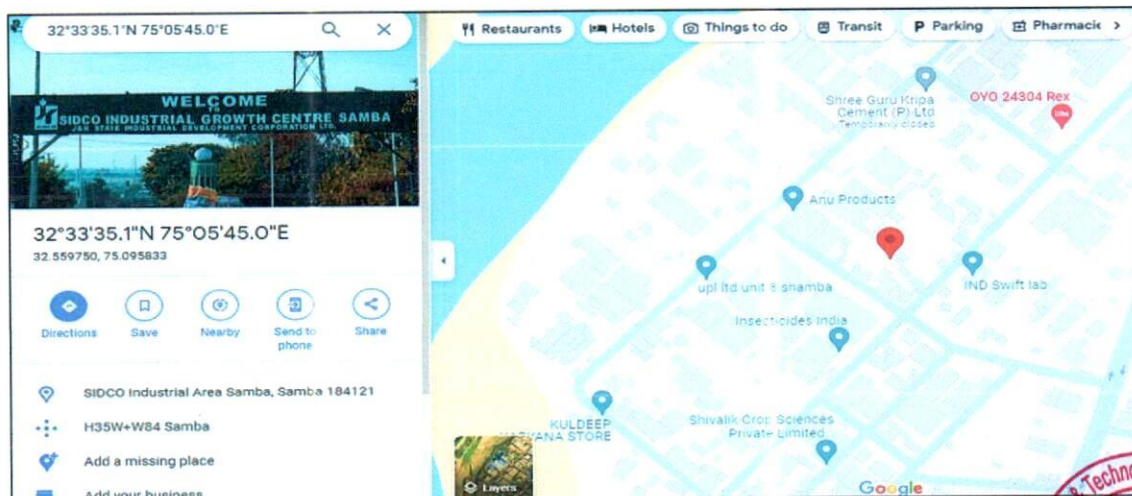
1. **PLANT LOCATION:** The proposed manufacturing facility is located in SIDCO Industrial Area Centre, Samba, Jammu & Kashmir, Pahse-1, 184121, which is spread over an area of 8 Kanal (43,203 Sq. Ft.) as per the lease deed provided to us by the company. Industrial Growth Centre (IGC), Samba, Phase-I is a strategic location, since it is nearby to target markets in Punjab, Haryana, and other areas. Details of adjoining properties and Connectivity, found during the site visit described in the below tables:

Location	Adjoining Property
East	Connecting Road ~40 ft. wide
West	Anu Products Ltd. & Other plants
North	Aegis Infrastructure
South	Connecting Road ~40 ft. wide

Connectivity Details of the Proposed Location	
Connectivity	Details
Rail	Samba Railway Station – ~6 km away
Airport	Jammu Airport - ~35 km away
Road	NE-5 & NE-5A Delhi Jammu Expressway (Under Construction)

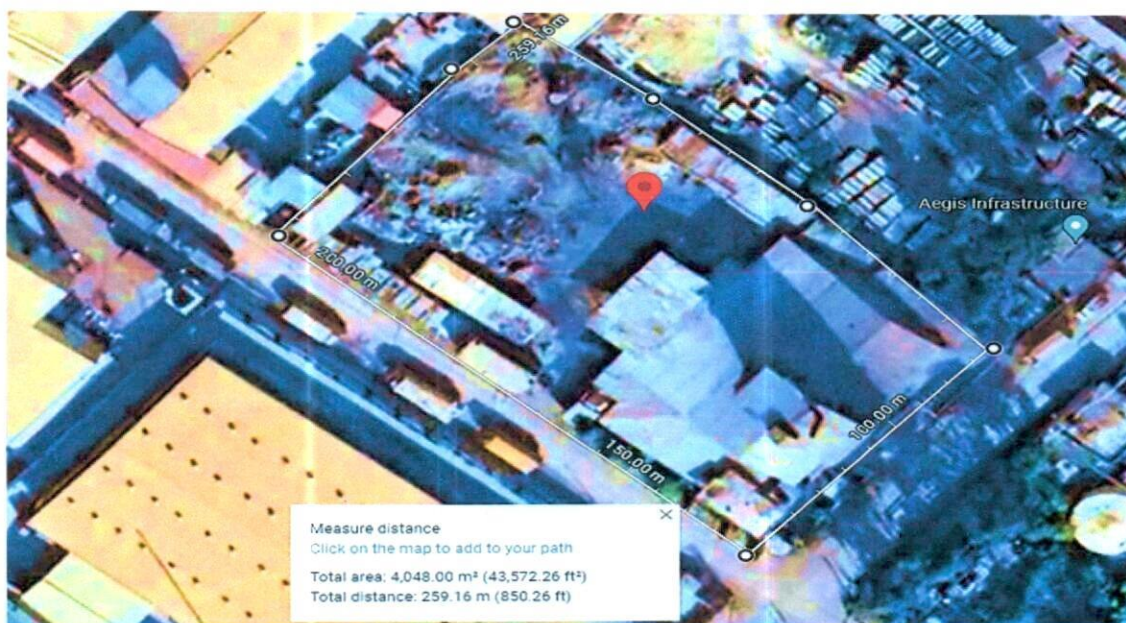
2. **LOCATION MAP:**

- a. **Google Map Location:** Project location is 32°33'35.1" North and 75°05'45.0" East in SIDCO Industrial Area Centre, Samba, Jammu & Kashmir, Pahse-1 and the location as per the Google map has been attached below:

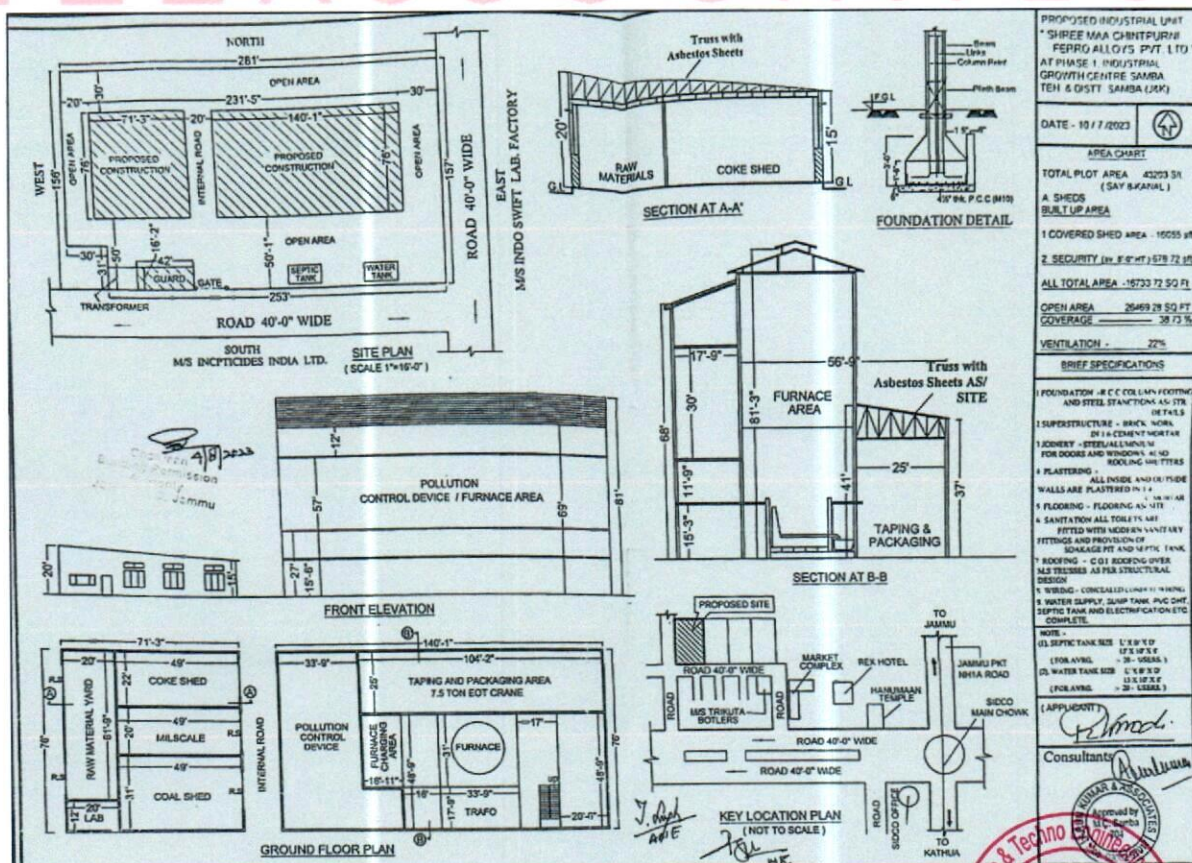




- b. **Google Layout Plan:** Demarcation of the land with measurement on the Google map is as shown in the below picture:



3. **LAYOUT PLAN:** As per data/information shared by the client/Company, the approved layout plan for the proposed site has been attached below:





#### 4. LAND DETAILS:

As per lease deed shared by the client/company and verified during Survey, Company has procured a leased land spanning 8 Kanal (43,203 Sq. Ft.) for the proposed manufacturing facility at SIDCO Industrial Area Centre IGC Samba, Phase-I, Jammu & Kashmir, 184121. The land is registered in the name of M/s. Shree Maa Chintpurni Ferro Alloys Private Limited.

The Lease deed was executed on 15<sup>th</sup> April 2023 by and between, The J & K State Industrial Development Corporation Limited, Samba through its manager estates SIDCO, IGC, Samba and M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd through its director Mr. Rakesh Kumar Modi and Mr. Ramanand Modi Ghaziabad, UP for setting up an Industrial unit for manufacturing of Ferro Alloys at SIDCO, IGC, Samba.

Whereas, earlier M/s Jai Durga Cement Pvt Ltd was allotted/ leased out 8 Kanal of land at at SIDCO, IGC, Samba Phase 1. Since they were no more interested to run the unit due to unavoidable circumstances, surrendered the lease hold right in favour of M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd on 1<sup>st</sup> April 2023 for a period of initial 40 years, who agreed and consented to take over the leased premises subject to the terms and conditions as shall be laid down by the lessor and according consented vide its order no. SIDCO/ROJ/23/95 dated 14<sup>th</sup> March 2023.

The lease period can be further renewed for a period of 33 years at the option of lessor provided that maximum period of lease shall in no circumstance exceed 73 years on mutually agreed term & conditions. Lease rentals shall be payable by the lessee from the lease execution date.

Land Details As per Sale/Lease Deed		
S. No.	Particular	Details
1.	Property ID	259744
2.	Type of Land	Agriculture – Non-Irrigated Land
3.	Village Name	Bela Samba, Samba, Samba
4.	Property Attributes	Plot/Flat Number: Phase-1 SIDCO IGC Samba
5.	Property Description	Land Area: 8 KANAL
6.	Document Execution Date	15 <sup>th</sup> April 2023
7.	Lessor	The J & K State Industrial Development Corporation, Samba through its manager estates by authorised representative Sh. Jagjeet Singh (Asstt. Manager)



Land Details As per Sale/Lease Deed		
S. No.	Particular	Details
8.	Lessee	M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd through its director Mr. Rakesh Kumar Modi and Mr. Ramanand Modi Ghaziabad, UP.
9.	Property Rates	INR 13,86,000 /- Kanal
10.	Market Value	INR 1,10,88,000 /-
11.	Lease/Rent	Considerable Amount: INR 11,32,800

As per the lease agreement, the company shall pay @20% of the current land premium in advance i.e. INR 60,000 /- per kanal as transfer fees along with applicable GST (Not-Refundable) and also pay 3 year of ground rent in advance with GST (Adjustable) & 3 years of maintenance Charges in advance with GST (Adjustable) to the lessor.

The rent and maintenance charge will always be paid by the lessee in future in the first week of every commencing/financial year in advance. In case of failure in the rent and maintenance payment, company will be liable to pay a 20% per annum interest rate on the defaulted sum from the date of default.

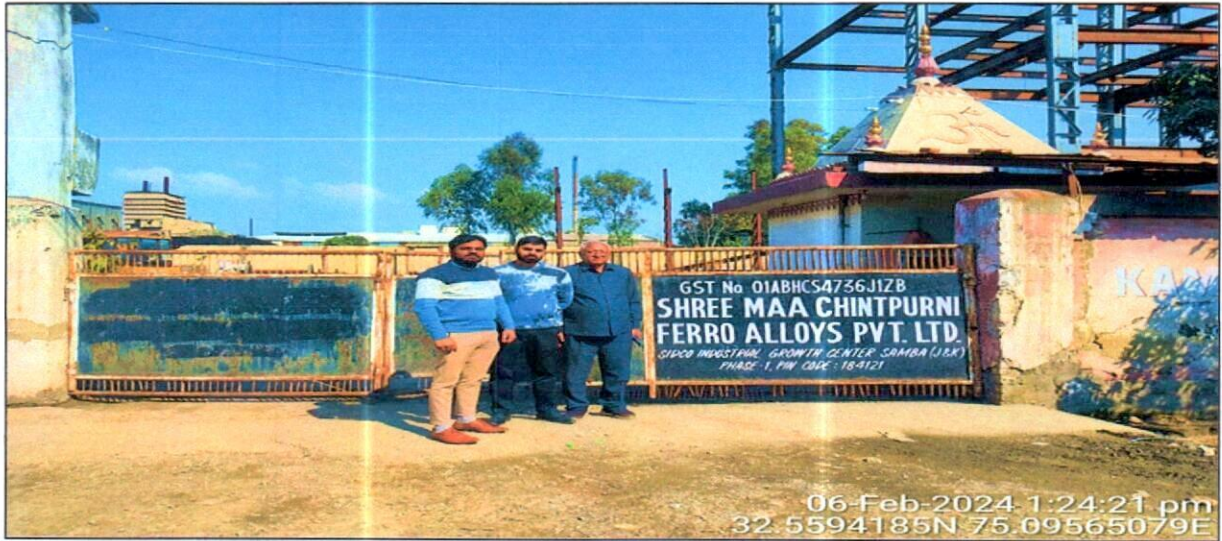
Thus the company has paid INR 11,32,800/- as 20% of current premium including GST (Non Refundable) and 3 year's advance lease rental including GST & 3 year's advance maintenance charges including GST (adjustable). The lease rentals will be escalated by 5% after every 5 years.

During the site visit the land area has been checked and cross-verified through the lease deed and we found that the land is an industrial land. Land development work has been completed and the subject land is demarcated with boundary wall till the survey date. Submerged arc furnace and its structure work was in progress on site.

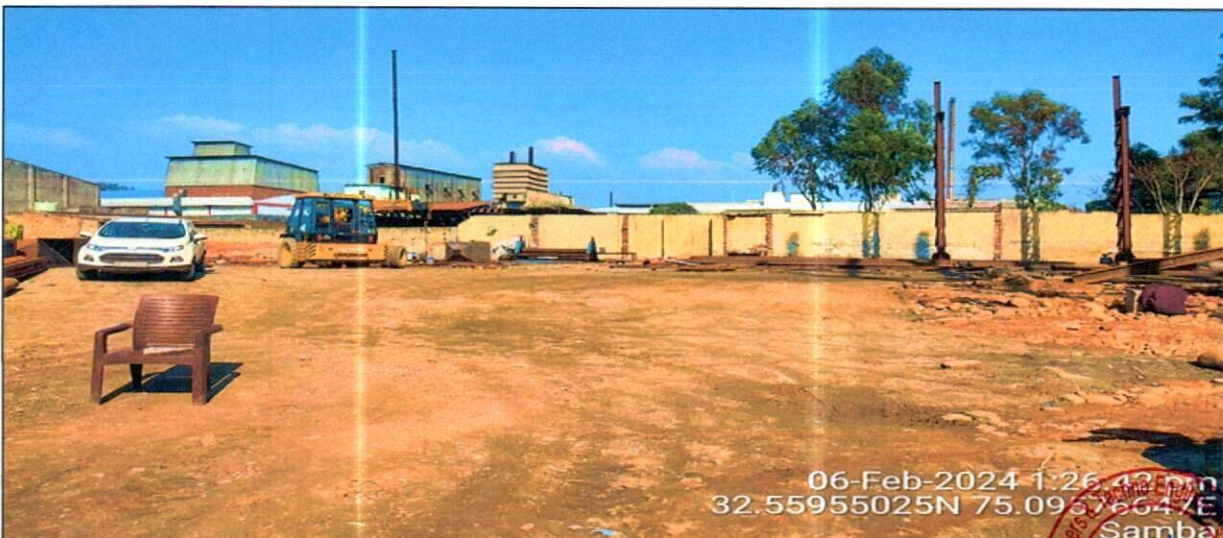
#### 5. PHTOGRAPHS OF THE PROJECT:





















## 6. BUILDING & CIVIL WORKS:

As per approved site map by authority (M.C. Samba), the total covered area of the plant with its civil structures admeasures to about ~16,733.72 Sq. Ft. (Covered Shed Area 16,055 Sq. Ft + Security 678.72 Sq. Ft.).

The master plan for the proposed use of site, has been prepared in accordance with the requirements of the project with due considerations of the requirements of machines and equipment's, the facilities and user amenities required. Open area would be ~26,469.28 Sq. Ft. As per quotations provided by the client, the total cost of Building & Civil Works is shown as INR 193.91 Lakhs excluding 18% GST, including Coal & Cock Shed, Millscale, Boundary wall, Road Work, Other civil structure work for only labour cost. Material cost estimation was not given to us. Therefore we have made our independent assessment for working out the estimated civil construction cost which ranges from Rs.2.8 crores to Rs.3.2 crores, as worked out below:

Details of Building & Civil Works along with Estimated Cost			
Building	Area	Per Unit Cost	Total Cost Lakhs
Furnace Area	13000 Sq. Ft.	1400	182.00
Pump House	900 Sq. Ft.	1200	10.80
Raw Material Yard	2700 Sq. Ft.	750	20.25
Front Office	430 Sq. Ft.	1200	5.16
Front Store	270 Sq. Ft.	1100	2.97
Coal Shed, Coke Shed, Millscale	3724 Sq. Ft.	750	27.93
Boundary Wall		200000	2.00
Road Work	2323 Sq. Mtr.	1503	34.91
Other civil structure work	lumpsum	Lumpsum	10.00
<b>Total</b>			<b>296.02</b>
<b>Add: Architect Fees</b>	@ 1%		<b>2.96</b>
<b>Grand Total :-</b>			<b>~INR 300.00 Lakhs</b>
1. Above cost is a general estimate without BOQ, specifications. 2. As per specifications, material brand, cost may change. 3. In Boundary wall, cost of only restoration and maintenance is considered as boundary wall already exists on site.			

As per site visit as on 6<sup>th</sup> Feb 2024, currently, the manufacturing facility is found under construction. MS structure's construction work is in the progress at the site as per the approved/sanctioned map along with the construction of proposed submerged electric arc furnace. Presently one old office, temple and boundary wall exists on site. However as per information given by the promoters, existing office will be demolished.



- 7. PLANT AND MACHINERY DETAILS:** As per the details provided to us, for the purpose of Project implementation, company has decided to appoint Kerala based Ferro Alloys & mini steel plants technology supplier ADS Associates as a technical consultant for fabrication, erection and commissioning of 6MVA Submerged Electric Arc Furnace at the site. However word order or agreement with ADS Associates was not provided to us. The details of Plant and Machinery along with their costs etc. are given in below table. Cost of Plant & Machinery has been worked out on the basis of quotations received from respective machine suppliers.

Details & Cost Of Plant & Machinery		
S. No	Particulars	Amount (INR Lakhs)
1	<b>FURNACE BUILDING</b>	
	a) Steel - ISMB, ISMC, ISMA & Plates	210.00
	b) G.C sheet	20.00
2	<b>Refractories</b>	
	High Alumina Bricks - STD	8.12
	High Alumina Bricks - E/A	9.82
	IS8 Bricks	7.85
	High Alumina Mortar	0.08
	IS8 Mortar	0.20
	a) Silicon carbide bricks	6.00
	b) Tamping paste	72.00
	c) Carbon paste	17.00
	d) Air blower	1.05
3	<b>PUMP HOUSE</b>	
	a) Cooling Tower	5.30
	b) Softener plant	14.05
	c) Bore well	2.00
4	<b>ELECTRICAL</b>	
	a) Furnace transformer - 6500 KVA, 11000/60-100-140	151.00
	b) Furnace control panels	27.20
	c) Insulation items - Mica tubes, washer, sheets, Syndanio, FRP bushes	8.13
	d) VCB Breaker - 4 No	25.60
5	e) Auxiliary transformer - 1500 KVA, 11KV/440V	18.59
	g) Transformer	115.00
	<b>66/11 KV SINGLE BAY SWITCH YARD including Step down transformer</b>	154.00
	f) LA, AB switches, disc & pin insulator & fittings	5.27
	g) Capacitor bank	28.02
	h) Battery Charger	2.10





	i) XLP cable 11 KV	5.00
	j) LT cable (all cables)	8.00
6	<b>HYDRAULIC POWER PACK</b> (Power pack, cylinders, hose pipes etc.)	27.03
	<b>COPPER ITEMS</b>	
7	a) Copper pipe	94.08
	b) Flexible cable	39.27
	c) Contact pad	42.84
	f) Flexible plate	2.31
8	<b>CONSUMABLES - welding rods, Oxygen, LPG &amp; etc.</b>	17.52
9	<b>MONORAIL - 3 Nos</b>	12.00
10	<b>OVER HEAD CRANE - 7.5 ton</b>	26.80
11	<b>COMPRESSOR</b>	6.48
12	<b>GENERATOR - 125 KVA</b>	12.50
13	<b>CONSULTANCY</b>	11.00
14	<b>FABRICATION &amp; ERECTION(Furnace)</b>	70.00
15	<b>MISLENIUS - Cranes, Hydra, JCB &amp; etc.</b>	55.00
	<b>CIVIL WORK</b>	
16	a) All structure foundation	
	b) Furnace shell foundation	
	c) Ground & first floor concreting	
	d) Pump room & water tank	
	<b>Total</b>	45.00
19	<b>STAINLESS STEEL - Flanges, plates&amp; Strips</b>	6.70
20	<b>PRODUCTION EQUIPMENT - Stocker Car (Fork lift), lancing pipes, MS rods,</b>	13.90
21	<b>TIPPER / DUMPER/TRUCK</b>	163.63
22	<b>TRACTOR (1 no)</b>	12.57
23	<b>JCB (4X)</b>	27.94
24	<b>Machinery Item</b>	25.00
	<b>GRAND TOTAL (RS IN LAKH)</b>	1,632.95
	<b>Add : 12% Loading, Unloading , Erection etc.</b>	195.95
	<b>Add : GST @ 18%</b>	329.20
	<b>Grand Total</b>	<b>INR 2,158.11 Lakhs</b>

As per our tertiary research and information given by various suppliers the cost of major machinery is found to be in range with the market trends as per limited technical details available at this point of time. However, the cost of such highly technical Plant & Machinery can't be exact and may vary because of brand name, technical specification, capacity, passage





of time and other factors. During the site visit, we found that the construction of only one submerged electric arc Furnace has started.

## 8. UTILITIES:

- a. **ELECTRICITY:** The electricity requirement for the plant will depends according to requirement. The electricity consumption for 8100 MTPA Ferro Alloy plant mainly ranges between 5500 KVA to 6000 KVA. Out of 6,000 KVA approx. 5,400 KVA i.e. 90% will be plant load factor and ~10% will be used for auxiliary consumption.

As per power load sanction approval shared by the client, a 6000 KVA power load connection has been sanctioned in favour of M/s MCFAPL by Jammu Power distribution corporation Ltd. The applied load shall be accommodated at 66KV level through 66KV IGC-I Samba line emanating from 2X50 MVA, 132/66 KV Grid Station Samba-I, subject to creation of client's new dedicated 66/11/0.4KV, 8MVA sub station and creation of 66kv tap line along with HT/LT network.

- b. **WATER:** Water is required at different stages of production process. The water requirement is fulfilled by the Municipal water supply and submersible available within the plant premises. As per informed by the client, Water is required for manufacturing process, washing, drinking and sanitation purposes. 15000 Litre of water daily will be sufficient for the purpose of the project.

- c. **TRANSPORTATION:** The unit is to be set up in the area just 10-15 Km from National Highway which is well connected by metaled road as such no transport problems are envisaged.

## 9. ENVIRONMENTAL POLLUTION PREVENTION AND CONTROL:

J & K Pollution control committee has provided Consent to Establish (Fresh) under Section 25/26 of the Water(Prevention & Control Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended is granted in favour of M/s Shree Maa Chintpurni Ferro Alloys Private Limited Phase I, IGC SAMBA, Samba, 184121 Samba South, Samba (registered with DIC vide registration No: 01ABHCS4736JIZB date: 01105/2023) for a period July 2024 for ORANGE category of unit as per revised classification of industrial sector to manufacture 4500 Metric Tonnes/Year Of Ferro Silicon & Calcium Carbide. Any change / enhancement in production capacity, process, raw materials





etc. shall have to be intimated to the Committee and the unit holder has to apply afresh for the same

#### COMPLIANCE UNDER WATER ACT:

- a) **Standards of discharge for Sewage disposal:** Sewage Treatment - The unit holder has to install and maintain continuous operation of a comprehensive treatment system as is warranted with reference to effluent quality and operate and maintain the same continuously so as to achieve the quality to treated effluent to the following standards before disposal:

Parameters	Range	Cone. in mg/l except for pH
PH	between	6 to 9
Suspended Solids	Not to exceed	100
BOD (3 days at 27 degree Celsius)	not to exceed	30

- b) All the Waste water/Trade effluent shall be treated as per norms to meet the environment standards of EP Act 1986.

- c) **Water consumption:** The daily quantity of water consumption shall not exceed 02 KLD.

As per data/information provided by the client, promoters of the proposed project has undergone a comprehensive environmental impact assessment to identify potential environmental risks and develop appropriate mitigation strategies.





**PART E**

**PLANT TECHNICAL DETAILS**

**1. MANUFACTURING PROCESS:**

The company has proposed to manufacture 5 types of Ferro Alloys viz. Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide. The major stages involved in the production of Ferro Alloys are as below:

**A. FERRO SILICON:** The manufacturing process of Ferro Silicon involves the following steps:

- **RAW MATERIAL PREPARATION:** – This step includes the testing of the Raw material for determining the quality of the material to find its composition in order to find out, if it is matching the defined standards. The primary raw materials for Ferro Silicon production are silica (SiO<sub>2</sub>) and iron ore. These materials are carefully selected and prepared for the smelting process.
- **SMELTING** – The prepared silica and iron ore are mixed together in precise proportions and charged into a submerged arc furnace. The furnace operates at high temperatures, typically around 1800-2000°C. An electric current is passed through the electrodes to generate heat, melting the materials.
- **ALLOY FORMATION:** In the smelting process, the iron in the iron ore combines with the silicon from the silica to form Ferro Silicon alloy. The silicon content in Ferro Silicon can vary, typically ranging from 15% to 90%.
- **COOLING AND CRUSHING:** Once the alloy is formed, it is poured into moulds or casted into various shapes. The resulting solid Ferro Silicon is then cooled and crushed into different size fractions, depending on the specific requirements of the customers.

**B. SILICO MANGANESE:** The manufacturing process Silico Manganese involves the following steps:

- **RAW MATERIAL PREPARATION:** The main raw materials for Silico Manganese production are manganese ore, silica, and high-carbon ferromanganese. These materials are carefully selected and prepared for the smelting process.





- **SMELTING:** The prepared manganese ore, silica, and high-carbon ferromanganese are mixed together in precise proportions and charged into a submerged arc furnace. The furnace operates at high temperatures, typically around 1600-1650°C. An electric current is passed through the electrodes to generate heat, melting the materials.
  - **ALLOY FORMATION:** In the smelting process, the manganese in the manganese ore combines with the silicon from the silica to form Silico Manganese alloy. The silicon content in Silico Manganese can vary, typically ranging from 10% to 30%.
  - **COOLING AND CRUSHING:** Once the alloy is formed, it is poured into moulds or casted into various shapes. The resulting solid Silico Manganese is then cooled and crushed into different size fractions, depending on the specific requirements of the customers.
- C. FERRO CHROME:** The manufacturing process of Ferro Chrome involves the following steps:
- **RAW MATERIAL PREPARATION:** The main raw materials for Ferro Chrome production are chrome ore, silica, and carbonaceous reducing agents such as coal or coke. These materials are carefully selected and prepared for the smelting process.
  - **SMELTING:** The prepared chrome ore, silica, and carbonaceous reducing agents are mixed together in precise proportions and charged into a submerged arc furnace. The furnace operates at high temperatures, typically around 1700-1900°C. An electric current is passed through the electrodes to generate heat, melting the materials.
  - **ALLOY FORMATION:** In the smelting process, the chrome in the chrome ore combines with the silicon from the silica and carbon from the reducing agents to form Ferro Chrome alloy. The chromium content in Ferro Chrome can vary, typically ranging from 50% to 70%.
  - **COOLING AND CRUSHING:** Once the alloy is formed, it is poured into moulds or casted into various shapes. The resulting solid Ferro Chrome is then cooled and crushed into different size fractions, depending on the specific requirements of the customers.
- D. FERRO MANGANESE:** The manufacturing process of Ferro Manganese involves the following steps:





- **RAW MATERIAL PREPARATION:** The main raw materials for Ferro Manganese production are manganese ore, silica, and carbonaceous reducing agents such as coal or coke. These materials are carefully selected and prepared for the smelting process.
- **SMELTING:** The prepared manganese ore, silica, and carbonaceous reducing agents are mixed together in precise proportions and charged into a submerged arc furnace. The furnace operates at high temperatures, typically around 1600-1650°C. An electric current is passed through the electrodes to generate heat, melting the materials.
- **ALLOY FORMATION:** In the smelting process, the manganese in the manganese ore combines with the carbon from the reducing agents to form Ferro Manganese alloy. The manganese content in Ferro Manganese can vary, typically ranging from 60% to 80%.
- **COOLING AND CRUSHING:** Once the alloy is formed, it is poured into moulds or casted into various shapes. The resulting solid Ferro Manganese is then cooled and crushed into different size fractions, depending on the specific requirements of the customers.

**E. PIG IRON:** The manufacturing process of Pig Iron involves the following steps:

- **RAW MATERIAL PREPARATION:** The main raw materials for Pig Iron production are iron ore, coke (fuel), and limestone. These materials are carefully selected and prepared for the smelting process.
- **SMELTING:** The prepared iron ore, coke, and limestone are mixed together in precise proportions and charged into a blast furnace. The furnace operates at high temperatures, typically around 1500-1600°C. Air is blown into the furnace to provide the oxygen necessary for the combustion of coke, resulting in the reduction of iron ore to iron.
- **PIG IRON FORMATION:** In the smelting process, the iron ore is reduced to molten iron, which is then tapped from the furnace and collected in a vessel known as a "pig bed" or "pig casting machine." The resulting product is called Pig Iron due to its shape resembling piglets.



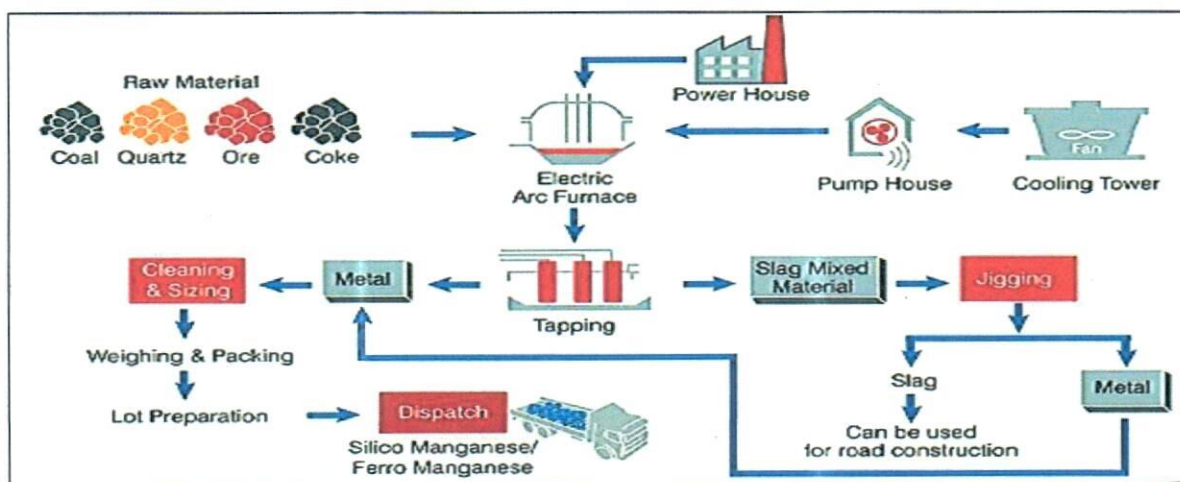


- **COOLING AND PROCESSING:** The molten Pig Iron is cooled and solidified into solid blocks or ingots for further processing. The Pig Iron can be further refined and processed to produce various steel products.

**F. CALCIUM CARBIDE:** The manufacturing process of Calcium Carbide involves the following steps:

- **RAW MATERIAL PREPARATION:** The primary raw materials for Calcium Carbide production are lime (calcium oxide) and coke (carbonaceous material). These materials are carefully selected and prepared for the reaction process.
- **REACTION:** The lime and coke are mixed together in a submerged arc furnace and subjected to extremely high temperatures, typically around 2000-2200°C. The intense heat causes a chemical reaction known as the electric-arc reaction, where calcium oxide reacts with carbon to form Calcium Carbide.
- **COOLING AND SOLIDIFICATION:** After the reaction, the molten Calcium Carbide is poured into moulds or casted into various shapes, where it solidifies into solid blocks or granules.
- **CRUSHING AND PACKAGING:** The solid Calcium Carbide is then crushed into smaller size fractions, depending on the specific application requirements. It is then packaged and prepared for distribution and use.

## 2. PROCESS FLOW CHART:



## 3. TECHNOLOGICAL ASSESSMENT:



- a. **USED/PROPOSED TECHNOLOGY:** The company has proposed to commission the 6 MVA Submerged Arc Furnace (SAF). The SAF is a much better qualified unit to produce ferro-alloys with regards to temperature control and adjustment to different reduction potentials. Over time, an independent ferro-alloy industry established which meets today's permanently increasing demands of the steel industry. The majority of ferro-alloys are produced by pyrometallurgical smelting taking place in submerged arc furnaces.

Ferro-alloys are normally produced in a Sub merged electric arc furnace, in which electrical energy is converted to heat energy by applying AC voltage between electrodes, submerged into charges. Heat is mainly produced due to resistance of charge, whereas heat by arc is avoided. Heat generated by electric current through the arc. Ferro-alloy Furnace components are mainly subdivided into three groups:

- a) Power supply equipment
- b) Controlling equipment
- c) Main furnace

**THE PROCESS OPERATION:** The blended raw materials are charged to the Sub Merged Electric Arc furnace. In the furnace three carbon electrodes are partially submerged in the charge, which are supported by hydraulic cylinders for upward and down ward movements for to maintain electric load. Coke or Coal is used for reduction of Ore. The chemical reaction starts at a temperature of 1600 - 1700°C. In the reaction zone of the furnace the ore react with the reductants and after reaction, a mixture trickles down and gets collected at the bottom of the furnace crucible.

The impurities present in the form of molten slag are separated at the time of tapping. In continuous operation, power is applied uninterruptedly and furnaces has a constant power input. Charging is done in small batches and metal is Tapped periodically. Ferro Silicon, Ferro-chrome, Ferro-manganese, Silico Manganese, Calcium Carbide are examples for this.

Each furnace requires definite operating condition i.e. a relationship between furnace, electrical characteristics (rating, current, voltage, secondary power transmission circuit, electrode position) to provide maximum furnace productivity with minimum consumption per ton of alloy. Electrical power required in ferro-alloy furnace for ore smelting is 3-phase power (EHT).

- b. **LATEST/MODERN TECHNOLOGY:**

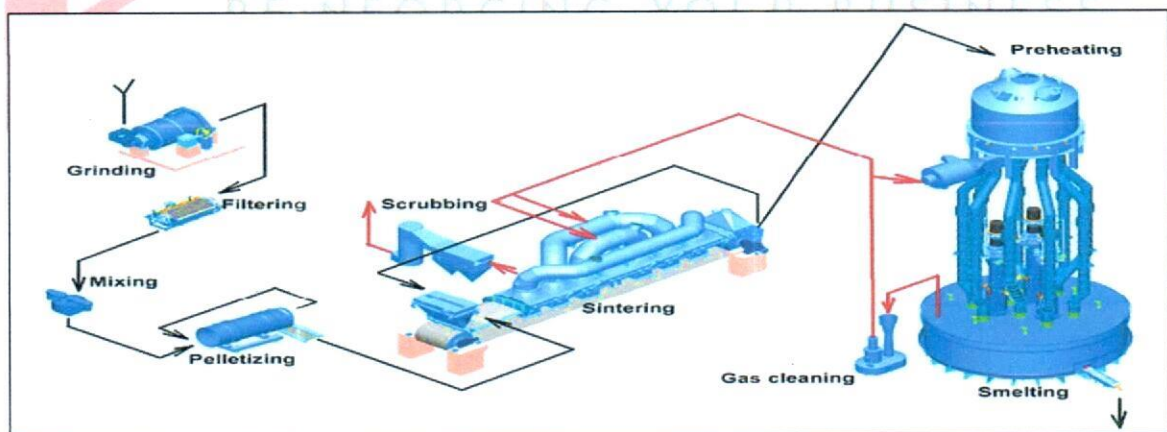




Some of the recent plants have incorporated latest technologies to use both lumps as well as fines after necessary beneficiation and agglomeration. Also they have installed effective pollution control measures in the form of bag filters for gas cleaning after waste heat recovery.

Although the basic technique of ferro alloy production in submerged arc electric furnace has not undergone any major change, the design, the size, automation and control features of ferro alloy furnaces have undergone substantial changes in the recent past in order to meet the changing raw materials conditions and to achieve higher productivity, and better economy of operation and conservation of energy. There are some well-known processes, which have been developed and adopted on large scale elsewhere in the world.

**Auto Kumpu Process from Finland:** In this process pellets are made from chrome ore fines/concentrates and are preheated and fed to the furnace in cold or hot condition along with other charge materials. In this process the power consumption for smelting is brought down by about 25%. A flow sheet of this process is given here below:



This process has been adopted by Tisco at their Barnipal plant in India. Because of several problems in filtration after wet grinding and in the pellet sintering shaft furnaces supplied to them earlier instead of sinter belt being provided now, the plant could not be operated with full capacity. Now they are using pellets along with briquettes after installing a briquetting plant to achieve full production capacity.

**SRC process (Showa Denko, Japan):** In this process pellets made from chrome ore fines are pre-reduced in solid state and are fed to submerged arc furnaces in hot condition. Depending on the extent of pre-reduction of the chromium oxide in pellets obtained in the rotary kilns which utilizes the heat of the furnace exhaust gases, the specific power consumption can be reduced to 50% of the normal.



In the empirical R&D work on pelletisation of high-grade chrome ore fines, about 1500 tonnes of sintered pellets of chrome ore fines were produced and fed to furnace using 80% of the ore requirement in the form of these pellets. Results were encouraging. Very stable and smooth furnace operation was achieved with very good flame distribution over the whole surface area of the charge in furnace. The height of the flames was found to be very small, say few inches compared to few feet otherwise, particularly in the center of the furnace.

It was further observed that fumes had extremely low content of flue dust. The specific power for smelting was lower by about 12% and the fixed carbon requirement was also lower by about 10%. Further studies are being made in this regard to use sintered pellets on regular basis.

Considering the technological developments all Fe Cr furnaces should use baked pellets made from concentrates. Also they should be covered furnaces of minimum 30 MVA and cogeneration of power using furnace gas must be done to make the process more economical and conserve the energy. Chrome ores are mostly friable in nature and necessitate some form of agglomeration before being charged into the furnace along with other raw materials. Most of the chrome alloy producers in India have adopted the briquetting process towards agglomeration of fines.

**c. TECHNOLOGICAL ASSESSMENT:**

Since the end of the 1950s, SAF have been equipped with electrode controllers. Today's advanced submerged arc furnaces make use of software controllers. The DC application for submerged arc furnace technology shows world-wide an increasing market share in niche areas especially in some ferro-alloys, slag cleaning and TiO<sub>2</sub> production units. Nevertheless, the majority of submerged arc furnaces are and will remain AC-technology-based.

Originally, the alloying metals required for upgrading steel were exclusively produced in special blast furnaces which results in a pig iron consisting of small to medium contents of silicon, chromium and manganese. Type of the melting and metallurgical equilibrium determined the carbon content of these alloys. The submerged arc furnace is a much better qualified unit to produce ferro alloys with regard to temperature control and adjustment to different reduction potentials. Over the time an independent ferro alloy industry established which meets today's permanently increasing demands of the steel industry.



The majority of ferro alloys is produced by pyrometallurgical smelting taking place in submerged arc furnaces. Other attempts regarding the hydrometallurgical production of ferro alloys such as high pressurized acid leaching processes for nickel production do so far not show the predicted economical and technical benefits. The strong competitiveness of submerged arc furnaces in this sector was mainly achieved by the installation of advanced high power smelting units.

Thus as per the above technical analysis, M/s Shree Maa Chintpurni Ferro Alloys Pvt Ltd has proposed to set up the project with Submerged Electric Arc Furnace (SAF) technology which is a going on, recognized and trending in the market at present. It can be commented positively that the plant will be running smoothly and technology & specification of the plant are matching with the need to run the plant smoothly and achieve the economies of scale.

#### 4. RAW MATERIAL:

- a) **RAW MATERIAL USED:** The raw materials to be used in the manufacturing process of Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide by M/s Shree Maa Chintpurni Ferro Alloys Pvt. Ltd. include:

S. No.	Product	Major Raw Material Used
1.	Ferro Silicon	The primary raw materials for Ferro Silicon production are silica (SiO <sub>2</sub> ) and iron ore. These materials are carefully selected and prepared for the smelting process.
2.	Silico Manganese	The main raw materials for Silico Manganese production are manganese ore, silica, and high-carbon ferromanganese
3.	Ferro Chrome	The main raw materials for Ferro Chrome production are chrome ore, silica, and carbonaceous reducing agents such as coal or coke. These materials are carefully selected and prepared for the smelting process.
4.	Ferro Manganese	The main raw materials for Ferro Manganese production are manganese ore, silica, and carbonaceous reducing agents such as coal or coke.
5.	Pig Iron	The main raw materials for Pig Iron production are iron ore, coke (fuel), and limestone. These materials are carefully selected and prepared for the smelting process.
6.	Calcium Carbide	The primary raw materials for Calcium Carbide production are lime (calcium oxide) and coke (carbonaceous material).

**Quartz:** Quartz is a primary raw material used in the production of Ferro Silicon. It is a crystalline form of silicon dioxide (SiO<sub>2</sub>) and provides the essential silicon component in the alloy.





**Coke/Coal:** Coke or coal is used as a reducing agent in the production of Ferro Silicon. It provides carbon necessary for the reduction of silicon oxide present in quartz.

**Lime:** Lime, in the form of calcium oxide (CaO), is used in the manufacturing process of Calcium Carbide. It reacts with carbonaceous materials to produce calcium carbide, which is then used for various applications.

**Carbonaceous Materials:** Carbonaceous materials, such as petroleum coke or anthracite coal, are required for the production of Calcium Carbide. These materials provide the necessary carbon for the reaction with lime to form calcium carbide.

**Electricity:** Electricity is an essential utility required for various stages of the manufacturing process, including heating and smelting operations. It is used to generate the high temperatures necessary for the production of Ferro Silicon and Calcium Carbide.

- b) **RAW MATERIAL SUPPLY ANALYSIS:** As per data information provided by the client, the promoters have established a strong network of suppliers, customers through their existing trading business. This network can be leveraged for sourcing raw materials, securing sales contracts, and establishing strategic partnerships. Their existing relationships in the industry will facilitate smooth operations and market penetration.

Also the project is situated in IGC Samba, Phase-I, which provides easy access to target markets in Punjab, Haryana, and other areas. Below table shows the details of few raw material supplier, by whom the company will procure the raw material:

Raw Material for Production of Ferro Silicon		
S. No.	Supplier name	Raw Material
1	Mr. Malaram Ji - M/s Jesnath Charrcoal	Charcoal
2	Mr. Harbhajan - M/s Durga Traders	Charcoal
3	M/s Maa Sharda Traders	Coal
4	M/s Balaji Trading Company	Quartz
5	Ganpati Mines	Quartz

5. **MANPOWER:** As per the details provided by the company officials, in estimating the manpower requirement, a proper ratio between the administrative, managerial, supervisory and shop floor staff has been maintained with a view to affording proper industrial and professional management at various levels. The basic structure of the manpower will require the following kind of resources to operate the plant 24\*7 for 300 days a year:



S. No.	Designation	No. Of Persons	Total	Salary (Per month)
1	Manager	3	35000	105000.00
2	Assistant Manager	5	30000	150000.00
3	Supervisor	5	25000	125000.00
4	Skilled Labour/Operators	12	20000	240000.00
5	Semi - Skilled labour2	12	15000	180000.00
6	Unskilled labour	75	8000	600000.00
7	Accountant / Computer Assistant	4	15000	60000.00
8	Security Guard	4	12000	48000.00
	<b>Total</b>	<b>120</b>		<b>15,08,000.00</b>
	<b>Add fringe benefits @ 10%</b>			<b>1,50,800.00</b>
	<b>Grand Total :-</b>			<b>INR 16,58,800.00</b>

## 6. SELLING, MARKETING & DISTRIBUTION PLAN:

Mr. Rama Nand Modi and Mr. Rakesh Kumar Modi, with their existing experience in the ferro alloy trading business and understanding of the market dynamics, coupled with their established business network, provide a competitive advantage for the project. They are supplying ~10,000 to 15,000 MT of ferro alloys through their trading business in the market. The project will be getting the synergies from the existing customer base along with new customers emerging due to growing demand.

Further, the project's location in IGC SAMBA, Jammu, offers strategic advantages for exporting ferro alloys. Being close to Punjab, Haryana, and other target areas, the unit can easily access local markets. With years of experience in trading business, the company aims to shift focus towards manufacturing to target larger companies such as NTPC, JSW, and TATA.





**PART F**

**PRODUCT PROFILE**

- 1. PRODUCT DETAILS:** The company the proposed to manufacture Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide. These products have significant applications in the steel, construction, and manufacturing industries. The installed capacity of the proposed Unit will be 8100 MTs per annum. Proposed product's profile along with Capacity and applicabilty are mentioned in the below table:

S. No.	Product's Name	Proposed Production	Product Profile
1.	Ferro Silicon	2250 MTPA	<ul style="list-style-type: none"> <li>Ferro silicon is an alloy composed of iron and silicon, with silicon content ranging from 15% to 90%. It is widely used in the steel industry as a deoxidizer and an alloying element.</li> <li>The production of Ferro silicon involves smelting a mixture of silica and iron in a submerged arc furnace. The resulting alloy is then cooled, crushed, and sorted into different size fractions.</li> <li>Ferro silicon has several important properties that make it a valuable additive in steel production. It improves the strength, hardness, and corrosion resistance of steel, making it suitable for various applications. It is commonly used in the manufacturing of stainless steel, carbon steel, and cast iron.</li> <li>Additionally, Ferro silicon is used in the production of silicon steel, which is vital for electrical transformer cores due to its low electrical conductivity and high magnetic permeability.</li> <li>The demand for Ferro silicon is directly proportional</li> </ul>



			to the growth of the steel industry.
2.	Silico Manganese	900 MTPA	<ul style="list-style-type: none"> <li>Silico Manganese is an alloy composed of silicon (Si) and manganese (Mn) with varying ratios. The silicon content typically ranges from 15% to 90%, while the manganese content ranges from 10% to 30%. It may also contain small amounts of other elements.</li> <li>Silico Manganese is produced by smelting a combination of high-grade manganese ore, quartz, and fluxes in a submerged arc furnace. The molten alloy is then cooled, solidified, and crushed into different size fractions.</li> <li>Silico Manganese is used as an additive in steel production. It enhances the strength, toughness, and workability of steel, making it suitable for construction, automotive, and infrastructure applications. It also helps in deoxidizing and desulfurizing the molten steel, improving its quality and performance.</li> </ul>
3.	Ferro Chrome	900 MTPA	<ul style="list-style-type: none"> <li>Ferro Chrome is an alloy composed of chromium (Cr) and iron (Fe) with varying ratios. The chromium content typically ranges from 50% to 70%, while iron and other elements are present in smaller amounts.</li> <li>Ferro Chrome is produced by smelting chromite ore, coke or coal, and fluxes in a submerged arc furnace. The resulting alloy is then cooled, crushed, and screened into different size fractions.</li> <li>Ferro Chrome is primarily used as an additive in stainless steel production. It imparts corrosion</li> </ul>





			<p>resistance, high-temperature strength, and aesthetic appeal to stainless steel products.</p> <ul style="list-style-type: none"> <li>It finds applications in automotive components, kitchenware, architectural structures, and other industries where stainless-steel properties are desired.</li> </ul>
4.	Ferro Manganese	1530 MTPA	<ul style="list-style-type: none"> <li>Ferro Manganese is an alloy composed of manganese (Mn) and iron (Fe) with varying ratios. The manganese content typically ranges from 60% to 80%, while iron and trace impurities are present in smaller amounts.</li> <li>Ferro Manganese is produced by smelting a combination of high-grade manganese ore, iron ore, and fluxes in a submerged arc furnace. The molten alloy is then cooled, solidified, and crushed into different size fractions.</li> <li>Ferro Manganese is used as an additive in steel production. It improves the hardness, toughness, and wear resistance of steel, making it suitable for construction, automotive, and other applications. It also acts as a deoxidizer, reducing the oxygen content in the molten steel and enhancing its quality.</li> </ul>
5.	Pig Iron	1620	<ul style="list-style-type: none"> <li>Pig Iron is an intermediate product obtained during the smelting of iron ore in a blast furnace. It contains a high percentage of iron (typically around 92-94%), along with carbon (around 3- 4%), and smaller amounts of silicon, manganese, sulphur, and phosphorus.</li> </ul>





			<ul style="list-style-type: none"> <li>Pig Iron is produced by melting iron ore, coke, and limestone in a blast furnace. The molten iron is then cast into moulds or cooled and solidified for further processing.</li> <li>Pig Iron serves as a key raw material for the production of steel and cast iron. It can be further processed to produce various types of cast iron products, including pipes, fittings, automotive parts, and structural components.</li> </ul>
6.	Calcium Carbide	900 MTPA	<ul style="list-style-type: none"> <li>Calcium carbide is a chemical compound with the formula <math>CaC_2</math>. It is produced through the reaction of lime (<math>CaO</math>) and coke (carbon) in a submerged arc furnace. Calcium carbide is primarily used in the production of acetylene gas, which has various industrial applications.</li> <li>Acetylene gas is generated by adding water to calcium carbide, resulting in the release of acetylene gas and calcium hydroxide. Acetylene gas is widely used as a fuel in oxy-acetylene welding and cutting, providing a high-temperature flame. It is also utilized in the manufacturing of plastics, solvents, and various organic compounds.</li> <li>The demand for calcium carbide is mainly driven by the construction and manufacturing Industries. The construction sector uses acetylene gas for welding and cutting purposes, while the manufacturing sector utilizes it as a raw material for various chemical processes. As these industries continue to grow, the demand for calcium carbide remains steady.</li> </ul>



## 2. PRODUCTS MANUFACTURED AT MANUFACTURING FACILITY:



Source - Pics obtained from the Public Domain

## 3. PRICING STRATEGY:

Pricing of the products are taken on the average basis of last 12 month pricing trends in the market shown in the below table:

Last 12 Month Pricing Trends (INR)						
Particular	FERRO SILICON	SILICON MANGANESE	FERRO CHROME	FERRO MANGANESE	PIG IRON	CALCIUM CARBIDE
Jan-23	105000	70000	85000	70000	30000	40000
Feb-23	108000	78000	90000	80000	35000	45000
Mar-23	125000	82000	95000	85000	40000	50000
Apr-23	135000	87000	110000	88000	45000	55000
May-23	155000	88000	115000	90000	50000	60000
Jun-23	170000	89000	125000	95000	55000	65000
Jul-23	180000	90000	130000	100000	60000	70000



<b>Aug-23</b>	155000	86000	125000	90000	51000	60000
<b>Sep-23</b>	140000	84000	120000	85000	50000	55000
<b>Oct-23</b>	122000	79000	115000	80000	40000	48000
<b>Nov-23</b>	120000	76000	110000	75000	35000	40000
<b>Dec-23</b>	105000	75000	100000	70000	25000	36000
<b>AVERAGE</b>	<b>135000</b>	<b>82000</b>	<b>110000</b>	<b>84000</b>	<b>43000</b>	<b>52000</b>

As per data/information provided by the client and tertiary research done by us, we have considered the selling price as average of last 12 months as per shown in the table above during the projected period.

The selling price of the proposed products also varies depending upon grade, specifications & quality and may variate according to price volatility with respect to Geo-political aspects, Demand & Supply and other factors. As per our tertiary research and data/information available in the public domain we found that the prices are in the range and trends of the market at present.

- 4. CUSTOMER BASE:** The project is situated in IGC Samba, Phase-I, which provides easy access to target markets in Punjab, Haryana, and other areas.

Further, the promoters are having existing customer base as they are in the trade business of same products from long time. To meet the market demand, promoters have planned to manufacture 8100 MTPA at their own manufacturing facility to boost the supply along with existing trading as these products have significant applications in the steel, construction, and manufacturing industries. As per details shared by the client, below table shows the details of few existing buyers of the company:

Existing Customer Details			
S. No.	Buyer's Name	Address	Buying Annually MT
1	Shree Jagdish Impex Pvt Ltd	Shed No.53 Akshar Industrial Park Near Ramol, Hatijan Circle G.I.D.C. Phase - 4, Vatva Ahemadabad	1820
2	Shri Narsingh Micro Alloys Private Limited	Shed - 84, 583, 32, 91 Axar Indl. Estate B/H Amba, Estate Vinzol Patiya Vatva G.I.D.C, Ahmedabad	1610
3	Jai Balaji Industries Ltd (Unit - Iii)	Vill.Banskopa P.O. Rajbandh, Durgapur	1400
4	Jamipol Limited	Namdih Road, Burmamines, Jamshedpur	1550



5	Sadashiv Alloys	Vill. Sounti Opp. Desh Bhagat Collage, Amloh Road Mandi Gobindgarh	1460
6	Indegenous Greenworld Private Limited	G.S. Road, 15th Vile, Byrnihat, Barni, Kamrup Metropolitan	1450
7	Hariaksh Industries Pvt Ltd	Siddha Weston Unit No.204, 2nd Floor 9 Weston Street, Kolkata	1560
8	Brg Iron & Steel Co Pvt Ltd	Works :- Nh 42 Kurunti Motanga, Dhenkanal Odisha	1310
9	Shanti Satya Alloys	Near Prince Dhaba, Ring Road -2, Gogaon, Raipur	1440
10	Namoh Alloys	Godown No. H-5 Munisuvrat Compound Phase - 1, Vill. Rehnaal Bhiwandi, Distt. Thane	1450
<b>Total</b>			<b>15,050 MT</b>

**rk** REINFORCING YOUR BUSINESS<sup>®</sup>  
**ASSOCIATES**  
VALUERS & TECHNO ENGINEERING CONSULTANTS (P) LTD.  
VALUATION CENTER OF EXCELLENCE  
& RESEARCH CENTRE





**PART G**

**INDUSTRY OVERVIEW & ANALYSIS**

**1. INTRODUCTION:**

Ferroalloys, alloys of iron with one or more other elements added to steel melts, are used to impart distinctive qualities to steel or to serve important functions during steel refining, such as control of inclusions, DE oxidation, and desulfurization. Ferroalloys are used in lesser amounts to produce cast iron and nonferrous alloys. Ferroalloys can be divided into bulk ferroalloys and noble ferroalloys (also called special or specialty ferroalloys).

The global Ferro Alloys market was valued at USD 66890 million in 2022 and is anticipated to reach USD 87320 million by 2029, witnessing a CAGR of 3.8 percent during the forecast period 2023-2029.

**2. MARKET SIZE:**

India is the second-largest steel producer globally, the steel industry has experienced significant growth, averaging a 6% annual growth rate between 2016 and 2021. This growth trajectory highlights a consistent and rising demand for Ferro Alloys in the country. India's Ferro Alloy industry plays a crucial role in meeting this demand, accounting for nearly 10% of the world's production with a capacity of 5.15 million tons. Additionally, the industry actively engages in export activities, contributing to the country's foreign exchange earnings.

Capacity of Ferroalloys Industry in India	
Ferroalloys	Installed capacity (In tonnes per annum)
Total	5150000
Bulk Ferro alloys	5100000
Manganese alloys	3160000
Chrome alloys	1690000
Ferrosilicon	250000
Noble Ferro alloys	50000

Source: Indian Ferro alloys Producers' Association (IFAPA), Mumbai.

The market and demand for Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide are closely linked to the growth of the steel industry and its related sectors. Ferro Silicon, widely used as a deoxidizer and alloying element in steel production, experiences a consistent demand due to the increasing need for high-quality steel in construction and automotive sectors. The market for Ferro Silicon is



projected to reach a value of USD 11.34 billion by 2026, with an expected growth rate of 4.3% from 2021 to 2026, according to industry reports.

Similarly, Silico Manganese, used as an additive in steel production to enhance strength and workability, witnesses a rising demand driven by the steel industry's growth and the need for high-quality steel in construction and infrastructure sectors. The global Silico Manganese market is projected to reach USD 16.6 billion by 2026, with a compound annual growth rate of 5.2% from 2021 to 2026, as per market research.

Ferro Chrome, a vital alloying element in stainless steel production, benefits from the increasing demand for stainless steel products in sectors such as automotive, construction, and household appliances. The growth of the stainless-steel industry contributes to the demand for Ferro Chrome, which plays a crucial role in providing corrosion resistance and aesthetic appeal.

The demand for Ferro Manganese, used as a deoxidizer and alloying element in steel production, aligns with the growth of the steel industry and the need for specialty steel alloys. The construction, automotive, and manufacturing sectors drive the demand for Ferro Manganese, which enhances hardness, toughness, and wear resistance in steel products.

Pig Iron, serving as a vital raw material for steel production, experiences demand based on the growth of the steel industry. As construction, automotive, and manufacturing sectors expand, the demand for Pig Iron rises due to its further processing into various cast iron products.

Calcium Carbide, primarily used for the production of acetylene gas, finds demand in welding, cutting, and industrial processes. The construction, manufacturing, and metal fabrication sectors drive the demand for Calcium Carbide, as acetylene gas is essential in these industries.

In conclusion, the market and demand for Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide are closely tied to the growth of the steel industry and its related sectors.

- 3. POWER:** Electrical energy is one of the major inputs in production of Ferro Alloys. Though the generation cost of power is not high in India, the Power Tariff borne by the Industry is high, because of cross-subsidization to Agricultural Sector, Low Plant Load Factor of old thermal plants and High T & D losses. Electricity Duty, which varies widely from State to





State, creates additional burden for the Industry. Though power Reforms are on, the impact of this development on long-term prices, specifically power intensive consumers, such as Ferro Alloy producers, is difficult to assess, since the electricity market still seems to be in a state of flux. Captive Power generation may hold the key, though capably intensive.

- 4. LOGISTICS:** The Industry produces over 2.5 million tonnes of Ferro Alloys annually. To produce one tonne of Ferro Alloys it requires nearly 4 tonnes of Raw Material, viz., Ore, Quartzite, Coke, Charcoal, Limestone and Carbon Paste, etc. Nearly 1.4 tonnes of such raw materials are moved by Railway wagons for one tonne of Ferro Alloy Production. This means that the industry consumes over 3.5 million tonnes of raw materials, which are transported by rail every year. The Industry has been experiencing shortage of wagons for transporting raw materials so road transport becomes necessary. Freight element is very high, thus reducing competitiveness of the Industry. Poor infrastructure facilities at Port also lead to berthing delays for ships and take longer loading time

**5. CHALLENGES TO THE FERRO ALLOY INDUSTRY:**

Ferro alloys industry in India has never been globally competitive, despite its rich ore deposits and low-cost manpower, essentially due to:

- Insufficient availability and high cost of electric power
- Increasing ores and reductants cost
- Non-availability of low ash, low phos. Coking coal in the country for the production of desired coke with low ash, and low phos. Contents, making import of such coke at a high cost imperative.
- High-cost and insufficient infrastructural facilities (both road and rail) for rapid transportation of ore from mines to plants.
- Stiff competition from producers and exporters of Ferro alloys in other countries like South Africa, Kazakhstan, China, Russia, Mexico, Australia etc. due to global trade agreements which has made drastic reduction in customs duty on imports necessary.
- Wide fluctuations in the International price of Ferro alloys depending on demand versus supply.

To overcome these challenges plus adhering to stringent pollution control norms innovations are inevitable in the process technology, and plant equipment size & design, along with frequent changes in product mix, to be more cost-effective



**6. FUTURE OUTLOOK:** It's no secret that the steel sector in India is one of the fastest growing, in-demand and robust sectors. While the pandemic and global export/import circumstances did cause the sector to slow down for a while, recent development is bringing the sector back to its glory. Today, the Indian steel industry ranks second in global production

India's Steel consumption has grown over 11% to 119 million tonnes in FY 2023 from 105 million tonnes in FY 2022. The expected growth momentum to continue with the emphasis of developing the infrastructure of the country by Prime Minister, this is reasonable to expect the steel consumption including exports will be around 132 million tonnes to 135 million tonnes in FY 2024.

Government has introduced several initiatives to boost steel production in India and reach 300 MT in production by 2030. It has removed the 15% export taxes, and working towards removing technology, logistics and infrastructure bottlenecks.

An INR 10 lakh crore capital expenditure plan was announced. The goal of this plan is to focus on domestically produced steel to make the nation self-reliant. The plan would also position India as a leading manufacturing hub and gradually scale the steel sector's contribution to India's GDP from its current 2% to 5%. As a raw material, the demand for steel has been steadily rising. Though there are often concerns about price hike and environmental factor, the benefits and applications of the metal are too many.

The market and demand for Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide are closely linked to the growth of the steel industry and its related sectors.





**PART H**

**SWOT ANALYSIS**

SWOT ANALYSIS	
<b>STRENGTHS</b>	<ul style="list-style-type: none"> <li>• <b>Strategic Location:</b> The project is situated in IGC Samba, Phase-I, which provides easy access to target markets in Punjab, Haryana, and other areas.</li> <li>• <b>Experienced Management:</b> The project is led by directors Mr. Rama Nand Modi and Mr. Rakesh Kumar Modi, who are having experience and knowledge of the Ferro Alloys industry through the existing trading business of the proposed products.</li> <li>• <b>Growing Demand:</b> With the steel industry witnessing growth, there is a consistent demand for Ferro Alloys which is expected to grow at a CAGR of ~5% in the upcoming years.</li> <li>• <b>Government Support:</b> The project will be entitled to avail incentives as provided in the Jammu and Kashmir Industrial Policy 2021 as per Jammu and Kashmir Industrial Policy 2021-30 (Reference: Administrative Council Decision No.46/7/2021 dated 09.04.2021, Government Order No: 117 IND of 2021) dated 19th April 2021.</li> <li>• <b>Synergy:</b> Promoters are already supplying ~15,050 MT of Ferro Alloys through the existing trading business. Thus the proposed project will get the synergies from the existing customer base as well as suppliers.</li> </ul>
<b>WEAKNESSES</b>	<ul style="list-style-type: none"> <li>• <b>Market Competition:</b> The Ferro Alloy industry in India is competitive, and the project will need to differentiate itself and maintain competitive 4P (Price, Place, Promotion, Production) to capture market share.</li> <li>• <b>Infrastructure Requirements:</b> The project's power load and water consumption are significant, and ensuring uninterrupted power supply and adequate water resources may pose challenges.</li> <li>• <b>Import Dependency of Manganese base Ferro Alloys:</b> A structural disadvantage for the domestic manganese-based Ferro alloy industry is its import dependence on high-grade manganese ore. An increase in domestic production of high-grade Mn ore remains crucial to give a sustainable competitive edge to the domestic Ferro alloy industry over its global peers.</li> </ul>



<p><b>OPPORTUNITIES</b></p>	<ul style="list-style-type: none"> <li>• <b>Increasing Steel Production:</b> As the steel industry is expanding, there will be an organic demand for Ferro Alloys presenting opportunities for the project to capture a larger market share.</li> <li>• <b>Export Potential:</b> The Indian Ferro Alloy industry has the potential to export its products. The project can explore export opportunities, expanding its customer base and revenue streams.</li> <li>• <b>Technological Advancements:</b> Embracing technological advancements in manufacturing processes and adopting innovative techniques can enhance productivity and efficiency, giving the project a competitive edge.</li> <li>• <b>Government Support:</b> The project can benefit from government initiatives and policies aimed at promoting the steel industry and supporting domestic manufacturing.</li> </ul>
<p><b>THREATS</b></p>	<ul style="list-style-type: none"> <li>• <b>Fluctuating Raw Material Prices:</b> Volatility in the prices of raw materials, such as metal, coal, and steam coal, can impact the project's profitability and margins.</li> <li>• <b>Regulatory Compliance:</b> Adhering to various regulations and obtaining necessary permits, including those related to electricity, pollution, and water, can be time consuming and may pose challenges.</li> <li>• <b>Economic Factors:</b> Changes in economic conditions, such as inflation, interest rates, or market downturns, can affect the demand for Ferro Alloy products. We found that the project is highly sensitive with respect to revenue fluctuations.</li> <li>• <b>Environmental Concerns:</b> The project may face stricter environmental norms in future, and any non-compliance or negative environmental perception may impact Project operations and even lead to closure.</li> <li>• <b>Manufacturing Experience:</b> Promoters are having experience of trading business, however entering into manufacturing may explore new multidimensional challenges.</li> </ul>





**PART I**

**PROJECT COST AND MEANS OF FINANCE**

As per data/information shared by the client, below are the details of Total project Cost (TPC) and means of finance of the proposed Ferro Alloy Manufacturing Unit:

Total Project Cost	
Particulars	Total (INR Lakh)
Land	77.00
Building	300.00
Plant And Machinery	2,158.11
Misc. Fixed Assets	274.68
Pre-Operative Expenses	57.00
IDC	113.75
Working Capital Margin	119.36
<b>Total</b>	<b>INR 3,099.90 Lakhs</b>

Details Of Pre-Operative Expenses	
Particulars	Amount (INR Lakhs )
Establishment Expenses	3.50
Travelling	2.75
Printing, Stationery, Postage, Telephone etc.	0.75
Report Preparation Fees	0.50
Other misc. expenses including fees payable to consultants and authorities	4.50
Security deposit	45.00
<b>Total</b>	<b>INR 57.00 Lakhs</b>

Means Of Finance	
Particular	Total (INR Lakh)
Paid Up Capital	500.00
Promoters Fund	799.90
Term Loan P&M	1,800.00
Term Loan Building	-
<b>Total</b>	<b>INR 3,099.90 Lakhs</b>

**Notes:**

- 8 Kanal (43,203 Sq. Ft.) of Land has been taken from the J&K Industrial development Corporation Limited on the lease basis for 44 years. Company has paid 20% of land





premium along with 3 months of advance lease rent & maintenance charges including GST, which comes to ~INR 77.00 Lakhs including ~7 Lakhs for land development and other charges.

2. As per quotation of the Building and civil works shared by the client, cost will be INR 193.63 Lakhs including 12% applicable GST. The quotation is only of labour rate, whereas material rate is not specified. Therefore to calculate the complete construction cost, we have made a general assessment based on plinth area rates. As per our calculation the cost may vary from Rs.2.8 crores to Rs.3.2 crores, further depending upon the quality of construction and other factors as finalised with the contractor, the range variation is mainly due to the unavailability of BOQ and estimate to determine the quality/specification of material to be used which is yet to be finalized.
3. As per discussion with the consultant and quotations shared by the client, the Plant and Machinery cost will be INR 2158.11 Lakhs including 18% applicable GST & 12% erection, loading, unloading charges. Cost appears to be inline as per our tertiary research for the machines and Project cost for which we could gather from public domain. However there is no fixed cost for any such project and may vary in the range depending upon the brand & configuration.
4. As per information available on J&K Power Corporation Limited website, company is supposed to pay INR 3.00 Crore as Bank Guarantee to take the electricity connection for which company will be giving INR 45 Lakhs to the bank as security deposit against BG.
5. Preliminary & Pre-Operative Expenses has been taken as lump sum based on the time period of construction and estimate of company's resources involvement during this time in supervision & monitoring of the construction as INR 57.00 Lakhs including 45 Lakhs security deposit against Bank Guarantee.
6. Interest during Construction will be paid from March 2024 by the company @ 10%.





**PART J**

**PROJECT SCHEDULE**

Below is the tabulated presentation of the status of the project showing expected duration shared by the project manager of the company. The project is expected to be complete soon.

S. No.	Particulars	Activity	Expected completion date	Status
1.	Land	Land Procurement	15 <sup>th</sup> April 2023	As per lease deed Completed
		Land Development	June 2023	Completed
2.	Sanction of Rupee Term Loan	Sanction of Rupee Term Loan	10 <sup>th</sup> March 2024	Pending
3.	Building & Civil Works	Appointment of Architect	April 2023	Completed
		Building Plan Preparation	May 2023	Completed
		Building Plan Sanction	10 <sup>th</sup> July 2023	Completed
		Appointment of Civil contractor/ developer	October 2023	Completed
		Building & Civil Works completion	August 2024	Started
4.	Plant & Machinery	Finalization of P&M suppliers	September 2024	Completed
		Orders to P&M suppliers	September 2024	WIP
		Arrival of P&M	November 2024	Pending
		Installation of	December 2024	Pending



		P&M		
		Utility Installation	Jan 2025	Pending
5.	Statutory Approvals, registrations & NOCs	From the respective authorities	15 <sup>th</sup> March 2025	Most of the Pre- operational NOC's has been taken by the company.
6.	Finishing & Trail Run	Informed by client	15 <sup>th</sup> March 2025	Pending
7.	Commercial Operation Date	Informed by client	31 <sup>st</sup> March 2025	Pending

**Notes:**

1. Schedule has been made based on current status as per feasibility to achieve different milestones.
2. Achievement of Milestone will depend on sanction of term loan as per proposed timeline.
3. As per this timeline, expected COD will be 31<sup>st</sup> March 2025.





**PART K**

**STATUTORY APPROVALS | LICENCES | NOC**

Following major approvals are required. However the list are not exhaustive and State / district Authorities may be approached for further clearances required (if any):

S. No.	REQUIRED APPROVALS	REFERENCE NO./ DATE	STATUS (Approved/ Applied For/ Pending)
1.	Certificate of Firm Registration Ministry of Corporate Affairs, Government of India	10 <sup>th</sup> December 2021	Approved
2.	GST & PAN	01ABHCS4736JIZB, ABHCS4736J,	Approved
3.	District Industries Centre (J&K) Office of the General Manager District Industries Samba	8th May 2023 DICS/1788-PROV/306	Approved
4.	Land conversion to Industrial/Non agriculture	N/A	Not Applicable since it is a leased land allotted by SIDCO. In lease deed type of land mentioned is Agriculture Non- Irrigated Land.
5.	Registration of Factories under The Factories Act, 1948 Department of Labour and Employment, Government of J&K	NA	Apply in due course
6.	Building and civil works Plan Sanction Approval Concerned local development authority	Permission No. SIDCO/ BPC/ 1914 Dated: 10 <sup>th</sup> August, 2023	Approved
7.	Provisional Fire NOC (pre sanction) Fire Services Department	NA	Apply in due course





8.	Fire NOC (on completion) <i>Fire Services Department</i>	NA	Apply in due course
9.	Power Load Sanction <i>J&amp;K Power Distribution Corporation Limited</i>	Office Order No. CEJ/ TS/145 of 2023 dated: 30 <sup>th</sup> Aug 2023	Approved (Security & fees pending)
10.	Consent to establish (under Water Act & Air Act) <i>J&amp;K State Pollution Committee</i>	Consent No. PCC/digital/23013798321 dated: 28 <sup>th</sup> July 2023	Approved for 4,500 MTPA Silicon & Calcium Carbide and Furnace section is permitted for 5,400 Nm <sup>3</sup> /hour with the height of 30 meters. Refer Note 4 below.
11.	Permission for extraction of ground water	NA	Apply in due course
12.	Udyam Registration Certificate (MSME) <i>Ministry of MSME</i>	UDYAM-DL-10-0045806	Approved

#### Observation Notes:

- As per discussion with the client, company has taken the approval of map.
- According to DIC approval, Company is permitted to manufacture Ferro Silicon and Calcium Carbide only at present. Company is required to apply for a fresh DIC approval for manufacturing other proposed products.
- As per power sanction approval, 6000KVA power load has been sanctioned to the company.
- As per pollution control certificate/NOC, Company is permitted to manufacture only 4,500 MTPA Silicon & Calcium Carbide and Furnace section is permitted for 5,400 Nm<sup>3</sup>/hour with the height of 30 meters at present. (Ref: Consent No.- PCC/digital/23013798321 dated 28/07/2023). To operate at a larger scale i.e. 8,100 MTPA, company is required to apply for a fresh pollution approval.
- Rest approvals are pending and will be applied in due course as per above schedule.
- Above is the only illustration of the major approvals sought or to be sought by the company. It should not be construed as the exhaustive list and in case any approval is missed to be mentioned then it is the sole responsibility of the company to keep the unit compliant with the necessary statutory approvals/ NOCs.





**PART L**

**COMPANY'S FINANCIAL FEASIBILITY**

1. **PROJECTIONS OF THE FIRM:** The projections of the proposed manufacturing unit are done for next 7 years period from FY 2025-26 to 2031-32 based on the expected COD and loan tenor are elaborated below:

**A. PROJECTED PROFIT & LOSS ACCOUNT:**

(INR Lakhs)

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Gross Sales :</b>							
Domestic sales	4329.18	5050.71	5772.24	6133.01	6133.01	6133.01	6133.01
Less Excise duty	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Net sales</b>	<b>4329.18</b>	<b>5050.71</b>	<b>5772.24</b>	<b>6133.01</b>	<b>6133.01</b>	<b>6133.01</b>	<b>6133.01</b>
<b>Cost of Sales :</b>							
<b>Raw materials (including stores and other items used in the process of manufacture)</b>							
(a) Imported.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(b) Indigenous Consumable	2067.52	2412.11	2756.70	2928.99	2928.99	2928.99	2928.99
<b>Other Spares</b>							
(a) Imported Freight/Loading	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(b) Indigenous	127.93	149.26	170.58	181.24	181.24	181.24	181.24
Power & fuel	1002.36	1170.08	1338.00	1422.43	1423.25	1424.06	1424.89
Direct labour	199.06	218.96	240.86	264.94	291.44	320.58	352.64
Lease Rentals/Other Expenses	86.58	101.01	115.44	122.66	183.99	183.99	183.99
Depreciation	411.36	351.22	299.94	256.21	218.92	187.11	159.96
<b>SUB-TOTAL</b>	<b>3,894.82</b>	<b>4,402.64</b>	<b>4,921.52</b>	<b>5,176.48</b>	<b>5,227.83</b>	<b>5,225.98</b>	<b>5,231.71</b>
Add :Opening stocks-in-process	0.00	34.46	40.20	45.94	48.82	48.82	48.82
<b>Sub Total</b>	<b>3,894.82</b>	<b>4,437.10</b>	<b>4,961.72</b>	<b>5,222.43</b>	<b>5,276.64</b>	<b>5,274.79</b>	<b>5,280.53</b>
Deduct: Closing stocks-in-process	34.46	40.20	45.94	48.82	48.82	48.82	48.82
<b>Cost of Production</b>	<b>3,860.36</b>	<b>4,396.90</b>	<b>4,915.77</b>	<b>5,173.61</b>	<b>5,227.83</b>	<b>5,225.98</b>	<b>5,231.71</b>
Add : Opening Stock of finished goods	0.00	102.94	117.25	131.09	137.96	139.41	139.36
<b>Sub Total</b>	<b>3,860.36</b>	<b>4,499.84</b>	<b>5,033.02</b>	<b>5,304.70</b>	<b>5,365.79</b>	<b>5,365.38</b>	<b>5,371.07</b>



Deduct closing stock of finished goods	102.94	117.25	131.09	137.96	139.41	139.36	139.51
<b>SUB-TOTAL (Total cost of Sales)</b>	<b>3,757.42</b>	<b>4,382.59</b>	<b>4,901.94</b>	<b>5,166.73</b>	<b>5,226.38</b>	<b>5,226.03</b>	<b>5,231.56</b>
Selling General & Administrative Expenses	129.88	151.52	173.17	183.99	183.99	183.99	183.99
<b>SUB TOTAL</b>	<b>3,887.29</b>	<b>4,534.11</b>	<b>5,075.10</b>	<b>5,350.73</b>	<b>5,410.37</b>	<b>5,410.02</b>	<b>5,415.55</b>
Operating profit before interest	441.89	516.60	697.14	782.28	722.63	722.99	717.46
Interest	213.75	200.75	180.00	153.25	120.50	84.50	51.25
Operating profit after interest.	228.14	315.85	517.14	629.03	602.13	638.49	666.21
Preliminary Exp. w/o	2.40	2.40	2.40	2.40	2.40	0.00	0.00
Profit before tax/loss	225.74	313.45	514.74	626.63	599.73	638.49	666.21
Current Taxes	62.80	87.20	143.20	174.33	166.85	177.63	185.34
<b>Net profit/loss</b>	<b>162.94</b>	<b>226.25</b>	<b>371.54</b>	<b>452.30</b>	<b>432.89</b>	<b>460.86</b>	<b>480.87</b>
Retained profit	162.94	226.25	371.54	452.30	432.89	460.86	480.87

**B. PROJECTED BALANCE SHEET:**

(INR Lakhs)

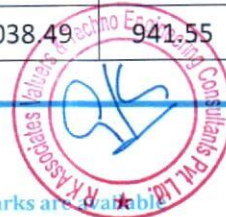
Particular	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Current Liabilities</b>							
Short-Term Bank Borrowings	350.00	350.00	350.00	350.00	350.00	350.00	350.00
<b>Sub Total (A)</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>
Sundry Creditor	86.15	100.50	114.86	122.04	122.04	122.04	122.04
Other Creditors	8.07	8.07	8.07	8.07	8.07	8.07	8.07
Provisions (Due Within 1 Year)	180.00	240.00	300.00	360.00	360.00	300.00	0.00
<b>Sub Total (B)</b>	<b>274.22</b>	<b>348.57</b>	<b>422.93</b>	<b>490.11</b>	<b>490.11</b>	<b>430.11</b>	<b>130.11</b>
<b>Total Current Liabilities</b>	<b>624.22</b>	<b>698.57</b>	<b>772.93</b>	<b>840.11</b>	<b>840.11</b>	<b>780.11</b>	<b>480.11</b>
<b>Non-Current Liabilities</b>							
Mach. T/L	1,560.00	1,320.00	1,020.00	660.00	300.00	-	-
<b>Total Term Liabilities</b>	<b>1560.00</b>	<b>1320.00</b>	<b>1020.00</b>	<b>660.00</b>	<b>300.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Outside Liabilities</b>	<b>2184.22</b>	<b>2018.57</b>	<b>1792.93</b>	<b>1500.11</b>	<b>1140.11</b>	<b>780.11</b>	<b>480.11</b>



<b>Net Worth</b>							
Ordinary Share Capital	500.00	500.00	500.00	500.00	500.00	500.00	500.00
Promoters Fund	799.90	799.90	799.90	799.90	799.90	799.90	799.90
S. Plus(+) Or Deficit(-)	162.94	389.18	760.72	1,213.02	1,645.91	2,106.77	2,587.64
<b>Net Worth</b>	<b>1,462.83</b>	<b>1,689.08</b>	<b>2,060.62</b>	<b>2,512.92</b>	<b>2,945.80</b>	<b>3,406.67</b>	<b>3,887.53</b>
<b>Shareholder's Equity &amp; Liabilities.</b>	<b>3,647.05</b>	<b>3,707.65</b>	<b>3,853.55</b>	<b>4,013.03</b>	<b>4,085.92</b>	<b>4,186.78</b>	<b>4,367.64</b>
<b>Current Assets</b>							
Cash And Bank Balances	117.80	125.42	132.76	134.89	136.81	138.54	140.09
(I) Receivables	721.53	841.79	962.04	1022.17	1022.17	1022.17	1022.17
Inventory :							
(I) Raw Materials							
(A) Imported.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(B) Indigenous	0.00	0.00	0.00	0.00	0.00	0.00	0.00
li) Stock In Process	34.46	40.20	45.94	48.82	48.82	48.82	48.82
lii) Finished Goods	102.94	117.25	131.09	137.96	139.41	139.36	139.51
Loan & Advances	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Other Current Assets (Preliminary Expenses)	63.14	327.03	625.69	969.38	1257.82	1544.11	1883.24
<b>Total Current Assets</b>	<b>1089.87</b>	<b>1501.69</b>	<b>1947.52</b>	<b>2363.22</b>	<b>2655.02</b>	<b>2942.99</b>	<b>3283.83</b>
<b>Fixed Assets</b>							
Gross Block (Land & Building Machinery, Work-In-Progress)	2,923.54	2,512.18	2,160.96	1,861.03	1,604.81	1,385.89	1,198.78
Depreciation	411.36	351.22	299.94	256.21	218.92	187.11	159.96
<b>Net Block</b>	<b>2,512.18</b>	<b>2,160.96</b>	<b>1,861.03</b>	<b>1,604.81</b>	<b>1,385.89</b>	<b>1,198.78</b>	<b>1,038.82</b>
Security deposit	45.00	45.00	45.00	45.00	45.00	45.00	45.00
<b>Total Assets</b>	<b>3,647.05</b>	<b>3,707.65</b>	<b>3,853.55</b>	<b>4,013.03</b>	<b>4,085.92</b>	<b>4,186.78</b>	<b>4,367.64</b>

**C. KEY FINANCIAL RATIO:**

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Total Revenue</b>	4329.18	5050.71	5772.24	6133.01	6133.01	6133.01	6133.01
<b>EBITDA</b>	853.24	867.81	997.07	1038.49	941.55	910.10	877.42

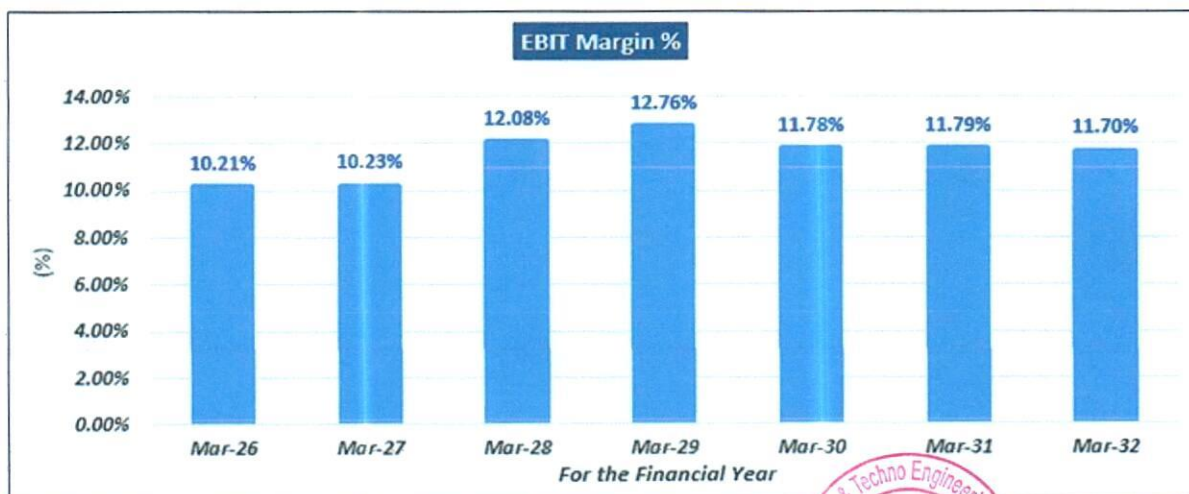




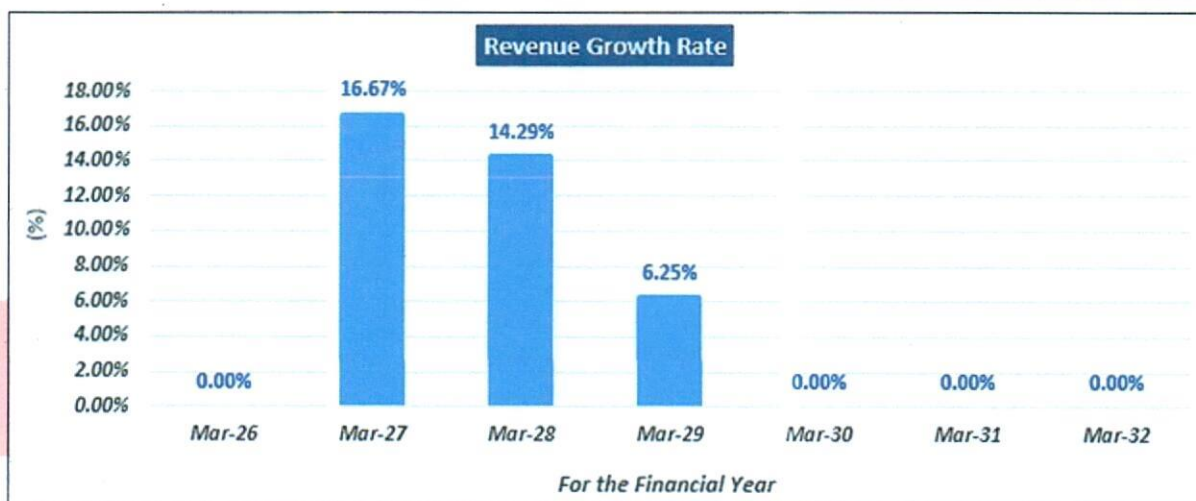
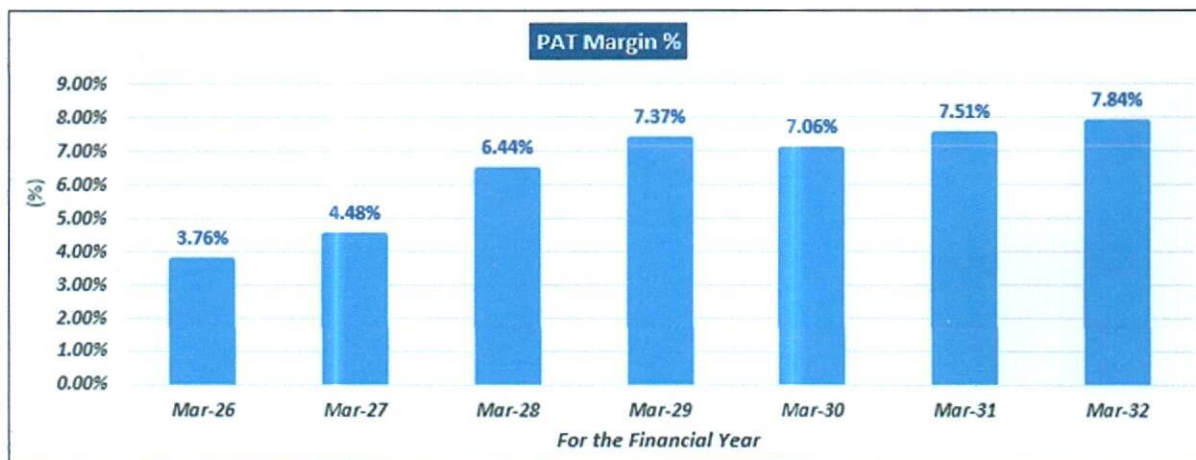
EBIT	441.89	516.60	697.14	782.28	722.63	722.99	717.46
PAT	162.94	226.25	371.54	452.30	432.89	460.86	480.87
Current Ratio	1.75	2.15	2.52	2.81	3.16	3.77	6.84
EBITDA Margin %	19.71%	17.18%	17.27%	16.93%	15.35%	14.84%	14.31%
EBIT Margin %	10.21%	10.23%	12.08%	12.76%	11.78%	11.79%	11.70%
PAT Margin %	3.76%	4.48%	6.44%	7.37%	7.06%	7.51%	7.84%
Revenue Growth Rate	0.00%	16.67%	14.29%	6.25%	0.00%	0.00%	0.00%

**Note:** EBITDA Margins, EBIT Margins and Net profit margins are positive during the estimated period. Net profit margins have increased from 3.76% in FY 2026 to 7.84% in FY 2032. Revenue growth rate is constant post FY 2029 due to uniform capacity utilization during the forecasted period.

#### D. GRAPHICAL REPRESENTATION OF KEY RATIOS:







#### E. REVENUE BUILD-UP:

KEY INPUT CONSIDERED						
Particulars	Ferro Silicon	Silicon Manganese	Ferro Chrome	Ferro Manganese	Pig Iron	Calcium Carbide
Product Mix	50%	10%	10%	10%	10%	10%
Capacity MT/Hour	0.63	0.25	0.25	0.43	0.45	0.25
Running Hrs. (Production)	12.00	12.00	12.00	12.00	12.00	12.00
Prod's per day in (MT)	7.50	3.00	3.00	5.10	5.40	3.00
No. of days/month	25.00	25.00	25.00	25.00	25.00	25.00
No. of days/in year	300.00	300.00	300.00	300.00	300.00	300.00
Production Capacity in Year	2250.00	900.00	900.00	1530.00	1620.00	900.00



Total Production Capacity	2250.00	900.00	900.00	1530.00	1620.00	900.00
Total Production Capacity	8100.00 MTPA					

AT 100% Capacity	Ferro Silicon	Silicon Manganese	Ferro Chrome	Ferro Manganese	Pig Iron	Calcium Carbide
Total Production In Year	2250.00	900.00	900.00	1530.00	1620.00	900.00
Average Rate Per Mt (In Rs.)	135000.00	82000.00	110000.0	84000.00	43000.00	52000.00
Projected Sales Per Year (In Lacs)	3037.50	738.00	990.00	1285.20	696.60	468.00
Total Projected Sales	INR 7215.30 Lakhs					

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
Capacity	60%	70.0%	80.0%	85%	85%	85%	85%
Revenue @100%	7215.3	7215.3	7215.3	7215.3	7215.3	7215.3	7215.3
Total Revenue @ Capacity Utilization	4329.18	5050.71	5772.24	6133.01	6133.01	6133.01	6133.01

## F. ESTIMATED KEY FINANCIAL METRICS:

### DEBT SERVICE COVERAGE RATIO (DSCR)

PARTICULARS	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Funds Available For Servicing Debts:</b>							
Net Profit After Tax	162.94	226.25	371.54	452.30	432.89	460.86	480.87
Depreciation+ Prel. Exp. Written off	413.76	353.62	302.34	258.61	221.32	187.11	159.96
Interest on Mach. T/L	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (A)</b>	<b>790.44</b>	<b>780.61</b>	<b>853.88</b>	<b>864.17</b>	<b>774.71</b>	<b>732.47</b>	<b>692.08</b>
<b>Debts To Be Serviced:</b>							
REPAYMENT OF MACH. T/L	60.00	180.00	240.00	300.00	360.00	360.00	300.00
Interest on new	178.75	165.75	145.00	118.25	85.50	49.50	16.25



term loan							
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (B)</b>	<b>273.75</b>	<b>380.75</b>	<b>420.00</b>	<b>453.25</b>	<b>480.50</b>	<b>444.50</b>	<b>351.25</b>
<b>D.S.C.R. (A/B)</b>	<b>2.89</b>	<b>2.05</b>	<b>2.03</b>	<b>1.91</b>	<b>1.61</b>	<b>1.65</b>	<b>1.97</b>
<b>AVERAGE D.S.C.R</b>	<b>2.02</b>						

## G. SENSITIVITY ANALYSIS OF DSCR:

### DSCR IF REVENUE DECREASED BY 10%

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Funds Available For Servicing Debts:</b>							
Net Profit After Tax	-128.00	-112.85	-15.99	40.58	25.50	53.60	73.60
Depreciation + Prel. Exp. Written Off	413.76	353.62	302.34	258.61	221.32	187.11	159.96
Interest On Mach. T/L	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Interest On Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>Total (A)</b>	<b>499.50</b>	<b>441.51</b>	<b>466.34</b>	<b>452.44</b>	<b>367.32</b>	<b>325.20</b>	<b>284.82</b>
<b>Debts To Be Serviced:</b>							
Repayment Of Mach. T/L	60.00	180.00	240.00	300.00	360.00	360.00	300.00
Interest On New Term Loan	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Interest On Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>Total (B)</b>	<b>273.75</b>	<b>380.75</b>	<b>420.00</b>	<b>453.25</b>	<b>480.50</b>	<b>444.50</b>	<b>351.25</b>
<b>D.S.C.R. (A/B)</b>	<b>1.82</b>	<b>1.16</b>	<b>1.11</b>	<b>1.00</b>	<b>0.76</b>	<b>0.73</b>	<b>0.81</b>
<b>Average D.S.C.R</b>	<b>1.06</b>						

### DSCR IF COST OF RAW MATERIAL INCREASED BY 10%

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
<b>Funds Available For Servicing Debts:</b>							
Net Profit After Tax	17.20	49.80	169.67	237.21	217.25	245.22	265.22
Depreciation+ Prel. Exp. Written off	413.76	353.62	302.34	258.61	221.32	187.11	159.96



Interest on Mach. T/L	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (A)</b>	<b>644.71</b>	<b>604.17</b>	<b>652.01</b>	<b>649.07</b>	<b>559.07</b>	<b>516.83</b>	<b>476.44</b>
<b>Debts To Be Serviced:</b>							
Repayment OF MACH. T/L	60.00	180.00	240.00	300.00	360.00	360.00	300.00
Interest on new term loan	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (B)</b>	<b>273.75</b>	<b>380.75</b>	<b>420.00</b>	<b>453.25</b>	<b>480.50</b>	<b>444.50</b>	<b>351.25</b>
<b>D.S.C.R. (A/B)</b>	<b>2.36</b>	<b>1.59</b>	<b>1.55</b>	<b>1.43</b>	<b>1.16</b>	<b>1.16</b>	<b>1.36</b>
<b>Average D.S.C.R</b>	<b>1.52</b>						

**DSCR IF TERM LOAN'S INTEREST RATE INCREASED BY 2%**

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
Net Profit After Tax	134.82	200.28	348.87	433.75	419.28	452.63	477.59
Depreciation+ Prel. Exp. Written off	417.04	356.42	304.74	260.66	223.07	188.60	161.24
Interest on Mach. T/L	214.50	198.90	174.00	141.90	102.60	59.40	19.50
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (A)</b>	<b>801.37</b>	<b>790.60</b>	<b>862.60</b>	<b>871.31</b>	<b>779.95</b>	<b>735.63</b>	<b>693.34</b>
Repayment OF MACH. T/L	60.00	180.00	240.00	300.00	360.00	360.00	300.00
Interest on new term loan	214.50	198.90	174.00	141.90	102.60	59.40	19.50
Interest on Working Capital	35.00	35.00	35.00	35.00	35.00	35.00	35.00
<b>TOTAL (B)</b>	<b>309.50</b>	<b>413.90</b>	<b>449.00</b>	<b>476.90</b>	<b>497.60</b>	<b>454.40</b>	<b>354.50</b>
<b>D.S.C.R. (A/B)</b>	<b>2.59</b>	<b>1.91</b>	<b>1.92</b>	<b>1.83</b>	<b>1.57</b>	<b>1.62</b>	<b>1.96</b>
<b>Average DSCR</b>	<b>1.91</b>						

**H. NPV, IRR AND PAYBACK PERIOD OF THE PROJECT:**

Calculation of NPV& IRR									
Particulars	Mar-24	Mar-25	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
EBIT	0.00	0.00	441.89	516.60	697.14	782.28	722.63	722.99	717.46



NOPAT	0.00	0.00	318.96	372.88	503.19	564.65	521.60	521.85	517.86
Depreciation	0.00	0.00	411.36	351.22	299.94	256.21	218.92	187.11	159.96
CAPEX	302.50	2621.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Investment in WC	0.00	0.00	772.78	125.95	125.48	62.70	1.45	-0.05	0.15
<b>FCFF</b>	<b>-302.50</b>	<b>-2621.0</b>	<b>-42.47</b>	<b>598.15</b>	<b>677.65</b>	<b>758.17</b>	<b>739.07</b>	<b>709.01</b>	<b>677.67</b>
<b>IRR</b>	<b>10.79%</b>								
<b>Discount rate</b>	<b>12% Nifty 50 Returns (CAGR) in the Last 10 Years</b>								
<b>Growth rate</b>	<b>1% (Expected Terminal Growth Rate)</b>								
Period	0	1	2	3	4	5	6	7	8
Discount Factor	1.00	0.89	0.80	0.71	0.64	0.57	0.51	0.45	0.40
PV of FCF	-302.50	-2340.2	-33.86	425.75	430.66	430.20	374.44	320.72	273.70
Terminal Value									6222.2
PV of TV									2513.0
<b>PV (FCFF+TV)</b>	<b>-302.50</b>	<b>-2340.2</b>	<b>-33.86</b>	<b>425.75</b>	<b>430.66</b>	<b>430.20</b>	<b>374.44</b>	<b>320.72</b>	<b>2786.7</b>
<b>NPV</b>	<b>INR 2091.96 Lakhs</b>								

Payback Period of the Project		
Year	Cash Accrual	Accumulated Cash Accrual
Mar-26	576.69	576.69
Mar-27	579.86	1156.55
Mar-28	673.88	1830.43
Mar-29	710.92	2541.34
Mar-30	654.21	3195.55
Mar-31	647.97	3843.52
Mar-32	640.83	4484.35
<b>Total</b>	<b>4484.35</b>	
<b>Total Project Cost</b>	<b>INR 3099.90 Lakhs</b>	
<b>Payback Period</b>	<b>4.15 Years</b>	

Thus, the project will be having a payback period of **4.15 years** and NPV & IRR of the project as on COD will **INR 2091.96 Lakhs** & **10.79%** respectively, which indicates worthiness of the project.

#### I. BREAK-EVEN (SALES) ANALYSIS:

Particulars	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
-------------	--------	--------	--------	--------	--------	--------	--------



<b>Sales Receipts</b>	<b>4,329.18</b>	<b>5,050.71</b>	<b>5,772.24</b>	<b>6,133.01</b>	<b>6,133.01</b>	<b>6,133.01</b>	<b>6,133.0</b>
<b>Variable Costs:</b>							
Raw Material	2,067.52	2,412.11	2,756.70	2,928.99	2,928.99	2,928.99	2,928.99
Other Spares	127.93	149.26	170.58	181.24	181.24	181.24	181.24
Power & Fuel	1,002.36	1,170.08	1,338.00	1,422.43	1,423.25	1,424.06	1,424.89
Interest On CC	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Direct Wages	199.06	218.96	240.86	264.94	291.44	320.58	352.64
Sales Expenses@ 60%	77.93	90.91	103.90	110.39	110.39	110.39	110.39
Other Manf. Exp.	86.58	101.01	115.44	122.66	183.99	183.99	183.99
Change In Inventory	-137.40	-20.05	-19.58	-9.75	-1.45	0.05	-0.15
<b>Total Variable Costs</b>	<b>3,458.99</b>	<b>4,157.29</b>	<b>4,740.90</b>	<b>5,055.92</b>	<b>5,152.85</b>	<b>5,184.31</b>	<b>5,216.9</b>
<b>Surplus (A-B)</b>	<b>870.19</b>	<b>893.42</b>	<b>1,031.34</b>	<b>1,077.09</b>	<b>980.15</b>	<b>948.69</b>	<b>916.02</b>
<b>Fixed Costs:</b>							
Intt. On Term Loan	178.75	165.75	145.00	118.25	85.50	49.50	16.25
Intt. On Cc	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Depreciation	411.36	351.22	299.94	256.21	218.92	187.11	159.96
Sales Expenses @40%	51.95	60.61	69.27	73.60	73.60	73.60	73.60
<b>Total Of Fixed Costs</b>	<b>677.06</b>	<b>612.57</b>	<b>549.21</b>	<b>483.06</b>	<b>413.02</b>	<b>345.20</b>	<b>284.81</b>
<b>Break Even Point At Utilized Capacity</b>	<b>77.81%</b>	<b>68.57%</b>	<b>53.25%</b>	<b>44.85%</b>	<b>42.14%</b>	<b>36.39%</b>	<b>31.09%</b>
<b>Cash Break Even Point</b>	<b>34.12%</b>	<b>33.32%</b>	<b>28.20%</b>	<b>25.16%</b>	<b>24.31%</b>	<b>21.32%</b>	<b>18.45%</b>

#### J. TERM LOAN INPUTS:

Term Loan Repayment Inputs	
Amount of Term Loan	1,800.00
Rate of Interest	10.00%
SCOD (Scheduled Commercial Operation Date)	Apr-25
Disbursal Start Date	Mar-24
Repayment Start Date	Oct-25
Repayment Period (Years)	7
Total Monthly Instalments	78
Moratorium from first drawl (Months)	18
Moratorium Period (Excluding disbursement period) Months	6
Door to Door Tenure (Months)	84
Number of Months a year	12



## K. WORKING CAPITAL REQUIREMENT:

Particular	Mar-26	Mar-27	Mar-28	Mar-29	Mar-30	Mar-31	Mar-32
Net Working Capital	772.78	898.73	1,024.21	1,086.91	1,088.35	1,088.30	1,088.45
Working Capital Margin	193.20	224.68	256.05	271.73	272.09	272.08	272.11
Working Capital Loan Requirement	579.59	674.05	768.16	815.18	816.26	816.23	816.34
<b>Working Capital approved by bank</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>	<b>350.00</b>

## 2. KEY ASSUMPTIONS & BASIS:

S. No.	Item	Assumptions and Basis
1.	General	<p>a. The projections of the firm are done for the period from FY 2026 to FY 2032, 7 years, to cover the term loan period as per the industry best practices. It is assumed that the plant will be achieving COD on 31<sup>st</sup> March 2025.</p> <p>b. We have considered both Revenue &amp; cost based model (top to bottom approach) while making the future financial projections.</p> <p>c. Revenue and expense modelling has been done based on the capacity utilization during the respective year except for the raw material which is considered based on raw material ratio and its price in the market.</p>
2.	Revenue Build up	<p>a. Total income for the financial years during the forecasted period will be generating from selling of Ferro Silicon, Silico Manganese, Ferro Chrome, Ferro Manganese, Pig Iron, and Calcium Carbide (Product Mix: 50:10:10:10:10:10)</p> <p>b. The plant is assumed to be operational for 300 days for 24 hours (12 Production hours) annually as per industry practice.</p> <p>c. Below table shows the Revenue of the company @100% capacity utilization:</p>



		<table><tr><th colspan="4">Production @100% Capacity</th></tr><tr><th>Products</th><th>Price /MT</th><th>Annual Quantity MT</th><th>Amount (INR Lakhs)</th></tr><tr><td>Ferro Silicon</td><td>135000</td><td>2250</td><td>3075.50</td></tr><tr><td>Silico Manganese</td><td>82000</td><td>900</td><td>738</td></tr><tr><td>Ferro Chrome</td><td>110000</td><td>900</td><td>990</td></tr><tr><td>Ferro Manganese</td><td>84000</td><td>1530</td><td>1285.20</td></tr><tr><td>Pig Iron</td><td>43000</td><td>1620</td><td>696.60</td></tr><tr><td>Calcium Carbide</td><td>52000</td><td>900</td><td>468.00</td></tr><tr><td>Total</td><td></td><td>8100 MT</td><td>INR 7215.30 Lakhs</td></tr></table>	Production @100% Capacity				Products	Price /MT	Annual Quantity MT	Amount (INR Lakhs)	Ferro Silicon	135000	2250	3075.50	Silico Manganese	82000	900	738	Ferro Chrome	110000	900	990	Ferro Manganese	84000	1530	1285.20	Pig Iron	43000	1620	696.60	Calcium Carbide	52000	900	468.00	Total		8100 MT	INR 7215.30 Lakhs
Production @100% Capacity																																						
Products	Price /MT	Annual Quantity MT	Amount (INR Lakhs)																																			
Ferro Silicon	135000	2250	3075.50																																			
Silico Manganese	82000	900	738																																			
Ferro Chrome	110000	900	990																																			
Ferro Manganese	84000	1530	1285.20																																			
Pig Iron	43000	1620	696.60																																			
Calcium Carbide	52000	900	468.00																																			
Total		8100 MT	INR 7215.30 Lakhs																																			
		<p>d. Thus the company is expected to generate INR 4329.18 Lakhs (@ 60% Capacity Utilization) in the initial year. Further it is expected to increase up to INR 6885.00 Lakhs till FY 2032.</p> <p>e. Based on the forecasting, the company is achieving an average revenue growth rate of ~6% Y-o-Y basis which is also in line to current industrial &amp; economic trends.</p>																																				
3.	Pricing (Average Price Per Unit)	<p>a. Prices of the Ferro Alloys has been considered on the basis of average of price trends of last 12 months as shown in the below table:</p> <table><tr><th>Products</th><th>Unit prices (INR Per MT)</th></tr><tr><td>Ferro Silicon</td><td>135000</td></tr><tr><td>Silico Manganese</td><td>82000</td></tr><tr><td>Ferro Chrome</td><td>110000</td></tr><tr><td>Ferro Manganese</td><td>84000</td></tr><tr><td>Pig Iron</td><td>43000</td></tr><tr><td>Calcium Carbide</td><td>52000</td></tr></table> <p>b. As per our tertiary research and data/information available in the public domain, we found that the price of Ferro Silicon ranges from INR 1,10,000 to 2,00,000 per MT in the market. Similarly Ferro</p>	Products	Unit prices (INR Per MT)	Ferro Silicon	135000	Silico Manganese	82000	Ferro Chrome	110000	Ferro Manganese	84000	Pig Iron	43000	Calcium Carbide	52000																						
Products	Unit prices (INR Per MT)																																					
Ferro Silicon	135000																																					
Silico Manganese	82000																																					
Ferro Chrome	110000																																					
Ferro Manganese	84000																																					
Pig Iron	43000																																					
Calcium Carbide	52000																																					



		<p>Chrome ranges from INR 81,000 to 2, 65,000 per MT depending on the low or high carbon. Pig Iron ranges from INR 40,000 to 90,000 per MT depending on specification.</p> <p>c. However the price of the Ferro Alloys is volatile with respect to the various market factors such as Demand &amp; Supply, Specification, Raw Material Cost Variances and Other Production Costs.</p> <p>d. Thus, justifiably average price has been considered during the forecasted periods considering the micro and macro-economic factors as per the facts came in front of us during the course of assignment, which is reasonable and on conservative side.</p>
4.	<b>Capacity Utilization</b>	<p>a. The proposed manufacturing unit will be installed with a Design capacity of 8100 MT Per Annum (27 MT/Day), which is assumed to be operating at 60%, 70%, 80% and 85% in the upcoming years starting from COD.</p> <p>b. We have considered the capacity utilisation at constant at 85% from FY 2029 onwards.</p> <p>c. As per information data/information provided by the client, they are selling ~15500 MT per annum of Ferro Alloys through their existing trading business. Now, promoters have decided to manufacture these Ferro at their own proposed manufacturing facility.</p> <p>d. Thus to start the capacity utilization from 60% i.e. ~5000-6000 MT is reasonable and on conservative side to keep a mark-up for operation settling down period, future market &amp; economic risks in the Project.</p>
5.	<b>Capital Expenditure</b>	<p>a. As per the lease deed provided by the client, 8 Kanal (43,203 Sq. Ft.) land for the proposed manufacturing facility has been taken at SIDCO Industrial Area Centre IGC Samba, Phase-I, Jammu &amp; Kashmir, 184121. The total cost of the land is ~INR 77 Lakhs including INR 7</p>





		<p>Lakhs for land development work.</p> <p>b. As per our calculation the cost of Building &amp; Civil work may vary from Rs.2.8 crores to Rs.3.2 crores, further depending upon the quality of construction and other factors as finalised with the contractor, the range variation is mainly due to the unavailability of BOQ and estimate to determine the quality/specification of material to be used which is yet to be finalized.</p> <p>c. Thus for the purpose of the projections, Building &amp; Civil work is assumed at ~INR 300.00 Lakhs including boundary wall, Road Work and other civil construction work &amp; 1% of architect fees. As per the sanctioned map prepared by Architect Arun Kumar &amp; Associates, total Built-up area (Shed) would be 16733.72 Sq. Ft. including covered shed area (16,055 Sq. Ft.) and Security Room (678.72 Sq. ft.).</p> <p>d. As per the quotations shared by the client, overall Plant &amp; Machinery will be costing INR 2158.11 Lakhs including 18% GST and 12% travelling &amp; other expenses. ADS Associates will be the consultant for commissioning the Submerged Electric Arc Furnace (AC) capacity of 6MVA.</p> <p>e. Capital expenditure also include miscellaneous fixed assets such as Furniture &amp; Fixture, Electricals including Panel and wiring, Firefighting Equipment/Fire Hydrant, Pollution Control, Laboratory Equipment cost around INR 274.68 lakhs. Thus the total project expenditure will INR 2994.29 Lakhs including preliminary and pre-operative expenses and IDC.</p> <p>f. As per our tertiary research and information given by various suppliers the cost of major machinery is found to be in range with the market trends as per limited technical details available at this point of time. However, the cost of such highly technical Plant &amp; Machinery can't be exact and may vary because of brand name,</p>
--	--	--





6.

Expenses

technical specification, capacity, passage of time and other factors.

a. As per data/information provided by the client/company, the present project will be using the following combination of Raw Materials as per Feed stock analysis and different grades & specification outputs required by the customers. Total Cost of the Raw Material @ 100% Capacity has been shown in the below table:

Raw Material	Quantity Per MT	Rate Per MT	Total Cost/MT	Amount INR Lakhs
<b>FERRO SILICON (2250 MT)</b>				
Quartz	1.80	2250	4050	
Mil Scale	0.40	7000	2800	
Charcoal	0.86	28000	24080	
LMC	0.32	23000	7360	
Miscellaneous	1.00	9334	9334	
<b>Total</b>			<b>47624.00</b>	<b>1071.54</b>
<b>Silicon Manganese (900 MT)</b>				
Mn Ore Moil 37	1.20	14000	16800	
Mn Ore JK 36	0.48	12500	6000	
Roungta 34	0.52	11000	5720	
Qaurtz	0.07	2100	147	
Steam Coal (45Fc)	0.55	9000	4950	
Peral Coke (59Fc)	0.40	19000	7600	
Miscellaneous	1.00	3632	3632	
<b>Total</b>			<b>44849</b>	<b>403.64</b>
<b>Ferro Chrome (900 MT)</b>				
Chrome Concentrate (50-52)	2.20	20000	44000	
Chrome Concentrate (40-44)	0.25	18000	4500	
LAM Coke	0.37	24000	8880	
Steam Coal	0.33	10000	3300	
Bauxite	0.02	5000	100	
Quartz	0.15	2100	315	
Miscellaneous	1.00	4066	4066	
<b>Total</b>			<b>65161</b>	<b>586.45</b>
<b>Ferro Manganese (1530 MT)</b>				
Mn Ore Moil 47	1.03	24000	24720	
Mn Ore Imp 44	1.03	22000	22660	



		Steam Coal (43Fc)	0.32	9000	2880	
		Peral Coke (58Fc)	0.38	19000	7220	
		Miscellaneous	1.00	3221	3221	
		<b>Total</b>			<b>60701</b>	<b>928.73</b>
		<b>Pig Iron (Pig Iron 1620 MT)</b>				
		Mill Scale	0.60	6200	3720	
		Iron Ore Fines (Fe55%)	1.05	3000	3150	
		Lime Stone	0.30	1000	300	
		Dolomite	0.20	1000	200	
		Quarts	0.12	2100	252	
		Steam Coal (42-45%)	0.40	9000	3600	
		Peral Coke	0.30	19000	5700	
		Miscellaneous	1.00	1547	1547	
		<b>Total</b>			<b>18469</b>	<b>299.20</b>
		<b>Calcium Carbide (900 MT)</b>				
		Lime	1.00	3000	3000	
		Charcoal	0.70	13500	9450	
		Miscellaneous	1.00	4919	4919	
		<b>Total</b>			<b>17369</b>	<b>156.32</b>
		<b>Grand Total</b>				<b>3445.87</b>

As per tertiary research done by us, we found that the prices of raw materials considered during the forecasted period are in the line with market trends, however the prices volatile with respect to various micro & macro conditions and variate with respect to the grades & specification in the market.

b. The Company has taken 6000 KVA power load connection from JPDCL. The estimated annual consumption of the power will be 5400 KVA @ 90% utilisation factor. As per information available on JK power corporation ltd website, the applicable per unit charges will INR 3.80 per Kwh i.e. INR 3800 Per MVA.

c. Company will be having 120 employees initially. A 10% fringe benefit and escalation of 10% has been taken on y-o-y basis during the forecasted period.

d. Other Manufacturing Expenses has been considered at 2% of the total sales.





**PART M**

**CONCLUSION**

Based on the technological, economical and market analysis done above, various assumptions of sectoral trends taken, product pricing to be adopted by the company, the Project appears to be Techno-commercially viable subject to the risks, threats, weaknesses, limitations of the product as detailed previously.

As per financial projections for the estimated period, **average DSCR, EBITDA Margin and EBIT Margin** of the project are **2.02, 16.51% and 11.51%** respectively, where higher DSCR is the indicator of the project capability to pay out its outstanding debt and EBITDA margin shows the capability of the project to generate the operating profits over the forecasted period. Also the project is having the payback period of **4.15 Years** in the line with sectoral trends.

The proposed Ferro Alloys manufacturing facility is having a positive **NPV and IRR** as **INR 2091.96 Lakhs and 10.79%** respectively as the industry is expectedly growing at a CAGR of ~5% during the forecasted period. While future projections may change in the upcoming years due to various socio-economic factors impacting the operation, managerial, financial efficiency and economies of scale of the project.

While it would be depending on the management's capability in future that how efficiently company adopts marketing and advertisement strategy, supply chain and carry out inventory & resource management to achieve higher profitability. After considering the foreseen demand of the Ferro Alloys domestically and globally, various initiatives taken by government, financial analysis of the project based on the assumptions taken over the projected period, it appears reasonable to comment that the proposed project is "**Technically and Economically**" Viable subject to the current factors & assumptions considered. However achieving these projections in the upcoming years is solely dependent on the sincerity and efforts of the management and various micro and macroeconomic & industry situation.

We have tried our level best to analyse the Project techno-economic feasibility of the Project based on the Industry research, Project information and various futuristic assumption taken within the limitations and challenges came in front of us. However achieving the financial milestones depends on the ability, sincerity and efforts of the company, promoters and its key management to maintain the projected revenue level Y-o-Y basis keeping the fact in mind that the project is found sensitive with respect to the down side fluctuation in the revenue.





<b>Declaration</b>	i. The undersigned does not have any direct/indirect interest in the above property.	
	ii. The information furnished herein is true and correct to the best of our knowledge, logical and scientific assumptions.	
	iii. This TEV Report is carried out by our Financial Analyst team on the request from PNB, MCC, Ghaziabad, 201002	
	iv. Meeting of Financial projections will be subject to subject to the market & economy stability factors, judicious business operations and proper & timely implementation of its process & product re-engineering & improvements plans for achieving high productivity, efficiency and achieving cost saving benefits.	
	v. We have submitted TEV report to the Client.	
<b>Name &amp; Address of consultant company</b>		<b>Signature of the authorized person</b>
M/s. R.K. Associates Valuer & Techno Engineering Consultants Pvt. Ltd. D-39, 2 <sup>nd</sup> Floor. Sector-2, Noida- 201301		
<b>Enclosed Documents</b>	Disclaimer & Remarks 76-79	
<b>Number of Pages in the Report</b>	82	
<b>Financial Analyst Team worked on the report</b>	<b>PREPARED BY: Mr. Gaurav Kumar</b>	
	<b>REVIEWED BY: Mr. Rachit Gupta</b>	

For R.K Associates Valuer & Techno

Place: Noida

Engineering Consultants (P) Ltd.

Date: 15/02/2024

(Authorized Signatory)





**PART N**

**DISCLAIMER | REMARKS**

1. No employee or member of R.K Associates has any direct/ indirect interest in the Project.
2. This report is prepared based on the copies of the documents/ information which the Bank/ Company has provided to us out of the standard checklist of documents sought from them and further based on our assumptions and limiting conditions. The client/owner and its management/representatives warranted to us that the information they supplied was complete, accurate and true and correct to the best of their knowledge. All such information provided to us has been relied upon in good faith and we have assumed that it is true and correct in all respect. I/We shall not be liable for any loss, damages, cost or expenses arising from fraudulent acts, misrepresentations, or wilful default on part of the owner, company, its directors, employee, representative or agents. Verification or cross checking of the documents provided to us from the originals or from any Govt. departments/ Record of Registrar has not been done at our end since this is beyond the scope of our work. If at any time in future, it is found or came to our knowledge that misrepresentation of facts or incomplete or distorted information has been provided to us then this report shall automatically become null & void.
3. Legal aspects for e.g. investigation of title, ownership rights, lien, charge, mortgage, lease, sanctioned maps, verification of documents, etc. have not been done at our end and same has to be taken care by legal expert/ Advocate. It is assumed that the concerned Lender/ Financial Institution has satisfied them with the authenticity of the documents, information given to us and for which the legal verification has been already taken and cleared by the competent Advocate before requesting for this report. I/ We assume no responsibility for the legal matters including, but not limited to, legal or title concerns.
4. This report is a general analysis of the project based on the scope mentioned in the report. This is not an Audit report, Design document, DPR or Techno feasibility study. All the information gathered is based on the facts seen on the site during survey, verbal discussion & documentary evidence provided by the client and is believed that information given by the company is true best of their knowledge.
5. This Techno Economic-Viability study is prepared based on certain futuristic assumption which are intra dependent on economic, market and sectorial growth condition in future and socio-economic, socio-political condition at macro and micro level.



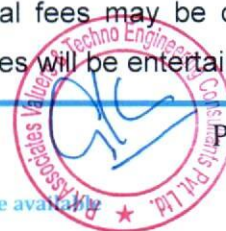


6. Meeting of assumption and financial ratio will entirely depend on the sincerity and efforts of the company, promoters and its key managerial performance.
7. All observations mentioned in the report is only based on the visual observation and the documents/ data/ information provided by the client. No mechanical/ technical tests, measurements or any design review have been performed or carried out from our side during Project assessment.
8. This report has been diligently prepared by our techno-financial team to the best of their ability. However, it is important to note that the recommendations provided in this Techno Economic Viability (TEV) assessment do not imply an endorsement, validation, or certification of the accuracy or completeness of the disclosed information by the involved stakeholders. Furthermore, we do not claim or endorse that the opinions presented herein are the sole best course of action for decision-makers to follow. There may exist additional approaches and inputs that have not been covered within this report or fall outside the scope of this report.
9. Bank/FII should **ONLY** take this report as an Advisory document from the Financial/ Chartered Engineering firm and its specifically advised to the creditor to cross verifies the original documents for the facts mentioned in the report which can be availed from the borrowing company directly.
10. In case of any default in loans or the credit facility extended to the borrowing company, R.K Associates shall not be held responsible for whatsoever reason may be and any request for seeking any explanation from the employee/s of R.K Associates will not be entertained at any instance or situation.
11. The documents, information, data provided to us during the course of this assessment by the client are reviewed only up to the extent required in relation to the scope of the work. No document has been reviewed beyond the scope of the work.
12. This report only contains general assessment & opinion as per the scope of work evaluated as per the information given in the copy of documents, information, data provided to us and/ and confirmed by the owner/ owner representative to us at site which has been relied upon in good faith. It doesn't contain any other recommendations of any sort including but not limited to express of any opinion on the suitability or otherwise of entering into any transaction with the borrower.





13. We have relied on data from third party, external sources & information available on public domain also to conclude this report. These sources are believed to be reliable and therefore, we assume no liability for the truth or accuracy of any data, opinions or estimates furnished by others that have been used in this analysis. Where we have relied on data, opinions or estimates from external sources, reasonable care has been taken to ensure that such data has been correctly extracted from those sources and /or reproduced in its proper form and context, however still we can't vouch its authenticity, correctness or accuracy.
14. This Report is prepared by our competent technical team which includes Engineers and financial experts & analysts.
15. This is just an opinion report and doesn't hold any binding on anyone. It is requested from the concerned Financial Institution which is using this report for taking financial decision on the project that they should consider all the different associated relevant & related factors also before taking any business decision based on the content of this report.
16. All Pages of the report including annexure are signed and stamped from our office. In case any paper in the report is without stamp & signature then this should not be considered a valid paper issued from this office.
17. Though adequate care has been taken while preparing this report as per its scope, but still we can't rule out typing, human errors, over sightedness of any information or any other mistakes. Therefore, the concerned organization is advised to satisfy themselves that the report is complete & satisfactory in all respect. Intimation regarding any discrepancy shall be brought into our notice immediately. If no intimation is received within **15 (Fifteen) days** in writing from the date of issuance of the report, to rectify these timely, then it shall be considered that the report is complete in all respect and has been accepted by the client up to their satisfaction & use and further to which R.K Associates shall not be held responsible in any manner.
18. Defect Liability Period is **15 DAYS**. We request the concerned authorized reader of this report to check the contents, data and calculations in the report within this period and intimate us in writing if any corrections are required or in case of any other concern with the contents or opinion mentioned in the report. Corrections only related to typographical, calculation, spelling mistakes, incorrect data/ figures/ statement will be entertained within the defect liability period. Any new changes for any additional information in already approved report will be regarded as additional work for which additional fees may be charged. No request for any illegitimate change in regard to any facts & figures will be entertained.





19. R.K Associates encourages its customers to give feedback or inform concerns over its services through proper channel at [valuers@rkassociates.org](mailto:valuers@rkassociates.org) in writing within **15 days** of report delivery. After this period no concern/ complaint/ proceedings in connection with the Techno- Economic Viability Study Services will be entertained due to possible change in situation and condition of the subject Project.
20. Our Data retention policy is of **ONE YEAR**. After this period, we remove all the concerned records related to the assignment from our repository. No clarification or query can be answered after this period due to unavailability of the data.
21. This Techno Economic Viability Study report is governed by our (1) Internal Policies, Processes & Standard Operating Procedures, (2) Information/ Data/ Inputs given to us by the client and (3) Information/ Data/ Facts given to us by our field/ office technical team. Management of R.K Associates never gives acceptance to any unethical or unprofessional practice which may affect fair, correct & impartial assessment and which is against any prevailing law. In case of any indication of any negligence, default, incorrect, misleading, misrepresentation or distortion of facts in the report then it is the responsibility of the user of this report to immediately or at least within the defect liability period bring all such act into notice of R.K Associates management so that corrective measures can be taken instantly.
22. R.K Associates never releases any report doing alterations or modifications from pen. In case any information/ figure of this report is found altered with pen then this report will automatically become **null & void**.
23. If this report is prepared for the matter under litigation in any Indian court, no official or employee of R.K Associates will be under any obligation to give in person appearance in the court as a testimony. For any explanation or clarification, only written reply can be submitted on payment of charges by the plaintiff or respondent which will be 10% of the original fees charged where minimum charges will be Rs. 15,000/.







**J&K Pollution Control Committee**  
Jammu/Kashmir (www.jkspcb.nic.in)

**Consent Order**

Consent No.:- PCC/digital/23013798321 of 2023

Date:- 28/07/2023

Consent To Establish ( Fresh ) under Section 25/26 of the Water(Prevention & Control Pollution)Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended is granted in favour of

Sh. RAKESH KUMAR MODI  
M/s SHREE MAA CHINTPURNI FERRO ALLOYS  
PRIVATE LIMITED  
PHASE I, IGC SAMBA, Samba, 184121  
Samba South, Samba( registered with DIC vide  
registration No:  
01ABHCS4736J1ZB date: 01/05/2023 )

for a period July 2024 for ORANGE category of unit as per revised classification of industrial sector, subject to the following terms and conditions in a time bound manner :

1. The consent granted by the Committee is restricted to Prevention and Control of Pollution only and shall not be treated as substitute of permission required under other laws of the land.
2. The consent is granted valid for the establishment of unit for manufacturing of the products / by-products consented quantity as mentioned below with capital investment of Rs.1515.0 lakhs:

S No.	Products/BY-Products Name	Maximum Quantity	Unit
1	MFG OF FERRO SILICON & CALCIUM CARBIDE	4500	Metric Tonnes/Year

Any change / enhancement in production capacity, process, raw materials etc shall have to be intimated to the Committee and the unit holder has to apply afresh for the same

**GOVERNMENT OF JAMMU AND KASHMIR**

**OFFICE OF THE GENERAL MANAGER DISTRICT INDUSTRIES CENTRE SAMBA**  
(Phone/Fax No. 01923-243329)

**ACKNOWLEDGEMENT- PART-I**

M/S SHREE MAA CHINTPURNI FERRO ALLOYS PRIVATE LIMITED HAS FILED PART-I OF ENTREPRENEUR'S MEMORANDUM EXPRESSING ITS INTENT TO SET UP A MEDIUM MANUFACTURING ENTERPRISE AT THE ADDRESS IGC PHASE-I,SAMBA FOR THE ITEM/ITEMS INDICATED BELOW AND THE ACTIVITY PROPOSED TO COMMENCE FROM THE (DATE) 01.05..2024 AS STATED AND ALLOCATED ENTREPRENEUR'S MEMORANDUM NO. AS BELOW: DETAILS OF ITEMS TO BE MANUFACTURED/ SERVICE TO BE PROVIDED.

S.NO.	Items of Manufacture/ type of services to be rendered	Capacity in case of Manufacture
1.	MANUFACTURING OF FERRO SILICON AND CALCIUM CARBIDE ONLY.	(AS PER PROJECT REPORT)

NOTE: THE ISSUE OF THIS ACKNOWLEDGEMENT DOES NOT BESTOW ANY LEGAL RIGHT. THE ENTERPRISE IS REQUIRED TO SEEK REQUISITE CLEARANCE/LICENSE/ PERMIT REQUIRED UNDER STATUTORY OBLIGATION STIPULATED UNDER THE LAWS OF CENTRAL GOVT./STATE GOVT./UT ADMINISTRATIONS/COURT ORDERS.

DATE OF ISSUE

0 8 0 5 2 0 2 3

NATURE OF ACTIVITY

(MANUFACTURING - 1, SERVICES - 2)

CATEGORY OF ENTERPRISE

1





Office of the Chief Engineer (Distribution),  
Jammu Power Distribution Corporation Ltd.  
Canal Power House, Canal Road, Jammu  
Email: [cedistributionjpdcl@gmail.com](mailto:cedistributionjpdcl@gmail.com)

Telephone Nos: 0191 - 2554426, Fax: 0191 - 2505708

**Sub: Sanction of 6000KVA power load connection in favour of M/s Shree Maa Chintpurni Ferro Alloys Pvt. Ltd. at IGC Phase-I, Samba.**

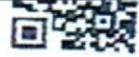
**Ref: i) Minutes of Meeting held on 22-08-2023 and circulated by the office of Managing Director JPDCL Jammu vide No.:MD/JPDCL/TS/1257-61, dated:29-08-2023.**

**Office Order No. CEJ/TS/145 of 2023.**  
**Dated: - 30/08/2023.**

As decided in the Power Sanction Committee Meeting held on 22-08-2023 and minutes circulated by Managing Director JPDCL Jammu's No.: MD/JPDCL/TS/1257-61, dated:29-08-2023, alongwith authorization issued in favour of the undersigned by Managing Director JPDCL Jammu in the said MoM, sanction is hereby accorded for 6000KVA power load connection in favour of M/s Shree Maa Chintpurni Ferro Alloys Pvt. Ltd. at IGC Phase-I, Samba, subject to fulfillment of the following conditions: -

- 1. The applied load shall be accommodated at 66KV level through 66KV IGC-I Samba Line emanating from 2X50MVA, 132/66KV Grid Station Samba-I, subject to the creation of consumer's new dedicated 66/11/0.4KV, 8MVA Sub-Station and creation of 66Kv tap line alongwith its HT/LT network. The cost of all the required infrastructure to be created/added at Sub Transmission & Distribution levels alongwith allied works, shall be borne entirely by the consumer.*
- 2. Any other addition, alteration, creation etc. of the electrical infrastructure necessitated in the electrical networks in order to feed power to the consumers shall be at the cost of consumers.*
- 3. The procurement/purchase of Tri-vector energy meter, shall be the responsibility of consumer. The meter shall be DLMS compliant and shall be of ABB, Secure or L&T make and have provision for record of load survey data and time of day (T.O.D) tariff facility & other specifications in vogue along with sealable Kiosks of approved design for housing of C.T/P.T meters at the Sub-Stations as per the specifications to be provided by the Chief Engineer (Distribution), JPDCL and the connection shall not be physically released until the meter is installed and sealed by the department.*





**Pre Registration Summary**

Date :- 17-04-2023 02:40 pm

Office Name :- SRO Samba  
Token No:- 202300026724

Appointment :- 17-Apr-2023 Time:- 14:0

Consideration	₹11,32,800
Market Value	₹1,10,88,000
Document Execution Date	15-Apr-2023
No. of Pages	11
Total Stamp Fee	₹ 0
Total Registration Duty	₹ 0

Property Id: 259744

Village Name	Bela Samba, Samba, Samba
Property Attributes	Plot/Flat Number: Phase-I-SIDCO IGC Samba
Property Description	Land area : 8.00 Kanal
Area	8.00 Kanal

Vendor/ Landlord/ Mortgage/ Lessor	<b>Organization Name:</b> The J and K State Industrial Development Corporation Limited, <b>Branch Name-</b> The J and K SIDCO Samba through its Manager Estates by authorized representative Sh Jagjeet Singh Asstt Manager
Vendee/ Tenant/ Mortgagee/ Lessee	<b>Organization Name:</b> MS Shree Maa Chintpurni Ferro Alloys Private Limited, <b>Branch Name-</b> MS Shree Maa Chintpurni Ferro Alloys Pvt Ltd through its Directors Sh Rakesh Kumar Modi SO Sh Om Prakash Modi RO Patel Nagar II Ghaziabad U P and Sh Ramanand Modi SO Sh Om Prakash Modi RO Kavi Nagar Ghaziabad U P

