



# **Ferro Vanadium Production Business.**

**Ferrovanadium Market is expected to  
Expand at a CAGR of 5.0% between 2018  
and 2028.**

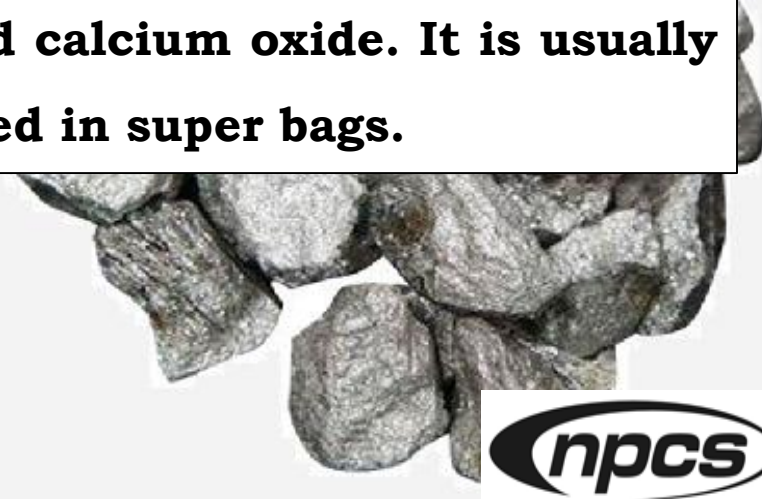
**Ferro Alloys Industry**

# **Introduction**

**Ferro Vanadium is an alloy which is formed by combining iron and vanadium with a vanadium content range of 35%-85%. Ferro Vanadium is a universal hardener, strengthener and anti-corrosive additive for steels like high-strength low-alloy (HSLA) steel, tool steels, as well as other ferrous-based products.**

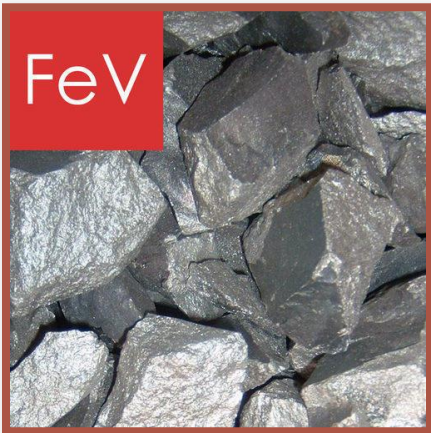
**Ferro vanadium belongs to the category of ferroalloy. Ferro vanadium is an alloy which is formed by combining iron and vanadium. Ferrovanadium contains 35% to 85% of vanadium depending on applications of the product in end-use industry. Ferro vanadium is an alloy material that is used in manufacturing of steel. It imparts desirable properties such as abrasion resistance, high temperature and hardenability.**

**Ferro vanadium used for manufacturing of steel offers the end product with high stability against alkalis as well as acids such as sulphuric and hydrochloric acids. In addition, products containing ferro vanadium are at reduced risk to be susceptible to corrosion. Ferro vanadium also helps in reducing the overall weight of the material as well as increasing the overall tensile strength of the end product. In addition, it helps in promoting fine grain size and increasing hardenability through precipitation of nitrides and carbides. Ferro vanadium is manufactured using an electric arc furnace in which scrap iron is melted initially and then it is combined with the mixture of aluminum as well as flux such as calcium fluoride and calcium oxide. It is usually supplied in pallet boxes or in shrink wrapped in super bags.**



**Ferro Vanadium is produced from Vanadium Sludge & usually available in the range with V: 50-85%. Ferro Vanadium acts as universal hardener, strengthener and anti-corrosive additive for steels like high-strength low-alloy (HSLA) steel, tool steels, as well as other ferrous-based products. Origin of Ferro Vanadium is mainly India and China.**

**Vanadium is applied for alloying titanium, niobium, and chromium-based alloys widely used in aviation, rocket and space engineering. Pure metallic vanadium is used in the nuclear industry and in the manufacture of electronic devices.**



**Ferrovandium increases hardenability and resistance to tempering. It is used to enhance toughness, resistance of steel to alternating loads. Ferrovandium is also used to obtain fine-grained structure of steel.**

**Ferro Vanadium was primarily recovered from titanium-bearing magnetite ore processed to produce pig iron. The process produces a slag containing 20% to 24% vanadium pentoxide, which can be further processed to ferrovandium containing 40% to 50% vanadium. 84% came from ferrovandium and nearly all of it (99%) went into steel manufacturing. The Ferro Vanadium is used as an alloying agent for the metals iron and steel and also aerospace.**





## **Application**

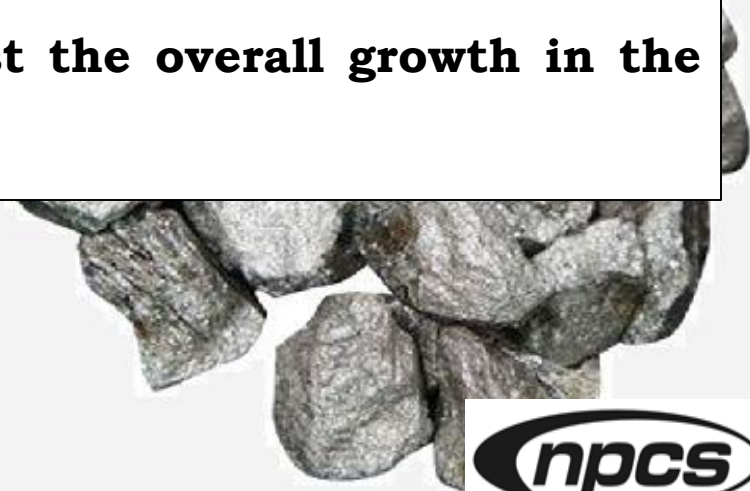
**The most important use of vanadium is as an additive for steel. It is used for the production of rust resistant, spring and high speed tool steels. It is also added to steels to stabilize carbides. Vanadium foil is also used to bond titanium to steel. Due to its low fission neutron cross section vanadium is also used in nuclear applications. The Ferro Vanadium is used as an alloying agent for the metals iron & steel and also aero.**

**Ferro Vanadium is used primarily as an alloying agent for iron and steel and, with the exception of the steel industry, the aerospace market is the primary user of the metal. It is found in deposits of titaniferous magnetite, phosphate rock and uraniferous sandstone and siltstone.**



**Significant amounts are also present in bauxite and carboniferous materials such as crude oil, coal, oil shale and tar sands. Vanadium is usually recovered as a by-product or co-product, and thus world resources of the element are not fully indicative of available supplies. Vanadium is also useful in the production of aerospace titanium alloys and as a catalyst in producing maleic anhydride and sulfuric acid.**

**Most of the ferro vanadium manufactured is utilized in the alloying process used to manufacture hardened steel. Hardened steel further finds application in the manufacturing of axles, bicycles frames, crankshafts and other highly critical steel components. Thus, the growing steel industry is expected to boost the overall growth in the demand for the ferro vanadium market.**



## **Market Outlook**

**The steel industry accounts for around 92% of vanadium consumption. Tool, high speed and high alloy steels contain around 20% vanadium, and high strength low alloy (HSLA) steel contains less than 0.5% vanadium. Around 4% of annual vanadium production is as a titanium alloy for aerospace and industrial purposes. This alloy Ti6-4 (4% vanadium) is the workhorse titanium alloy used in aerospace applications. The main demand drivers for ferro-vanadium are global steel production rates and the vanadium consumption rate used within the steel industry.**

**The main vanadium raw material is referred to as vanadium pentoxide. Vanadium can either be derived from mined ore, from steelmaking slags, or from petroleum residues. The leading vanadium-producing nations remained China, Russia, and South Africa.**



**Japan and the United States were thought to be the only countries to recover significant quantities of vanadium from petroleum residues.**

**The major consumption of the ferro vanadium that is being manufactured is used in the process of alloying that is used in the manufacturing of the hardened steel. Hardened steel is used in the applications such as in the manufacturing of bicycles frames, axles, crankshafts, and other very critical components of steel. Thus, the industrial progress of the steel industry will trigger the growth of the ferro vanadium market. In the manufacturing of the high carbon steel alloy, ferro vanadium is used widely. This high carbon steel is used in the production of the medical tools. When vanadium is used in the alloys of titanium they can be used for manufacturing of the high-speed airframes and in jet engines. The overall weight of the steel is reduced by using ferro vanadium; hence, it is used in the manufacturing of the automobiles that are light in weight.**



**Ferrovandium is an alloy used to strengthen steel. It is a combination of iron and vanadium in which vanadium content varies from 35%-80%. It is used as an additive to enhance the quality of ferroalloys. When added to steel, the products are light in weight with extremely high tensile strength. The market for ferrovandium is primarily driven by increasing demand for high strength steel and high strength low alloy steel from the construction and automotive and transportation industries. The growth of these industries will be the key contributor responsible for the growth of the market of ferrovandium during the forecast period. As these industries are most prominent industries consuming majority of the steel consumption across the globe.**



**The global ferrovanadium market has been segmented as FeV40, FeV50, FeV60, FeV80 and nitride ferrovanadium. On the basis of production method, the ferrovanadium market is segmented into aluminothermy reduction and silicon reduction. On the basis of end use, the global ferrovanadium market is segmented into aerospace, automotive & transportation, construction, oil & gas industrial equipment and others. In the others segment of end use industries.**

**The growth of the region will be supplemented by the growing construction and automotive sector. In addition, the Chinese ferrovanadium market is anticipated to witness additional demand for ferrovanadium in the coming years, mainly due to revised standards by the Chinese government for increasing the tensile strength of rebar products.**



**Ferrovandium is the most commonly and widely used alloy for enhancing the strength of reinforcing bars used in buildings, bridges and tunnels. The global ferrovandium market is expected to register a CAGR of 5.0% over the forecast period (2018-2028) in value terms. The estimated volume of ferrovandium market in 2018 is 90,033 MT, and it is expected to grow at a CAGR of 3.4% to reach 125,698 MT by the end of 2028.**



## Consumption of Ferrovandium, During 2013-14 to 2015-16 (By Industries)

Industry	2013-14	2014-15 (R)	2015-16 (P)
<b>All Industries</b>	<b>1110</b>	<b>1131</b>	<b>1106</b>
Alloy steel	26	43	80
Electrode	1	1	2
Foundry	4	4	4
Iron & steel	1079	1083	1020

**The Indian alumina plants, which are mostly based on East Coast bauxite and that which have to meet the internal demand. On the other hand, with growth of Automobile and Casting Sectors, demand for ferrovanadium is expected to increase and this will have to be met by imports. The accelerated growth in the Forging Industry and increased demand for die steels and tool steel too, have paved way for increased vanadium consumption.**





# Exports of Ferrovandium (By Countries)

Country	2016-17 (P)	
	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>457</b>	<b>493144</b>
Bahrain	20	25609
Belgium	170	177534
Israel	++	144
Kuwait	30	27676
Malasiya	++	808
Mauritius	5	5186
Netherlands	180	198865
Oman	10	9936
Pakistan	++	594
South Africa	++	143
Turky	++	984
U A E	20	20298
USA	22	25046
Other Countries	++	321

# Machinery Photographs

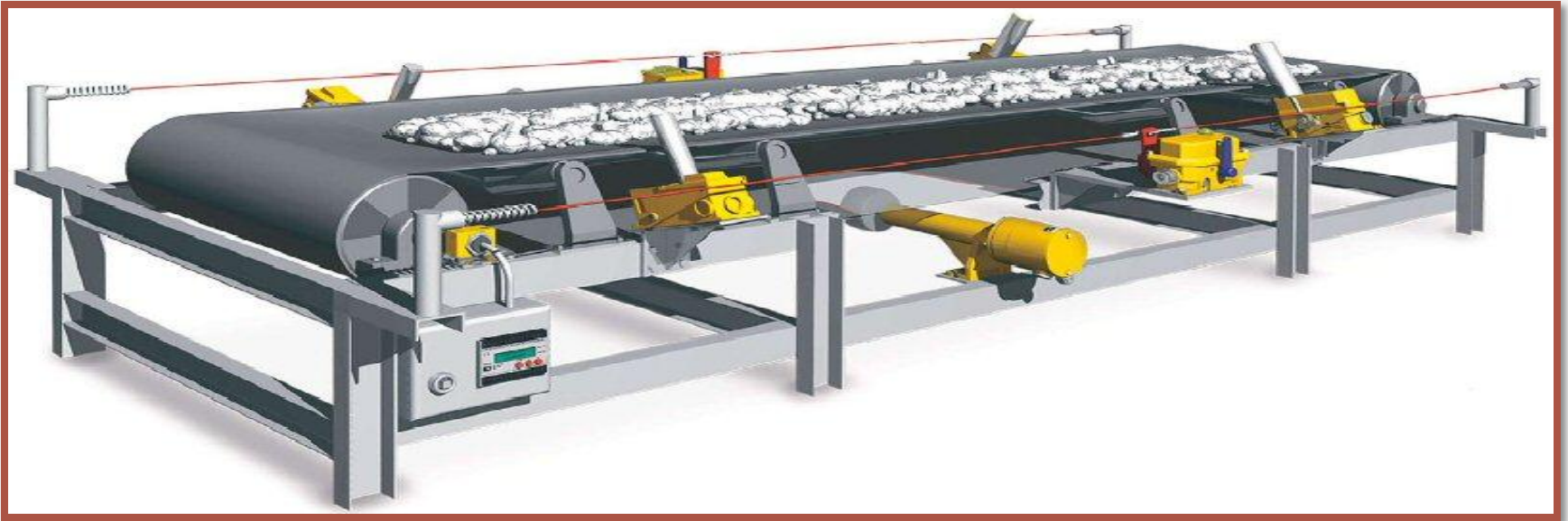


**Ball Mill**



**Hopper**





**Conveyor**



**Bagging Machine**



# Project at a Glance

## PROJECT AT A GLANCE

( in lacs)

COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.	0.00	115.00	115.00	Capital	0.00	164.76	164.76
Buildings	0.00	126.00	126.00	Share Premium	0.00	0.00	0.00
Plant & Machineries	0.00	135.00	135.00	Other Type Share			
Motor Vehicles	0.00	10.00	10.00	Capital	0.00	0.00	0.00
Office Automation Equipments	0.00	50.00	50.00	Reserves & Surplus	0.00	0.00	0.00
Technical Knowhow Fees & Exp.	0.00	35.00	35.00	Cash Subsidy	0.00	0.00	0.00
Franchise & Other Deposits	0.00	0.00	0.00	Internal Cash Accruals	0.00	0.00	0.00
Preliminary & Pre-operative Exp	0.00	3.00	3.00	Long/Medium Term Borrowings	0.00	494.27	494.27
Provision for Contingencies	0.00	11.50	11.50	Debentures / Bonds	0.00	0.00	0.00
Margin Money - Working Capital	0.00	173.53	173.53	Unsecured Loans/Deposits	0.00	0.00	0.00
<b>TOTAL</b>	<b>0.00</b>	<b>659.03</b>	<b>659.03</b>	<b>TOTAL</b>	<b>0.00</b>	<b>659.03</b>	<b>659.03</b>

# Project at a Glance

Year	Annualised		Book Value	Debt	Dividend	Retained Earnings		Payout	Probable Market Price	P/E Ratio	Yield Price/Book Value
	EPS	CEPS	Per Share		Per Share	Per Share		%		No.of Times	%
1-2	5.73	8.42	15.73	24.00	0.00	100.00	5.73	0.00	5.73	1.00	0.00
2-3	9.41	11.78	25.15	18.00	0.00	100.00	9.41	0.00	9.41	1.00	0.00
3-4	13.18	15.27	38.32	12.00	0.00	100.00	13.18	0.00	13.18	1.00	0.00
4-5	16.85	18.71	55.17	6.00	0.00	100.00	16.85	0.00	16.85	1.00	0.00
5-6	20.42	22.07	75.59	0.00	0.00	100.00	20.42	0.00	20.42	1.00	0.00



# Project at a Glance

Year	D. S. C. R.			Debt / - Deposits Debt	Equity as- Equity	Total Net Worth	Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio	
	Individual	Cumulative	Overall					GPM	PBT	PAT	Net Contribution	P/V Ratio			
	(Number of times)			(Number of times)		%	%	%	%	%		%			
Initial				3.00	3.00										
1-2	1.26	1.26		1.53	1.53	5.83		3.67%	1.75%	1.17%	1022.43	12.70%	4.63	1.09	
2-3	1.67	1.46		0.72	0.72	3.82		4.29%	2.56%	1.65%	1192.81	12.70%	4.77	1.15	
3-4	2.17	1.68	2.17	0.31	0.31	2.64		4.72%	3.17%	2.02%	1363.21	12.70%	4.73	1.23	
4-5	2.77	1.91		0.11	0.11	1.92		5.03%	3.63%	2.30%	1533.61	12.70%	4.58	1.33	
5-6	3.49	2.17		0.00	0.00	1.47		5.26%	3.96%	2.51%	1704.01	12.70%	4.39	1.51	





# Project at a Glance

## BEP

BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	67.20%
Total BEP (% of Installed Capacity)	68.79%
IRR, PAYBACK and FACR	
Internal Rate of Return .. ( In %age )	31.34%
Payback Period of the Project is ( In Years )	2 Years 3 Months
Fixed Assets Coverage Ratio ( No. of times )	44.093



# Major Queries/Questions Answered in the Report?

- 1. What is Ferro Vanadium Manufacturing industry ?**
- 2. How has the Ferro Vanadium Manufacturing industry performed so far and how will it perform in the coming years ?**
- 3. What is the Project Feasibility of Ferro Vanadium Manufacturing Plant ?**
- 4. What are the requirements of Working Capital for setting up Ferro Vanadium Manufacturing plant ?**

- 5. What is the structure of the Ferro Vanadium Manufacturing Business and who are the key/major players ?**
- 6. What is the total project cost for setting up Ferro Vanadium Manufacturing Business?**
- 7. What are the operating costs for setting up Ferro Vanadium Manufacturing plant ?**
- 8. What are the machinery and equipment requirements for setting up Ferro Vanadium Manufacturing plant ?**



**9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Ferro Vanadium Manufacturing plant ?**

**10. What are the requirements of raw material for setting up Ferro Vanadium Manufacturing plant ?**

**11. Who are the Suppliers and Manufacturers of Raw materials for setting up Ferro Vanadium Manufacturing Business?**

**12. What is the Manufacturing Process of Ferro Vanadium ?**



**13. What is the total size of land required for setting up Ferro Vanadium Manufacturing plant ?**

**14. What will be the income and expenditures for Ferro Vanadium Manufacturing Business?**

**15. What are the Projected Balance Sheets of Ferro Vanadium Manufacturing plant ?**

**16. What are the requirement of utilities and overheads for setting up Ferro Vanadium Manufacturing plant?**

**17. What is the Built up Area Requirement and cost for setting up Ferro Vanadium Manufacturing Business?**

**18. What are the Personnel (Manpower) Requirements for setting up Ferro Vanadium Manufacturing Business?**

**19. What are Statistics of Import & Export for Ferro Vanadium ?**

**20. What is the time required to break-even of Ferro Vanadium Manufacturing Business?**

**21. What is the Break-Even Analysis of Ferro Vanadium Manufacturing plant?**

**22. What are the Project financials of Ferro Vanadium Manufacturing Business?**



- 23. What are the Profitability Ratios of Ferro Vanadium Manufacturing Project?**
- 24. What is the Sensitivity Analysis-Price/Volume of Ferro Vanadium Manufacturing plant?**
- 25. What are the Projected Pay-Back Period and IRR of Ferro Vanadium Manufacturing plant?**
- 26. What is the Process Flow Sheet Diagram of Ferro Vanadium Manufacturing project?**



- 27. What are the Market Opportunities for setting up Ferro Vanadium Manufacturing plant?**
- 28. What is the Market Study and Assessment for setting up Ferro Vanadium Manufacturing Business?**
- 29. What is the Plant Layout for setting up Ferro Vanadium Manufacturing Business?**



# Table of Contents of the Project Report



## **1. PROJECT LOCATION**

- 1.1. CITY PROFILE & GEOTECHNICAL SITE CHARACTERIZATION
  - 1.1.1. General
  - 1.1.2. Physical Characteristics
  - 1.1.3. Climate and Rainfall
  - 1.1.4. Map
  - 1.1.5. Economy and Industry
  - 1.1.6. Transport

## **2. INTRODUCTION**

## **3. USES &APPLICATIONS**

## **4. B.I.S. SPECIFICATION**

- 4.1. IS 1466 (1985): FERROVANADIUM [MTD 5: FERRO ALLOYS]

## **5. SPECIFICATIONS& PROPERTIES**

- 5.1. SPECIFICATIONS
- 5.2. PROPERTIES

## **6. MARKET SURVEY**

- 6.1. OVERVIEW
- 6.2. GROWTH FACTORS
- 6.3. REGIONAL ANALYSIS
- 6.4. COMPETITIVE PLAYERS
- 6.5. KEY MARKET PLAYERS
- 6.6. CONSUMPTION
- 6.7. FERRO-VANADIUM

- 6.8. EUROPEAN VANADIUM MARKET
- 6.9. GLOBAL STEEL DEMAND FORECAST

**7. EXPORT & IMPORT: ALL COUNTRIES**

- 7.1. EXPORT: ALL COUNTRIES
- 7.2. IMPORT: ALL COUNTRIES

**8. FINANCIALS & COMPARISON OF MAJOR INDIAN PLAYERS/COMPANIES**

- 8.1. ABOUT FINANCIAL STATEMENTS OF CMIE DATABASE
- 8.2. PROFITS & APPROPRIATIONS
- 8.3. TOTAL LIABILITIES
- 8.4. TOTAL ASSETS
- 8.5. NET CASH FLOW FROM OPERATING ACTIVITIES
- 8.6. SECTION –I
  - 8.6.1. Name of Company with Contact Details
  - 8.6.2. Name of Director(S)
  - 8.6.3. Plant Capacity
  - 8.6.4. Credit Ratings
  - 8.6.5. Location of Plant
- 8.7. SECTION–II
  - 8.7.1. Assets
  - 8.7.2. Cash Flow
  - 8.7.3. Cost as % Ge of Sales
  - 8.7.4. Growth in Assets & Liabilities
  - 8.7.5. Growth in Income & Expenditure
  - 8.7.6. Income & Expenditure
  - 8.7.7. Liabilities

- 8.7.8. Liquidity Ratios
- 8.7.9. Profitability Ratio
- 8.7.10. Profits
- 8.7.11. Return Ratios
- 8.7.12. Structure of Assets & Liabilities(%)
- 8.7.13. Working Capital & Turnover Ratios

## **9. COMPANY PROFILE OF MAJOR PLAYERS**

### **10. EXPORT & IMPORT: STATISTICS DATA OF INDIA**

- 10.1. EXPORT: STATISTICS DATA FOR FERRO VANADIUM
- 10.2. IMPORT: STATISTICS DATA FOR FERRO VANADIUM

### **11. PRESENT MANUFACTURERS**

### **12. RAW MATERIALS**

### **13. MANUFACTURING PROCESS**

### **14. PROCESS FLOW DIAGRAM**

### **15. SUPPLIERS OF PLANT & MACHINERY**

### **16. SUPPLIERS OF RAW MATERIAL**

### **17. PHOTOGRAPHS/IMAGES FOR REFERENCE**

- 17.1. MACHINERY PHOTOGRAPHS
- 17.2. RAW MATERIAL PHOTOGRAPHS
- 17.3. PRODUCT PHOTOGRAPHS

### **18. PLANT LAYOUT**



# *Project Financials*

• <b>Project at a Glance</b>	<b>Annexure</b>
• Assumptions for Profitability workings .....	1
• Plant Economics.....	2
• Production Schedule.....	3
• Land & Building.....	4
<b>Factory Land &amp; Building</b>	
<b>Site Development Expenses</b>	



- **Plant & Machinery.....5**
  - Indigenous Machineries**
  - Other Machineries (Miscellaneous, Laboratory etc.)**
  
- **Other Fixed Assets.....6**
  - Furniture & Fixtures**
  - Pre-operative and Preliminary Expenses**
  - Technical Knowhow**
  - Provision of Contingencies**
  
- **Working Capital Requirement Per Month.....7**
  - Raw Material**
  - Packing Material**
  - Lab & ETP Chemical Cost**
  - Consumable Store**



- **Overheads Required Per Month and Per Annum.....8**  
**Utilities & Overheads (Power, Water and Fuel Expenses etc.)**  
**Royalty and Other Charges**  
**Selling and Distribution Expenses**
  
- **Salary and Wages .....9**
  
- **Turnover Per Annum .....10**
  
- **Share Capital.....11**  
**Equity Capital**  
**Preference Share Capital**



- **Annexure 1 :: Cost of Project and Means of Finance**
- **Annexure 2 :: Profitability and Net Cash Accruals**
  - **Revenue/Income/Realisation**
  - **Expenses/Cost of Products/Services/Items**
  - **Gross Profit**
  - **Financial Charges**
  - **Total Cost of Sales**
  - **Net Profit After Taxes**
  - **Net Cash Accruals**



• **Annexure 3 :: Assessment of Working Capital requirements**

- **Current Assets**
- **Gross Working Capital**
- **Current Liabilities**
- **Net Working Capital**
- **Working Note for Calculation of Work-in-process**

• **Annexure 4 :: Sources and Disposition of Funds**



- **Annexure 5 :: Projected Balance Sheets**

- **ROI (Average of Fixed Assets)**
- **RONW (Average of Share Capital)**
- **ROI (Average of Total Assets)**

- **Annexure 6 :: Profitability Ratios**

- **D.S.C.R**
- **Earnings Per Share (EPS)**
- **Debt Equity Ratio**





• **Annexure 7 :: Break-Even Analysis**

- **Variable Cost & Expenses**
- **Semi-Variable/Semi-Fixed Expenses**
- **Profit Volume Ratio (PVR)**
- **Fixed Expenses / Cost**
- **B.E.P**



- **Annexure 8 to 11 :: Sensitivity Analysis-Price/Volume**

- **Resultant N.P.B.T**
- **Resultant D.S.C.R**
- **Resultant PV Ratio**
- **Resultant DER**
- **Resultant ROI**
- **Resultant BEP**



- **Annexure 12 :: Shareholding Pattern and Stake Status**

- **Equity Capital**

- **Preference Share Capital**

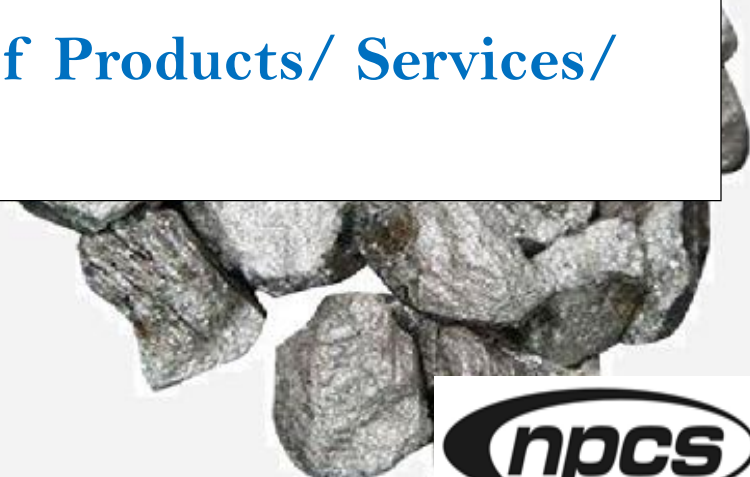
- **Annexure 13 :: Quantitative Details-Output/Sales/Stocks**

- **Determined Capacity P.A of Products/Services**

- **Achievable Efficiency/Yield % of Products/Services/Items**

- **Net Usable Load/Capacity of Products/Services/Items**

- **Expected Sales/ Revenue/ Income of Products/ Services/ Items**



- **Annexure 14** :: **Product wise Domestic Sales Realisation**
- **Annexure 15** :: **Total Raw Material Cost**
- **Annexure 16** :: **Raw Material Cost per unit**
- **Annexure 17** :: **Total Lab & ETP Chemical Cost**
- **Annexure 18** :: **Consumables, Store etc.**
- **Annexure 19** :: **Packing Material Cost**
- **Annexure 20** :: **Packing Material Cost Per Unit**



- **Annexure 21** :: **Employees Expenses**
- **Annexure 22** :: **Fuel Expenses**
- **Annexure 23** :: **Power/Electricity Expenses**
- **Annexure 24** :: **Royalty & Other Charges**
- **Annexure 25** :: **Repairs & Maintenance Expenses**
- **Annexure 26** :: **Other Manufacturing Expenses**
- **Annexure 27** :: **Administration Expenses**
- **Annexure 28** :: **Selling Expenses**



- **Annexure 29 :: Depreciation Charges – as per Books (Total)**
- **Annexure 30 :: Depreciation Charges – as per Books (P & M)**
- **Annexure 31 :: Depreciation Charges - as per IT Act WDV (Total)**
- **Annexure 32 :: Depreciation Charges - as per IT Act WDV (P & M)**
- **Annexure 33 :: Interest and Repayment - Term Loans**
- **Annexure 34 :: Tax on Profits**
- **Annexure 35 :: Projected Pay-Back Period and IRR**





# Reasons for Buying our Report:

- **This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, market potential of the product and reasons for investing in the product**
- **This report provides vital information on the product like it's characteristics and segmentation**
- **This report helps you market and place the product correctly by identifying the target customer group of the product**

- **This report helps you understand the viability of the project by disclosing details like machinery required, project costs and snapshot of other project financials**
- **The report provides a glimpse of government regulations applicable on the industry**
- **The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions**

# Our Approach:

- **Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.**
- **The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players**
- **We use reliable sources of information and databases. And information from such sources is processed by us and included in the report**

## ***Scope of the Report***

The report titled “Market Survey cum Detailed Techno Economic Feasibility Report on Ferro Vanadium.” provides an insight into Ferro Vanadium market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout and Project Financials of Ferro Vanadium project. The report assesses the market sizing and growth of the Indian Ferro Vanadium Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:

- **Good Present/Future Demand**
- **Export-Import Market Potential**
- **Raw Material & Manpower Availability**
- **Project Costs and Payback Period**

**We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in the Ferro Vanadium sector in India along with its business prospects. Through this report we have identified Ferro Vanadium project as a lucrative investment avenue.**

# Tags

Ferrovanadium, Process for Production of Ferro-Vanadium, Ferrovanadium Production, Process for Producing Ferrovanadium Alloys, Ferro Vanadium, Vanadium, Production of Ferrovanadium, Ferrovanadium Production Process, Ferrovanadium Formula, Ferro Vanadium Uses, Vanadium and Ferrovanadium, Production of Vanadium Alloys, Ferro Alloys, Manufacture of Ferro Alloys, How to Start Production of Ferroalloys, Ferro Vanadium Industry, Project Report on Ferro Vanadium, Vanadium Industry, Vanadium Processing, Ferro Vanadium Manufacture, Ferro Vanadium Manufacturing, Project Report on Ferrovanadium Production Industry, Detailed Project Report on Ferrovanadium Production, Project Report on Ferrovanadium Production, Pre-Investment Feasibility Study on Ferrovanadium Production, Techno-Economic feasibility study on Ferrovanadium Production, Feasibility report on Ferrovanadium Production, Free Project Profile on Ferrovanadium Production, Ferro Alloys Production Process Pdf, Project profile on Ferrovanadium Production, Download free project profile on Ferrovanadium Production, Opportunities in the Ferroalloy Sector



**Niir Project Consultancy Services (NPCS)**

**can provide Detailed Project Report on**

**Ferro Vanadium Production Business.**

**Ferrovanadium Market is expected to  
Expand at a CAGR of 5.0% between 2018  
and 2028.**

**Ferro Alloys Industry**

**See more**

<https://goo.gl/AzEEZ1>

<https://goo.gl/CSvM8d>

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# OUR CLIENTS

Our inexhaustible Client list includes public-sector companies, Corporate Houses, Government undertaking, individual entrepreneurs, NRI, Foreign investors, non-profit organizations and educational institutions from all parts of the World. The list is just a glimpse of our esteemed & satisfied Clients.

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# **Free Instant Online Project**

## **Identification and Selection Service**

**Our Team has simplified the process for you by providing a "Free Instant Online Project Identification & Selection" search facility to identify projects based on multiple search parameters related to project costs namely: Plant & Machinery Cost, Total Capital Investment, Cost of the project, Rate of Return% (ROR) and Break Even Point % (BEP). You can sort the projects on the basis of mentioned pointers and identify a suitable project matching your investment requisites.....[Read more](#)**



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## Reports:

### ▪ Detailed Project Reports

**NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.**

**Our Market Survey cum Detailed Techno Economic Feasibility Report provides an insight of market in India. The report assesses the market sizing and growth of the Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.**



**And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:**

- **Good Present/Future Demand**
- **Export-Import Market Potential**
- **Raw Material & Manpower Availability**
- **Project Costs and Payback Period**

**The detailed project report covers all aspect of business, from analyzing the market, confirming availability of various necessities such as Manufacturing Plant, Detailed Project Report, Profile, Business Plan, Industry Trends, Market Research, Survey, Manufacturing Process, Machinery, Raw Materials, Feasibility Study, Investment Opportunities, Cost and Revenue, Plant Economics, Production Schedule,**





**Working Capital Requirement, uses and applications, Plant Layout, Project Financials, Process Flow Sheet, Cost of Project, Projected Balance Sheets, Profitability Ratios, Break Even Analysis. The DPR (Detailed Project Report) is formulated by highly accomplished and experienced consultants and the market research and analysis are supported by a panel of experts and digitalized data bank.**

**We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in India along with its business prospects.....[Read more](#)**



# Contact us

## **NIIR PROJECT CONSULTANCY SERVICES**

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# Niir PROJECT CONSULTANCY SERVICES

**An ISO 9001:2015 Company**



[www.entrepreneurindia.co](http://www.entrepreneurindia.co)

# Who are we?

- *One of the leading reliable names in industrial world for providing the most comprehensive technical consulting services*
- *We adopt a systematic approach to provide the strong fundamental support needed for the effective delivery of services to our Clients' in India & abroad*



*We at NPCS want to grow with you by providing solutions scale to suit your new operations and help you reduce risk and give a high return on application investments. We have successfully achieved top-notch quality standards with a high level of customer appreciation resulting in long lasting relation and large amount of referral work through technological breakthrough and innovative concepts. A large number of our Indian, Overseas and NRI Clients have appreciated our expertise for excellence which speaks volumes about our commitment and dedication to every client's success.*



*We bring deep, functional expertise, but are known for our holistic perspective: we capture value across boundaries and between the silos of any organization. We have proven a multiplier effect from optimizing the sum of the parts, not just the individual pieces. We actively encourage a culture of innovation, which facilitates the development of new technologies and ensures a high quality product.*





# What do we offer?

- *Project Identification*
- *Detailed Project Reports/Pre-feasibility Reports*
- *Market Research Reports*
- *Business Plan*
- *Technology Books and Directory*
- *Industry Trend*
- *Databases on CD-ROM*
- *Laboratory Testing Services*
- *Turnkey Project Consultancy/Solutions*
- *Entrepreneur India (An Industrial Monthly Journal)*



## How are we different ?

- *We have two decades long experience in project consultancy and market research field*
- *We empower our customers with the prerequisite know-how to take sound business decisions*
- *We help catalyze business growth by providing distinctive and profound market analysis*
- *We serve a wide array of customers , from individual entrepreneurs to Corporations and Foreign Investors*
- *We use authentic & reliable sources to ensure business precision*

# Our Approach

**Requirement collection**

**Thorough analysis of the project**

**Economic feasibility study of the Project**

**Market potential survey/research**

**Report Compilation**

# Contact us

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