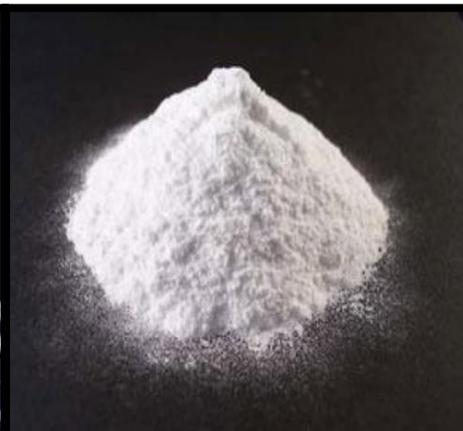


Alumina from Bauxite.

Extraction and

Production of Alumina from Bauxite



[NPCS/3820/23488]

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Introduction

Alumina is the common name given to aluminum oxide (Al₂O₃). Alumina is produced from bauxite, an ore that is mined from topsoil in various tropical and subtropical regions. The Bayer process, discovered in 1887, is the primary process by which alumina is extracted from bauxite.



Bauxite is the general name given to the hydrated oxides of aluminium. It contains varying amounts of combined water and several impurities of which ferric oxide and silica are usually predominant. It is essential that the Al_2O_3 (alumina) be obtained substantially free from these impurities as otherwise the iron oxide and silica would be reduced and contaminate the metallic aluminium produced in the Hall (or Heroult) Process.



Uses & Applications:

The superior characteristics alumina can offer make it ideal for use in many applications. Some of the most common applications outside of aluminium production are listed below.

- **Abrasives:**

Alumina is widely used in a variety of industrial abrasive materials, owing to its superior hardness and strength. Similarly, alumina can be used as a coating to protect against abrasion.

- **Refractories:**

Alumina is also widely used in refractory products, due to its high melting point. It is especially suited to demanding applications where the strength of the refractory must be retained at high temperatures.

- **Glass:**

Alumina is often used in the production of glass products, lending improved strength; it has even been studied for its potential in creating an unbreakable glass.

- **Engineered Ceramics:**

Alumina is also widely used in engineered ceramics, also called advanced or technical ceramics. These engineered ceramic materials are formulated for especially harsh applications that require increased wear resistance, thermal and chemical stability, and many of the other characteristics alumina possesses. Engineered ceramics have applications in industries from chemical and medical, to industrial, electrical, and more.

- **Other Applications:**

laser tubes, Wear pads, Seal rings High temperature electrical insulators, High voltage insulators, Furnace liner tubes, Thread and wire guides, Electronic substrates, Ballistic armor, Abrasion resistant tube and elbow liners, Thermometry sensors, Laboratory instrument tubes and sample holders, Instrumentation parts for thermal property test machines, Grinding media.



Market Outlook

High Purity Alumina Market is expected to garner \$5,293 million by 2023, registering a CAGR of 17.0% during the forecast period 2017-2023. The market for high purity alumina has witnessed tremendous growth during the past few years and is expected to grow at a CAGR of 20.7% in terms of volume, during the analysis period.

The bauxite and alumina market can be segmented as metallurgical and non-metallurgical products. A metallurgical segment includes the bauxite and alumina used for extraction of aluminum and is the largest product segment.



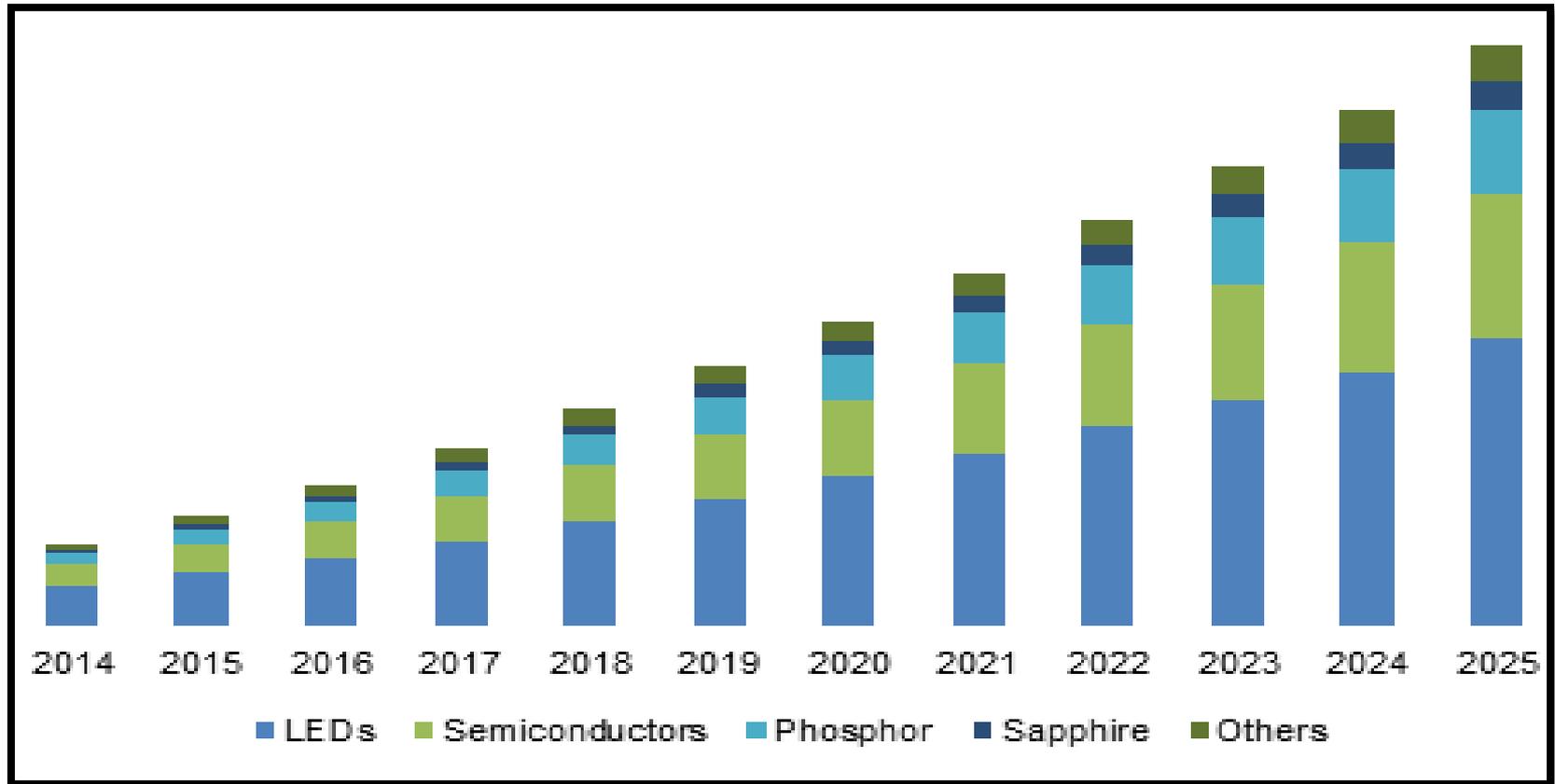
The major trend being witnessed in the global high-purity alumina market is the growing investments by market players in new plants for product manufacturing. Besides, investments are being focused upon the expansion of existing production units and the modernization and upgradation of aging facilities. This increase in investments for enhancing the production of alumina is expected to result in the greater availability of the product to meet the growing demand in the market.

Based on region, the market is categorized into Europe, North America, Asia-Pacific (APAC), Latin America, and the Middle East and Africa. Among all these regions, APAC held a significant share in the high-purity alumina market during the historical period.

This can be majorly attributed to the growth in the construction industry of the region, particularly in infrastructure projects such as highways and roadways in China and India. The project developers across these nations are increasingly focusing on the adoption of LED lighting solutions for installation purposes in these structures, which, in turn, is boosting the growth of the high-purity alumina industry.



U.S. High Purity Alumina Market Size, By Application, 2014 – 2025 (USD Million)



High purity alumina market is witnessing steady growth in the semiconductor industry, as the product is a fairly new industrial-use material employed in the process of fabrication of semiconductor device. It is also used in wafer processing equipment owing to its high resistance to plasma corrosion and improved blending strength. Demand for semiconductor is influenced by several underlying applications such as data processing, communication and consumer electronics that accounts for the prominent share of applicability in personal computers, tablets, gaming consoles, television, iPods and servers. Hence, growing demand for high definition display screens is expected to augment the high purity alumina market demand in the forecast timespan.

The global market for high purity alumina is also driven by sapphire's use in semiconductor applications. High purity alumina is used as separators in Li-ion batteries that are used in electronic devices and electric vehicles. The other applications of high purity alumina are abrasives, alumina ceramic, translucent cosmetics, and separation membrane.



ALUMINA

High Purity Alumina (HPA) Market Volume Share (%), By Region (2018)



Altech Chemicals Limited, Baikowski SAS, Polar Sapphire Limited, Nippon Light Metal Company Limited, Alcoa Corporation, Orbite Technologies, Sasol, Sumitomo Chemical, Rio Tinto Alcan, UC RUSAL, Norsk hydro are some of the prominent players operating in the global high purity alumina market. Alcoa Corporation is among the top producers of aluminium. In 2016, Alcoa Inc. got split into two entities namely Alcoa Corporation and Arconic with former engaged in mining and manufacturing of raw alumina and the latter engaged in processing of alumina and other metals.



Alumina Industry in India:

Alumina is produced from bauxite. About one tonne of alumina is produced from three tonnes of bauxite and about one tonne of aluminium from two tonnes of alumina. The production of alumina at 36.10 lakh tonnes in 2012-13 decreased by about 8% as compared to the previous year.



Production of Alumina 2010-11 to 2012-13

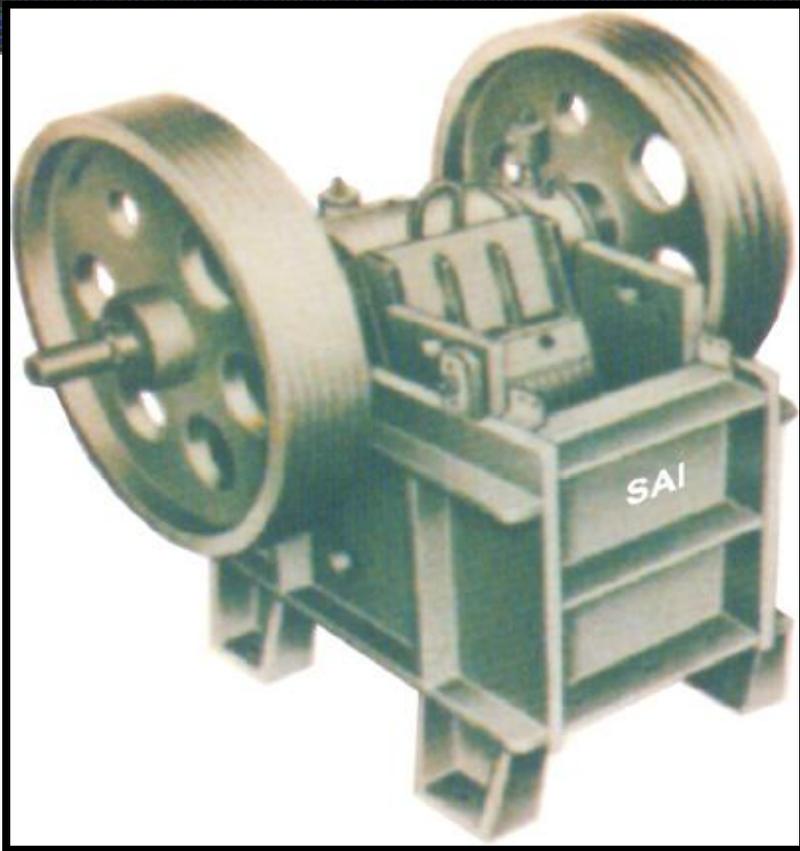
(Quantity in tonnes; value in ₹'000)

Year	Quantity	Value
2010-11	3576890	50805325
2011-12	3930950	62722574
2012-13(P)	3609815	59637781

Exports of Alumina (By Countries)

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	886412	16437230	927830	18834156
Bahrain	149966	2707960	393289	7545781
Iran	453286	8183559	275429	5038588
UAE	92790	1763229	143067	2810584
Georgia	-	-	30600	591511
Qatar	13	464	51	569135
Egypt	46	1519	30623	527471
USA	10312	313533	12229	406435
China	152957	2655345	11209	266028
Thailand	5839	164895	6078	207187
Saudi Arabia	2110	72816	2932	113261
Other countries	19093	573910	22323	758175

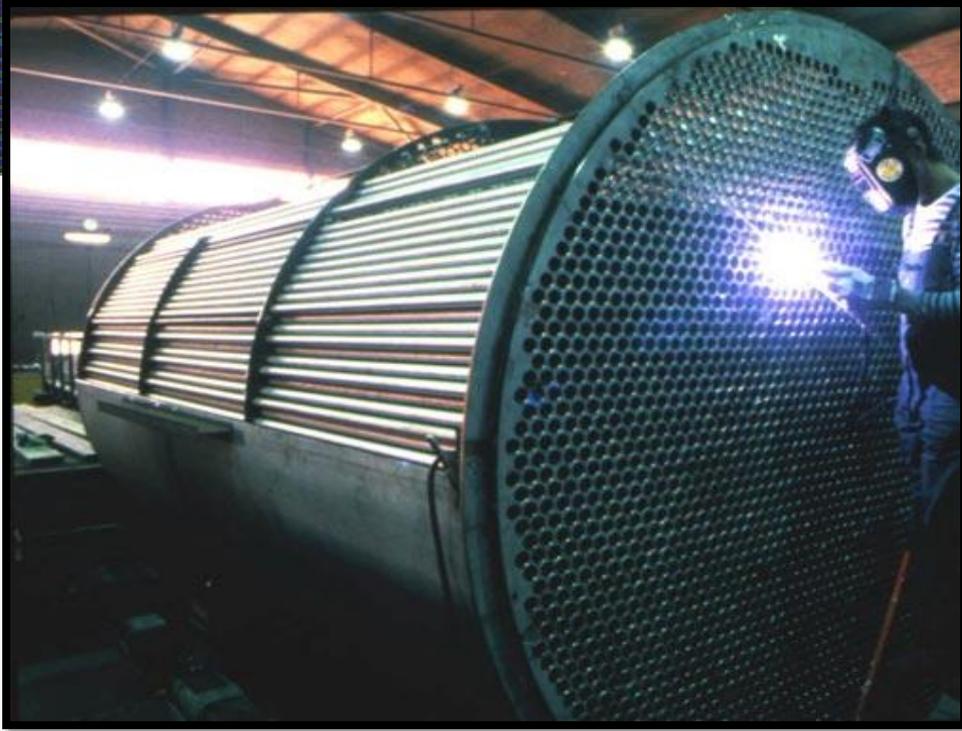
Machinery Photographs



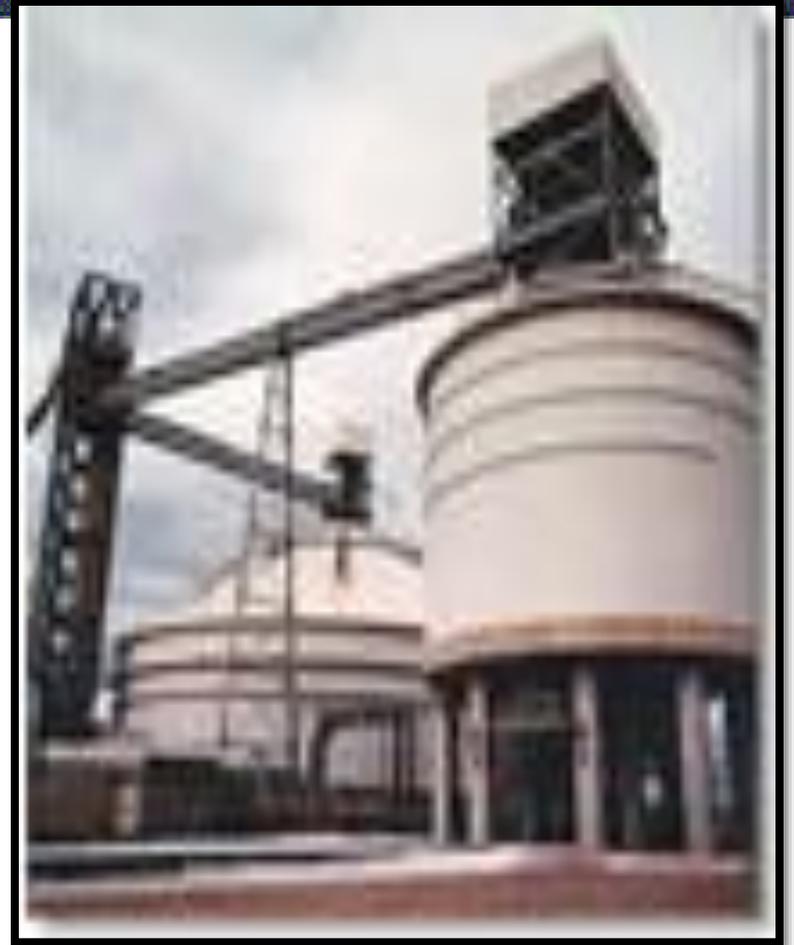
JAW CRUSHER



ROTARY KILN



HEAT EXCHANGER



ALUMINA STORAGE

Project at a Glance

COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existin g	Propose d	Total	Particulars	Existin g	Propose d	Total
Land & Site							1502.1
Development Exp.	0.00	650.00	650.00	Capital	0.00	1502.16	6
Buildings	0.00	1702.00	1702.00	Share Premium	0.00	0.00	0.00
				Other Type Share			
Plant & Machineries	0.00	890.25	890.25	Capital	0.00	0.00	0.00
Motor Vehicles	0.00	60.00	60.00	Reserves & Surplus	0.00	0.00	0.00
Office Automation							
Equipments	0.00	1677.00	1677.00	Cash Subsidy	0.00	0.00	0.00
Technical Knowhow				Internal Cash			
Fees & Exp.	0.00	75.00	75.00	Accruals	0.00	0.00	0.00
Franchise & Other				Long/Medium Term			4506.4
Deposits	0.00	0.00	0.00	Borrowings	0.00	4506.49	9
Preliminary& Pre-							
operative Exp	0.00	10.00	10.00	Debentures / Bonds	0.00	0.00	0.00
Provision for				Unsecured			
Contingencies	0.00	83.50	83.50	Loans/Deposits	0.00	0.00	0.00
Margin Money -							
Working Capital	0.00	860.90	860.90				
							6008.6
TOTAL	0.00	6008.65	6008.65	TOTAL	0.00	6008.65	5

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				
1-2	3.09	6.40	13.09	24.00	0.00	100.00	3.09	0.00	3.09	1.00	0.00
2-3	8.01	10.95	21.11	18.00	0.00	100.00	8.01	0.00	8.01	1.00	0.00
3-4	12.93	15.53	34.04	12.00	0.00	100.00	12.93	0.00	12.93	1.00	0.00
4-5	17.79	20.11	51.83	6.00	0.00	100.00	17.79	0.00	17.79	1.00	0.00
5-6	22.60	24.65	74.43	0.00	0.00	100.00	22.60	0.00	22.60	1.00	0.00

Project at a Glance

Year	D. S. C. R.			Debt / - Deposits Debt	Equity as-Equity	Total Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio
	Individual	Cumulative	Overall				GPM	PBT	PAT	Net Contribution	P/V Ratio		
Initial	(Number of times)			(Number of times)	%	%	%	%	%	%			
1-2	1.04	1.04		3.00	3.00				2.56	13202	72.6		
2-3	1.57	1.30		1.83	1.83	2.81	7.99%	3.73%	%	.75	2%	2.45	1.01
3-4	2.21	1.58	2.21	0.85	0.85	1.55	12.16%	8.81%	%	.56	8%	2.64	1.24
4-5	2.97	1.88		0.35	0.35	0.84	15.21%	12.59%	%	.91	7%	2.60	1.65
5-6	3.89	2.21		0.12	0.12	0.47	17.53%	15.47%	%	.26	7%	2.40	2.19
				0.00	0.00	0.27	19.32%	17.71%	%	.61	6%	2.15	3.69

Project at a Glance

BEP

BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	74.03%
Total BEP (% of Installed Capacity)	75.44%
IRR, PAYBACK and FACR	
Internal Rate of Return .. (In %age)	29.13%
Payback Period of the Project is (In Years)	2 Years 4 Months
Fixed Assets Coverage Ratio (No. of times)	9.250

Major Queries/Questions Answered in the Report?

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

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

- 9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Alumina Manufacturing plant ?**
- 10. What are the requirements of raw material for setting up Alumina Manufacturing plant ?**
- 11. Who are the Suppliers and Manufacturers of Raw materials for setting up Alumina Manufacturing Business?**
- 12. What is the Extraction Process of Alumina from Bauxite?**

- 13. What is the total size of land required for setting up Alumina Manufacturing plant ?**
- 14. What will be the income and expenditures for Alumina Manufacturing Business?**
- 15. What are the Projected Balance Sheets of Alumina Manufacturing plant ?**
- 16. What are the requirement of utilities and overheads for setting up Alumina Manufacturing plant?**
- 17. What is the Built up Area Requirement and cost for setting up Alumina Manufacturing Business?**

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

19. What are Statistics of Import & Export for Alumina?

20. What is the time required to break-even of Alumina Manufacturing Business?

21. What is the Break-Even Analysis of Alumina Manufacturing plant?

22. What are the Project financials of Alumina Manufacturing Business?

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

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

Table of Contents of the Project Report

1. PROJECT LOCATION

- 1.1. DISTRICT PROFILE & GEOTECHNICAL SITE CHARACTERIZATION
 - 1.1.1. General
 - 1.1.2. History
 - 1.1.3. Demography
 - 1.1.4. Health
 - 1.1.5. Map
 - 1.1.6. Wild Life
 - 1.1.7. Agriculture
 - 1.1.8. Minerals
 - 1.1.9. Industry at a Glance
 - 1.1.10. Transport

2. INTRODUCTION

- 2.1. MINERALS OF BAUXITE DEPOSITS
- 2.2. ANALYSIS OF VARIOUS ROCK

3. PROPERTIES

- 3.1. ENGINEERING PROPERTIES

4. USES & APPLICATIONS

5. B.I.S. SPECIFICATIONS

- 5.1. IS 11112~ALUMINA, CHROMATOGRAPHIC GRADE
- 5.2. IS 1335~METHODS FOR DIRECT DETERMINATION OF ALUMINA IN REFRACTORY MATERIALS

- 5.3. IS 1760: PART 3~METHODS OF CHEMICAL ANALYSIS OF LIMESTONE, DOLOMITE AND ALLIED MATERIALS PART 3 DETERMINATION OF IRON OXIDE, ALUMINA, CALCIUM OXIDE AND MAGNESIA
- 5.4. IS 2000: PART 3~METHODS OF CHEMICAL ANALYSIS OF BAUXITE PART 3 DETERMINATION OF ALUMINA
- 5.5. IS 5953~BAUXITE FOR USE IN THE PRODUCTION OF ALUMINA

6. MARKET SURVEY

- 6.1. ALUMINIUM PRODUCTION
- 6.2. ALUMINIUM CONSUMPTION
- 6.3. DEMAND : PAST AND FUTURE
- 6.4. LEAD PLAYERS
- 6.5. LEADING BRANDS

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
- 8.6.6. Name of Raw Material(S) Consumed with Quantity & Cost
- 8.7. SECTION – II
- 8.7.1. Assets
- 8.7.2. Cash Flow
- 8.7.3. Cost as % Ge of Sales
- 8.7.4. Forex Transactions
- 8.7.5. Growth in Assets & Liabilities
- 8.7.7. Income & Expenditure
- 8.7.8. Liabilities
- 8.7.9. Liquidity Ratios
- 8.7.10. Profitability Ratio
- 8.7.11. Profits
- 8.7.12. Return Ratios
- 8.7.13. Structure of Assets & Liabilities (%)
- 8.7.14. Working Capital & Turnover Ratios

9. COMPANY PROFILE OF MAJOR PLAYERS

10. EXPORT & IMPORT STATISTICS OF INDIA

- 10.1. EXPORT STATISTICS FOR ALUMINIUM INGOT
- 10.2. IMPORT STATISTICS FOR ALUMINIUM INGOT

11. PRESENT MANUFACTURERS



12. PRINCIPAL OF RAW MATERIALS

13. COMPOSITION AND PROPERTIES OF BAUXITE

- 13.1. CHEMICAL COMPOSITION
- 13.2. PHYSICAL PROPERTIES

14. MAJOR BAUXITE DEPOSITS

15. TYPES OF BAUXITE

16. USES OF BAUXITE

17. AVAILABILITY OF BAUXITE IN INDIA

18. MANUFACTURING PROCESS

19. ALUMINA REFINERY LAYOUT

20. PROCESS FLOW DIAGRAM

- 20.1. ALUMINA REFINNING PROCESS
- 20.2. ALUMINA FROM BAUXITE

21. ENVIRONMENTAL AFFECT OF ALUMINA PRODUCTION

- 21.1. ENVIRONMENTAL ISSUES
- 21.2. ENVIRONMENT PROBLEMS

- 21.3. BEST POSSIBLE SOLUTIONS
- 21.4. WORKING ENVIRONMENT AND SAFETY ASPECTS IN ALUMINA REFINERY

22. BUYER'S LIST

- 22.1. CONTACT DETAILS OF BUYER'S
- 22.2. NAME OF DIRECTOR(S)
- 22.3. PLANT CAPACITY
- 22.4. CREDIT RATINGS
- 22.5. LOCATION OF PLANT
- 22.6. COMPANY WISE CONSUMPTION DETAIL OF THE RAW MATERIALS

23. SUPPLIERS OF PLANT & MACHINERY

24. SUPPLIERS OF RAW MATERIAL

25. PHOTOGRAPHS/IMAGES FOR REFERENCE

- 25.1. MACHINERY PHOTOGRAPHS
- 25.2. RAW MATERIAL PHOTOGRAPHS
- 25.3. PRODUCT PHOTOGRAPHS

26. PLANT LAYOUT

27. QUOTATION OF PLANT, MACHINERY AND EQUIPMENTS FROM SUPPLIER



Project Financials

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

- **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 Wages9**

- **Turnover Per Annum10**

- **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**

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- **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**

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- **Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.**
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- **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 Alumina from Bauxite.” provides an insight into Alumina from Bauxite market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout and Project Financials of Alumina from Bauxite project. The report assesses the market sizing and growth of the Indian Alumina from Bauxite 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 Alumina from Bauxite sector in India along with its business prospects. Through this report we have identified Alumina from Bauxite project as a lucrative investment avenue.

Tags

#Alumina_from_Bauxite, #Extraction_Process_of_Alumina_from_Bauxite,
#How_is_Alumina_Extracted_from_Bauxite?
#Extract_Alumina_from_Bauxite, Manufacturing of Alumina, Making of Alumina,
#Extraction_of_Aluminium_from_Bauxite_Pdf,
#Extraction_of_Alumina, Extraction of Alumina from Bauxite, Manufacturing Process of Alumina, #Production of Alumina, Manufacturing of Alumina, How is Alumina Produced? #Alumina_Production, Process for Production of Alumina, Production of Alumina from Bauxite, Alumina Plant in India, Alumina Manufacturing Process,
#Project_Report_on_Alumina_manufacturing_Industry, Detailed Project Report on Extraction of Alumina, Project Report on Production of Alumina from Bauxite, Pre-Investment Feasibility Study on Production of Alumina from Bauxite, Techno-Economic feasibility study on Production of Alumina from Bauxite, #Feasibility_report_on_Extraction_of_Alumina, Free Project Profile on Extraction of Alumina, Project profile on Production of Alumina from Bauxite, Download free project profile on Production of Alumina from Bauxite, Alumina Business

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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

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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*
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- *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



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You**

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