



HINDUSTAN ALUMINUM CORPORATION: A LEADER IN METAL INDUSTRY

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ABSTRACT

The goal of this article is to investigate the expansion of the aluminium industry and forecast aluminium production for the next two decades. In the earth's crust, aluminium is the third most plentiful element. It is never found as a free component. It is a silvery white metal with a wide range of applications in transportation, construction, packaging, electronic manufacturing, and household appliances, among other industries, and as a result, the economic activities of these industries drive the overall demand for aluminium. Hindalco is an integrated manufacturer with a low cost basis and a strong presence across the value chain, ranking among the top five aluminium producers in the world by exports. Extrusions, flat-rolled products, foils, wire rods, billets, and other aluminium downstream items from Hindalco are used in a variety of industries, from autos to packaging and medicines.

KEYWORDS: Aluminium industry, stock price, Financial consolidated statement, aluminium smelter, Recourse optimization, Corporate Social Responsibility, SWOT analysis.

INTRODUCTION:

One of Asia's largest integrated primary aluminium producers. Hindalco is the market leader in aluminium and downstream value-added products in India, with a pan-India presence that spans the entire spectrum of operations, from bauxite mining to alumina refining to aluminium smelting to downstream rolling, extrusions, and recycling.

Bauxite mining, alumina refining, smelting, and transforming primary metal into value-added products are all part of our integrated Indian aluminium operations. For vital raw resources like bauxite, power, and coal, we have specialised suppliers. Auxiliary chemicals are also available from reliable suppliers. Alumina, primary aluminium ingots, billets, and wire rods, as well as value-added goods including rolled products, extrusions, and foils, are among our completed products. For our own captive needs, we use metallurgical alumina. Chemical alumina and hydrates are utilised in a variety of sectors, including water treatment, cable and plastics fillers, refractories and ceramics, and glass, to name a few.

An alumina refinery, an aluminium smelter, and facilities for the production of semi-fabricated goods are all part of Hindalco's integrated complex at Renukoot, Uttar Pradesh, India. Our Renuagar power plant, around 45 kilometres from Renukoot, provides electricity. An aluminium smelter and an aluminium FRP factory (for rolled products, extrusions products, and wire rods) with a captive power plant and coal mine are also located at Hirakud (Odisha), as well as an alumina refinery in Muri (Jharkhand). Our chemical grade alumina facility is in Belagavi, Karnataka, and we have rolling mills at Belur, West Bengal, Talaja, Mumbai, and Mouda, Nagpur (Maharashtra). Our foil rolling facility is in Mouda, Maharashtra, and our extrusion plant is at Alupuram, Tamil Nadu (Kerala). All of our facilities are accredited to ISO 9001, 14001, and OHSAS 18001 standards.

In more than 30 countries, the aluminium sector contributes significantly to the global economy as well as numerous individual national economies. Semi-fabricated aluminium products are manufactured at a rate of 45 million tonnes per year, with 14 million tonnes coming from recycled aluminium. More than one million people are employed directly by the aluminium sector, and four times as many are employed indirectly by downstream and service businesses. Hindalco was the main company of the Aditya Birla Group, an Indian multinational conglomerate with \$14 billion in yearly revenues and a market valuation of more than \$23 billion.

Hindalco is a key player in the primary aluminium industry, with a product line that includes high-quality aluminium for a variety of industrial uses. Hindalco's aluminium metal is approved as a registered brand under the London Metal Exchange's (LME) high-grade aluminium contract.

Ingots:

Smelting is used by Hindalco to create high-purity ingots. We also make alloy ingots in a variety of grades, which are utilised in the auto sector and in electrical applications to make castings. These are remelted and processed into a wide range of products for a variety of downstream applications.

Wire rods:

Wire rods are made by Hindalco in a continuous casting and rolling process. Cables, ACSR, and AAC conductors are all made with electrical conductor (EC) wire rods. AAAC conductors are made from alloy wire rods.

Billets:

Hindalco's aluminium billets are made utilising a cutting-edge Wagstaff casting process that incorporates AirSlip technology. These billets are of excellent quality and have a smooth polish. They're mostly utilised to make extrusions and forgings.

Hindalco's aluminium smelting activities are located in Uttar Pradesh's Renukoot, Odisha's Aditya Aluminium, Madhya Pradesh's Mahan Aluminium, and Odisha's Hirakud. In a given year, all of these factories generate roughly 1.3 million tonnes of primary aluminium.

Hindalco is India's leading foil and foil laminates manufacturer, offering a wide range of plain, laminated, lacquered, and printed foil and foil laminates for a variety of packaging applications. Hindalco operates a sophisticated and well-equipped factory in Mouda, Maharashtra, near Nagpur. The cutting-edge foil rolling facility uses cutting-edge technology to produce a wide range of high-quality foils up to a thickness of 6 micron.

A casting facility at the Mouda complex melts cold aluminium, casts it, and rolls it into foil. Mouda's three German mills are equipped with "Automatic Shape & Gauge controls" to ensure high-quality production and to fulfil the needs of sophisticated end applications. The mills run at high speeds and may produce foil with widths of up to 1,620 mm. Environmentally friendly manufacturing is ensured through support facilities. A well-equipped laboratory, together with strict process controls, ensures the highest level of quality at every stage of the manufacturing process. For the production of House Foil rolls, jumbo reels of our 10 mic to 18 mic foil are used as stock. Semi-rigid containers are made from SRC material in a variety of thicknesses and widths.

Hindalco's own house foil brands, "Freshwrap" and "Superwrap," are well-known and widely sold. Hindalco also offers a cutting-edge paper laminator that use solvent-free glue lamination and water-based ink coating technology. Hindalco offers plain and coloured cigarette coil laminates from this laminator, which are of high quality and environmentally friendly. Pharmaceutical foil laminated, coated, and printed for strip and blister packaging of tablets are also available. Our full line of products is not only well received in India, but it is also regularly exported to several nations.

QUALITY CONTROL:

Hindalco maintains and develops quality as a "global packaging portal" by taking a pragmatic and economic approach to research and innovation. This ensures that our customers get the most bang for their buck.

Our foil and packaging business is able to compete aggressively in both domestic and global markets thanks to ISO 9001 and ISO 14001 certifications, as well as decades of experience and competence.

We also have a DMF number (Drug Master File) for pharmaceutical packaging from the US FDA (Food and Drug Administration).

Contact angle measurement, an Erichsen Cupping Test Machine, an impact tester, Measurex, infrared spectrophotometry, and computerised colorimetry are all available in each of the three units' laboratories.

As a result, we have a variety of facilities for long-term development under one roof. Our products are underpinned by end-to-end technologies that assure high quality and long-term sustainability in a continually changing industry, allowing us to keep up with the newest production trends.

Hindalco is a major player in India's extrusions business. Our extrusions are constructed from high-quality billets made from virgin in-house metal and come in a variety of alloys, including hard alloys and special alloys for the defence and space sectors. In India, we have two extrusion plants: one in Renukoot, Uttar Pradesh, and the other in Alupuram, Kerala, each capable of producing 60,000 tpa of products with diverse specifications and dimensions. Both plants have well-established manufacturing procedures and quality assurance systems that have been fine-tuned over the course of five decades of operation. Hindalco Extrusions is a well-known name in a variety of industries, including architecture, electrical, industrial, transportation, defence, and consumer durables. Extrusions are exported to the United States, Canada, Germany, the United Kingdom, France, the Netherlands, South Africa, the United Arab Emirates, Singapore, Malaysia, Sri Lanka, and Bangladesh.

LITERATURE REVIEW:

Akojiam Sunildro L.S. Sunildro L.S. Sunildro L.S. Sunildro L.S. (2012) The Indian aluminium industry is one of the country's most important industries. Among the other industries in India, the aluminium industrial sector saw a lot of success in the past decade. The aluminium industry in India is growing rapidly, and technological advancements are accelerating that expansion. The business has a promising future because India's aluminium consumption is very low. It has the potential to become one of the top participants in the world aluminium market. The industry may decide to employ the excess production to meet the global demand for aluminium, which is used in a variety of applications such as aeroplane manufacturing, vehicle manufacturing, cutlery, and so on. India has the fifth greatest bauxite reserves in the world, with resources totaling roughly 3 billion tonnes, or 5% of global reserves. India's proportion of global aluminium capacity is now around 3%. This article aims to determine the breadth and potential of the aluminium sector not just in India, but around the world. To analyse the Indian aluminium industry as thoroughly as feasible, strategic models such as SWOT analysis and Michael Porter's five Forces theory are employed.

S R Vishwanath (2009) An Indian corporation made a high-profile cross-border acquisition, according to the case. Students must evaluate the firms' strategic motivations and do a valuation analysis. The implementation of alternative valuation models is taught to students. Hindalco Industries Ltd announced the completion of its acquisition of Novelis on May 15, 2007. With the deal, the business became the world's largest Aluminum Rolled Products Company, one of Asia's top primary aluminium manufacturers, and India's leading copper producer. Hindalco would run Novelis as a subsidiary. On February 10, 2007, the Company and Novelis reached an agreement for the Company to be acquired in an all-cash deal valued at about \$6.0 billion. Novelis shareholders would get \$ 44.93 in cash for each outstanding common share under the terms of the agreement. At a special meeting on May 10th, Novelis shareholders approved the transaction.

Dr. Vijayalakshmi Vijayalakshmi Vijayalakshmi Vijayalaks (2013) Aluminium is one of the world's most popular materials. The aluminium industry makes a significant contribution to the gross domestic product. Aluminium is used in a variety of industries, including transportation, power, and housing. HINDALCO is one of the world's largest aluminium producers. With the aid of ratios, this article examines HINDALCO's long-term solvency condition. Solvency refers to a company's capacity to meet long-term obligations. Equity shares, preference shares, and debentures are used to raise funds for the company's operations. Aditya Birla Group founded Hindustan Aluminium Corporation in 1958, and it has since evolved to include a number of subsidiary firms. Stakeholders will benefit from knowing the company's solvency situation in order to plan for future expansion and modernization. With this in mind, a research was undertaken to assess HINDALCO Limited's solvency.

Payal Apujani, Goutam Dutta, and Narain Gupta (2016) The manufacturing business is currently seeking for a competitive advantage and higher earnings all around the world. A manufacturing company must use instruments that provide it a particular competitive advantage in order to stay competitive. The aluminium manufacturing process, the global and Indian aluminium industries, and technological advances in the aluminium sector are all covered in this study. We examine a literature review of various operation research models in the aluminium industry in the second section. From 1967 to the present, the survey was conducted using published research publications. The goal of this research is to look at models that are relevant to the aluminium sector, either in terms of approach or in terms of application. The study identifies OR/MS prospects in the aluminium industry as well as important research challenges. It also encourages scholars to look into other operations research and management science topics relevant to aluminium manufacturing.

Alcan Singen GmbH, Bruno G. Ruettimann (2004) Globalization, particularly the lifting of the Iron Curtain, has had a profound and lasting impact on the aluminium markets, particularly the extrusion business. Indeed, the market logic and transaction scheme are undergoing significant modifications, and formerly effective business models may now be altered across a wider range. What impact will these structural changes have on the extrusion industry in the region? What impact will a "global market price" for semi-finished items have on the extrusions competitive system? Will the logic of the somewhat fragmented extrusion market change as a result of this new global competitive threat? Is it even possible for a new paradigm to emerge and become sustainable? It also provides a range of viable methods for the Western extrusion industry to deal with the changing environment. For the extrusion industry, the synthesis is described in 10 globalisation postulates.

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OBJECTIVES OF THE STUDY:

The aim of the investigation is to forecast the demand of aluminium for next two decades. The aim was achieved by addressing the following specific objectives.

1. To predict the production of Aluminium for the next 20 years in india which one of the well known company HINDALCO.
2. To explore the financial statement for the year 2010-11 to 2020-21 of HINDALCO.
3. There will be a lot of innovation under the aluminium sector in which HINDALCO play a very big role.

METHODOLOGY OF STUDY:

The present study is based on secondary data and cover the period from 2011-12 to 2020-21. To investigate the objectives of study, the data of HINDALCO has been drawn from ANNUAL REPORT 2020-21. And we have considered here CSR, Key area of advancement etc..

	2020-21	2019-20	2018-19	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13	2011-12
Profitability										
Sales and Operating Revenues	1,31,985	118,144	130,542	115,820	102,631	101,202	106,696	90,007	82,243	82,549
Less: Cost of Sales	1,14,311	103,794	115,042	101,899	90,183	92,387	97,751	81,721	74,406	74,365
Operating Profit	17,674	14,350	15,500	13,921	12,448	8,815	8,944	8,286	7,837	8,184
Other Income	1,222	1,186	1,127	1,105	1,111	1,189	1,105	1,017	1,012	783
Less: Depreciation, Amortization and Impairment	6,766	5,135	4,766	4,607	4,469	4,507	3,591	3,553	2,861	2,864
Less: Interest and Finance Charges	3,738	4,197	3,778	3,911	5,742	5,134	4,178	2,702	2,079	1,758
Profit before Share in Equity Accounted Investments, Exceptional Items and Tax	8,392	6,204	8,083	6,508	3,348	362	2,280	3,049	3,909	4,345
Share in Profit/ (Loss) in Equity Accounted Investments (Net of Tax)	5	4	-	(125)	(25)	172	175	67	(16)	50
Profit before Tax and Exceptional Items	8,397	6,208	8,083	6,383	3,323	534	2,455	3,116	3,893	4,395
Exceptional Income/(Expenses) (Net)	(492)	(284)	-	1,774	(8)	(577)	(1,940)	(396)	-	-
Profit/ (Loss) before Tax from Continuing Operations	7,905	5,924	8,083	8,157	3,315	(43)	515	2,720	3,893	4,395
Less: tax expenses	2,723	2,157	2,588	2,074	1,433	498	256	525	886	786
Profit/ (Loss) from Continuing operation	5,182	3,767	5,495	6,083	1,882	(541)	258	2,195	3,007	3,608

Profit/(loss)from discounted operation (net of tax)	(1,699)	-	-	-	-	(161)	-	-	-	-
Profit /loss before non-controlling interest	3,483	3,767	5,495	6,083	1,882	(702)	258	2,195	3,007	3,608
Less:non-controlling interest in profit/loss	-	-	(1)	-	(18)	(451)	(596)	20	(20)	211
Net profit/(loss)for the period	3,483	3,767	5,496	6,083	1,900	(251)	854	2,175	3,027	3,397
Business Reconstruction Reserve (BRR) #										
Expenses adjusted against BRR (Net of Tax)	-	-	-	-	-	682	97	86	-	500
Profit/ (Loss) for the Period had the expense not adjusted Against BRR	3,483	3,767	5,496	6,083	1,900	(933)	757	2,089	3,027	2,896
Gross fix assets (excluding CWIP)	157,052	140,334	130,142	125,094	121,186	123,522	101,940	87,914	60,054	53,961
Capital Work-in-Progress (CWIP) **	10,202	7,721	4,098	2,063	1,814	4,214	14,111	23,059	33,834	22,798
Less: Accumulated Depreciation, Amortization and Impairment	56,783	51,139	44,283	40,006	36,499	37,849	29,981	26,750	22,126	18,661
Net Fixed Assets	110,471	96,916	89,957	87,151	86,501	89,887	86,070	84,223	71,763	58,098
Investments	17,133	9,411	9,012	10,781	15,157	12,438	12,346	12,961	12,601	10,551
Other Non-Current Assets /(Liabilities) (Net)	(11,794)	(12,407)	(9,581)	(8,497)	(6,737)	(8,859)	(7,235)	(6,924)	(6,573)	(5,758)
Net Current Assets	16,711	31,664	20,538	17,499	14,961	15,074	16,571	18,289	16,901	11,771
Capital Employed:	132,521	125,584	109,926	106,934	109,882	108,540	107,752	108,549	94,692	74,662
Less: Loan Funds	65,978	67,257	52,416	52,074	63,817	67,552	68,467	66,163	57,603	41,042
Less: Non-Controlling Interest	10	10	9	9	6	381	956	1,781	1,759	1,709
Net Worth	66,533	58,317	57,501	54,851	46,059	40,607	38,329	40,605	35,330	31,911
Net Worth represented by:										
Equity Share Capital	222	222	222	223	223	205	207	206	191	191
Other Equity:										
Share Warrants	-	-	-	-	-	-	-	6	541	541
Equity Component of Compound Financial Instruments	4	4	4	4	4	3	-	-	-	-
Reserves and Surplus	59,717	55,577	52,599	47,644	41,770	36,443	38,122	40,393	34,597	31,179
Other Comprehensive Income	6,590	2,514	4,676	6,980	4,062	3,956	-	-	-	-
	66,533	58,317	57,501	54,851	46,059	40,607	38,329	40,605	35,330	31,911

*Balance Sheet items are translated at closing exchange rate and Profit and Loss items are translated at average exchange rate.**Including Intangible assets under development.#Financial restructuring scheme formulated by the Company under the provisions of the Companies Act, approved by the Bombay High Court, to deal with various costs associated with its organic and inorganic growth plan.@ Figures for FY 2020-21, FY 2019-20, FY 2018-19, FY 2017-18, FY 2016-17 and FY 2015-16 are as per Ind AS compliant financial statements. Previous periods figures are as per Previous GAAP financial statements.

RESOURCE OPTIMISATION:

Our raw material consumption for the reporting period amounts to 9,641.52 thousand MT. Total packaging material consumption stood at 8,394.94 MT, out of which 5,992.55 MT was wood and 1,088.46 MT was paper.

The inherent properties of Aluminium make it suitable for recycling and given the numerous methods available, it is possible to explore new avenues of recycling it. This provides us with many opportunities to adopt ways of recycling our Aluminium scrap or residue.

STOCK PRICE DATA:

Fy21	Bombay Stock Exchange				National Stock Exchange				Luxembourg Stock Exchange		
	High (In `)	Low	Close	Volume (In Nos)	High (In `)	Low	Close	Volume (In Nos)	High In US\$	Low	Close
Mar-21	361	305	327	1,03,64,853	361	305	327	30,25,21,420	4.94	4.08	4.48
Feb-21	354	227	340	2,25,18,821	355	227	340	46,48,65,247	4.84	3.52	4.60
Jan-21	276	221	226	1,10,57,311	275	225	226	29,39,13,813	3.74	3.10	3.10
Dec-20	256	223	241	2,11,40,019	256	223	241	36,19,11,496	3.48	3.12	3.28
Nov-20	231	168	226	1,77,20,979	231	168	226	42,57,74,333	3.14	2.36	3.04
Oct-20	188	165	171	91,14,710	188	165	171	31,53,17,042	2.54	2.00	2.28
Sep-20	197	155	175	98,50,965	197	154	175	38,72,67,226	2.64	2.16	2.38
Aug-20	203	161	185	1,50,81,443	203	161	185	39,91,55,771	2.68	2.30	2.52
Jul-20	170	145	163	1,45,87,547	171	145	163	35,40,38,738	2.26	1.94	2.18
Jun-20	160	137	146	1,62,25,340	160	136	146	36,04,00,048	2.10	1.85	1.94
May-20	141	114	139	1,33,44,728	141	114	139	34,61,07,134	1.90	1.52	1.84
Apr-20	132	89	130	1,97,69,509	132	88	130	38,56,59,900	1.74	1.32	1.73

SUPPLIER CODE OF CONDUCT:

The Aditya Birla Group's goal is to procure sustainable goods and services that represent the best price, quality, delivery, and technological offering. Every Aditya Birla Group Company shall therefore endeavour to:

- Ensure compliance to the local, national, and international legislation within the supply chain adherence to the ABG Code of Global Business Ethics and Compliance Standards and conformance to the ABG

sustainability Framework requirements.

- Create a supply chain that is resilient and viable amidst risks and opportunities potentially arising from the external legal, technical, environmental, and societal megatrends as part of our business future-proofing programme.
- Build capability within the supply chain and work towards creating best-

in-class supply chain solutions.

- D) Promote resource conservation, use of alternative materials and renewable energy, water stewardship, safety, health, respect for human rights and elimination of child and forced labour across the supply chain.
- E) In order to ensure a sustainable value chain, we work closely with our supply chain partners. All our supply chain partners are expected to abide by the Supply Chain Code of Conduct. All suppliers and vendors undergo a periodic assessment with respect to the Code of Conduct. We also encourage our suppliers to develop their environment and social management systems.

Hindalco's suppliers are quantitatively assessed against their ESG performance.

In FY 2017-18, the Mouda plant began exporting light gauge (LG) foils for flexible packaging, insulation, lidding, and house foil. The low ultimate tensile strength (UTS) of LG foils was one of the factors preventing the LG export from scaling up. High UTS material is required by customers with high-speed rewinding machines and laminators to avoid web breakage during the operation. Customers who use softer foils must run their machines at a lower speed, lowering their productivity. For the production of LG foils, a revised rolling practise was devised by modifying the thermal treatments and pass schedule. The trial's findings revealed a significant increase in strength without a negative impact on surface finish, rollability, or recovery. In comparison to current practise, the revised practise resulted in energy savings. Production was scaled up for both domestic and export customers based on positive customer feedback. The innovation has been implemented for medium gauge blister and pharma products as well, due to the attractiveness of the revised route.

CORPORATE SOCIAL RESPONSIBILITY COMMITTEE (CSR):

The Corporate Social Responsibility Committee comprises of the following members:

Mrs. Rajashree Birla – Chairman, Mr. Satish Pai – Member, Mr. A.K. Agarwala – Member, Mr. D. Bhattacharya – Member, Mr. Y. P. Dandiwal – Member

The terms of reference of Corporate Social Responsibility Committee broadly comprises of following:

- (a) Formulate and Recommend CSR Policy to the Board indicating the activities to be undertaken by the Company as specified in Schedule VII of Companies Act, 2013 and monitor the policy from time to time.
- (b) Recommend the amount of expenditure to be incurred on the activities referred to in clause (a).
- (c) Formulate and recommend to the Board, an annual action plan pursuant to the CSR Policy.

HINDALCO – SWOT ANALYSIS:

Weakness:

- Commodity product with a smaller share of VAP currently
- Upstream business linked to LME volatility

Opportunities:

- Immense headroom for a growing market in India; Aluminium consumption in India at 1/12th of global average
- Rising Aluminium penetration in Building & Construction, Automotive, Packaging, and Transportation bodes well for growing VAP demand
- Substitution opportunity versus steel, uPVC, wood, among others.

Threats:

- LME, forex and raw material price volatility
- Competition from China
- The threat of rising imports of scrap and other VAP to India from the Free Trade Agreement (FTA) countries
- Domestic availability/ shortage of resources like coal and bauxite

Strengths:

- Integrated business model generating healthy cash flows
- The dominant player in India across upstream and downstream
- Utkal - among the world's most economical and efficient Alumina producers; capacity expansion of 500 Kt in progress and Utkal capacity to reach 2.0 Mt

- Increased focused on Value Added Products (VAP) to be further de-linked to the global aluminium prices.

CONCLUSION:

Aluminium's closed loop economy has numerous advantages, both in terms of resource conservation and environmental impact. In fact, switching to secondary production is the only way to significantly reduce the amount of energy used in the aluminium industry. For the most part, aluminium recycling rates are already quite high. With an annual consumption of 88 million tonnes, aluminium is the world's second most used metal after steel (including scrap). The aluminium industry is divided into two parts: upstream and downstream. From raw materials, the upstream sector produces primary or "unwrought" aluminium. Primary aluminium, which comes in the form of ingots and billets, is the building block for aluminium products. The downstream segment of the industry consists of the processing of aluminium into semi-finished aluminium goods such as rods, bars, rolled products, castings, forgings, and extrusions. Depending on the final product's specifications, these aluminium products can be made from primary or secondary aluminium (recycled), or a combination of both.

Aluminium is a long-lasting metal that can be recycled many times. Today, aluminium is one of the most recycled and recyclable materials available. Refineries and remelters are part of the aluminium recycling industry, as are collectors, dismantlers, scrap merchants, and processors who deal with scrap collection and treatment. Recycling aluminium is not only cost-effective, but also energy-efficient and environmentally friendly. In the built environment, aluminium is a highly recyclable material, possibly the best. Aluminium is also known as 'Future Metal,' 'Strategic Metal,' and 'green Metal.'

As the demand for aluminium has risen in tandem with that for steel, Hindalco's role in the private sector has grown significantly.

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