

Alumina Industry Outlook and Growth Prospects

Alumina and Growth | Incumbent Industries | Emerging Applications

Presented by

Saurabh Khedekar

CEO – Alumina Business, Hindalco Industries

Event

**Alkali Association of India
Conference 2026**



Big Picture: Alumina Industry Outlook

Global & India

Two Demand Engines Will Shape Alumina Led Alkali Growth This Decade

Global Outlook

- Demand growth for aluminium
- Water treatment, Industrial and Refractory, Advanced Ceramics and Electronics
- Energy transition creates green & EV value chain opportunities
- Asia-Pacific continues to drive incremental growth

India Outlook

- Strong domestic manufacturing push and low per capita Aluminium Usage
- Bauxite reserves – Top 5 globally
- Specialty Applications growing at a fast pace

The Two Demand Engines

1

Alumina

Volume anchor – largest single end-use

2

Co-Usage with Alumina

Incumbent Industries and Emerging Applications

Alkali in Alumina

Anchor Demand Engine

Alumina: The Backbone of Caustic Soda Demand

Role of Alkali

Caustic soda is the core reactant in the Bayer process. Essential for digestion, impurity removal & liquor regeneration

Factors	Range
Caustic Consumption KG/ MT	42 - 140
Silica %	1.5% - 4.9%
Alumina Content %	32.3% - 39.3 %

Raw Material Cost Share

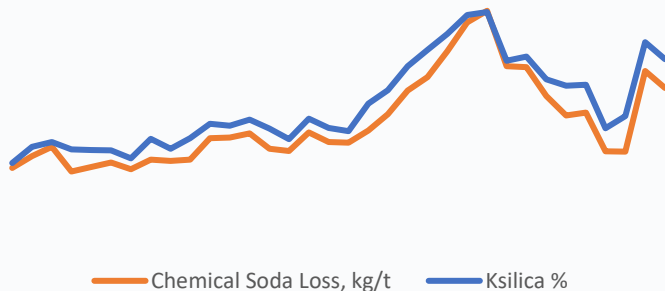
15-20%

Consumption Factor

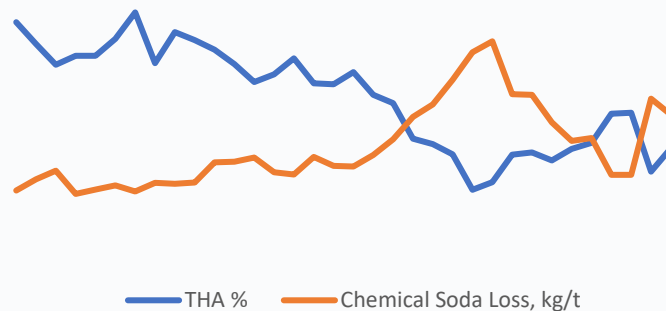
42Kg -140 Kg of Caustic used in 1 MT of Alumina Production

Caustic consumption in Alumina depends on several factors including Silica, Alumina content, moisture and more.

Caustic Consumption vs Silica%



Caustic Consumption vs Alumina Content%



Alumina Demand Outlook

Refinery Capacity	2026 Capacity (KT)	2026 Production (KT)	2030 Capacity (KT)	2030 Production (KT)	Caustic Demand (2026), KT	Caustic Demand (2030), KT
Hindalco	3700	3,700	4550	4550	148-518	182-637
Vedanta	5000	3,230	6,000*	5,200	130-452	208-728
Nalco	2,280	2,200	3,280	3,000	88-308	120-420
Anrak	800	600	1,500	910	33-116	36-127
Total	12,480	9,960	15,330	13,660	398-1394	546-1912

- Alumina output increases from **9,960 KT (FY26)** to **13,660 KT (FY30)**, reflecting **~8.2% CAGR growth**.
- Hindalco has announced addition of 850 KT in the production capacity, backed by strong domestic market growth potential
- Vedanta has announced 1000 KT in production capacity, reaching their total capacity to 6000KT by 2030
- NALCO is set to commission a 1 million tonne per annum (MTPA) expansion of its Damanjodi alumina refinery by June 2026

A strong demand for alumina and its downstream derivatives serves as a catalyst and growth engine for the **Alkali** industry, reinforcing the need for deeper cross-industry collaboration.

Alkali in Incumbent and Emerging Industries

Incumbent Industries and Emergent Applications are growth drivers for increase in Alumina consumptions, hence act as growth frontiers for Alkali usage

Incumbent Industries (GDP-linked, steady)

 Soaps & Detergents

4-5% 

 Water Treatment

6-8% 

 Bulk Chemicals
PVC

4-6% 

 Glass & Ceramics

4-5% 

Sector	Growth Driver	Alkali Interface
Soaps & Detergents	Urbanization, hygiene	Caustic soda for saponification
Water Treatment	Higher environmental norms	pH control, coagulation, purification
PVC & Bulk Chemicals	Infra & manufacturing	Feedstock chemical for polymer & chlorine chain
Glass & Ceramics	Housing, infra	Alkaline fluxing & purification

Emerging Application (High Purity, High Growth)

 EV Batteries & Recycling

20-25% 

 Specialty Alumina

10-12% 

 Electronics & Semiconductors

15-20% 

 Circular Economy

12-15% 

Emerging Sector	Growth Driver	Alkali Interface
EV Batteries & Recycling	Hyper-growth	High-purity alkali for cathode material + recycling processes
Electronics & Semiconductors	High-purity, high-margin	Ultra-pure NaOH/KOH for chip etching, wafer cleaning
Specialty Alumina	Moving up the value curve	Tailor-made alkali for advanced alumina grades
Circular Economy (E-waste, recycling)	Structural rise	Alkali used in safe metal extraction & recovery

Hindalco's ESG Commitment

Our commitment to



Continued Emphasis on Recycled Content
Net Zero By 2050

Zero Waste to Landfill By 2050
Water Positivity at all Locations by 2050
No Net Loss on Biodiversity By 2050



Zero Harm- Occupational Health & Safety
Diversity & Inclusion

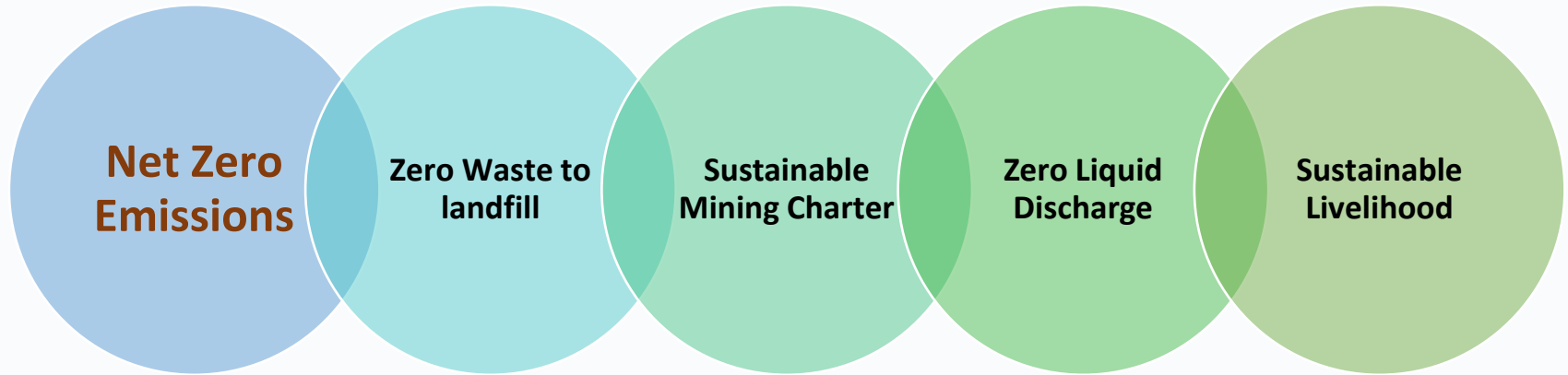
Commitment To Community & Society
With Creation Of Sustainable Livelihoods
Human Rights Affirmation



Highest Level of Values & Transparency
Strict Adherence of Code of Conduct

Best in Class in Corporate Governance
Highest Levels of Information & Cybersecurity
Customer Centricity & Supplier Centricity

Wholesome Sustainability Agenda



Sustainability Initiatives: Green Alumina

Belagavi plant is on its path to become 1st plant in the world to achieve 100% Green Alumina Production



Installation of *Biomass boiler*

Phase 1 at Belagavi

~42%

of steam demand
fulfilled

~24%

of current power
demand fulfilled

0% emissions

Sustainable way of recycling
agricultural residues



Power from *Renewable Sources*

21^{MW}

Power Energy –
In Q4 FY24

9^{MW}

Solar Power Energy
Sourcing project in
plan



Natural Gas as *source of energy in Calciners*



Switched to NG
from Furnace oil



High-whiteness
in Alumina



Low Sulphur
content in
Alumina



Increases operational
efficiency

Sustainability Initiatives: Emissions Management



FRESH WATER CONSUMPTION



53% y-o-y reduction of fresh water consumption per annum (from FY19)



Lowest ever fresh water consumption achieved in FY25 at 1.95T/T and FY'26 YTD is at 1.86 T/T



ZERO LIQUID DISCHARGE MANAGEMENT



Lagoon for treated water - 1.75 lacs m3



Processed effluent collection pond - 6.75 lacs m3



Sewage Treatment Plant – 450 KL/day, Treated effluent used for gardening



RED MUD MANAGEMENT



Promoting circular economy by shipping bauxite residue to 14 cement companies



FY24 Red Mud utilization of 119% vs generation, FY 25 109% and FY'26 YTD is at 147%



Pioneers in the Vegetation on Bauxite Residue Pond

RESULTS:

325 ML less water consumed compared to last year

RESULTS:

14 Ha Sustainable Vegetation
Green cover of 44%

Pioneering Innovation in Sustainability

Solving for 130-year-old industry challenge

Red Mud is a hazardous waste generated **3x** of alumina produced



Turning Challenge into Opportunity

10 years of R&D efforts to re-purpose Red Mud into raw material for the Cement industry



Laterite/ Low grade Bauxite

Al_2O_3 – 28-36%

Fe_2O_3 – 22-35%

PRESENT



Red Mud

Al_2O_3 – 17-20%

Fe_2O_3 – 37-42%

PROPOSED

MAKING A DIFFERENCE!

Zero dumping at 3 sites!

12.5 million tons
of natural resources conserved so far!

	Renukoot	Muri	Belagavi
2019	7%	4%	33%
2022	108%	100%	100%
2023	112%	121%	163%

Hindalco in S&P Global Sustainability Yearbook 2025

S&P Global
Ratings



Hindalco with
a score of 89
maintains a
decisive lead
over **peers**



Dow Jones
Sustainability Indexes

2021 2022 2023 2024 2025

World's most sustainable Aluminium company

S&P CSA Score (Hindalco Vs Peers)

Companies

CSA Score 2024

CSA Score
2025*

Hindalco Industries Limited	India	87	89	▲
Norsk Hydro	Norway	66	65	
Vedanta Group	India	76	69	
Alcoa Corp	US	57	NA	

**Rating for the year 2025 declared on December 19th 2025, year book to be released on 11th Feb 2026*



The S&P Global
Sustainability
Yearbook 2025 got
released in Feb
2025.



Hindalco is in the
**Top 1% S&P Global
ESG Score in the
Aluminium
Industry.** Only 3
Indian companies
are in the Top 1%
S&P Global ESG
score



**Total of 65
companies in Top
1% across all
Industries.** 780
companies are
included in
yearbook 2025 out
of 7690 companies
assessed

Building a Resilient & Globally Competitive Alkali Ecosystem



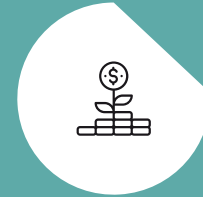
Strengthen Alumina – Alkali Partnership

- Long-term supply agreements
- Co-location Industrial Clusters
- Reduce Import dependency



Supply Chain Solutions

- Logistics Infrastructure that is failsafe
- Safety, transport and storage excellence program



Policy & Sustainability

- ESG-compliant manufacturing
- Joint sustainability initiatives
- Advocacy and joint policy work to expand the pie

"Individual talent can win you one match, but collaboration will win you a championship"



Thank You