NATIONAL ALUMINIUM COMPANY LIMITED (NALCO)
invites
EXPRESSION OF INTEREST (EOI)
from

Rotary Kilns Suppliers/ Technology Providers for
NALCO's Special Grade Alumina Plant

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EOI Submission By Date: 16.12.2025

National Aluminium Company Ltd.

NALCO Bhavan, P/1, Nayapalli,
Bhubaneswar, Odisha -751013, India

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1. Background & Objective

National Aluminium Company Limited (NALCO), a 'Navratna' CPSE of Govt. of India, was established on 7th Jan' 1981, with its registered office at Bhubaneswar, Odisha in India. It is one of India's largest integrated complexes in the aluminium value chain having bauxite mining, alumina refining, aluminium smelting including power generation and coal mines.

The Company operates:

- 6.825 million TPA Bauxite Mine and a 2.1 million TPA Alumina Refinery located at Damanjodi, Koraput district, Odisha.
- 0.46 million TPA Aluminium Smelter, a 1,200 MW Captive Power Plant and 4.0 million TPA Utkal D&E Coal mines at Angul, Odisha.

As a part of its green initiatives, NALCO has installed 198 MW Wind Power Plants at various locations across India and 1,020 kWp roof top Solar Power Plants at its premises, contributing its efforts towards carbon neutrality.

NALCO is registering strong growth in its performance year on year. Recently, in FY 2024-25, the Company achieved its highest ever revenue of Rs 16,788 crore and highest ever net profit of Rs 5,325 Crore.

The Company has a vison "*To be a Premier and Integrated company in the Aluminium value chain with strategic presence in Mining both domestic & global, Metals and Energy sectors*". Driven by its Vision, the Company is executing expansion projects to grow in its core business in the aluminium value chain.

- Bauxite mining: The Company is taking steps to open its new Pottangi bauxite mines which will increase the mining capacity by additional 3.5 million TPA.
- Further, NALCO is adding a 5th stream of alumina refinery which will increase the refining capacity by 1.0 million TPA by the next financial year.

NALCO Plans:

While a major portion of alumina produced at NALCO's Damanjodi refinery is metallurgical grade, there exists a significant and growing demand, both in domestic and international markets, for non-metallurgical grades of alumina. These special grade alumina products are widely used in advanced ceramics, refractories, abrasives, and other high-value applications.

Aiming to broaden its product spectrum and enhance value addition across the alumina value chain, NALCO intends to expand into the production of these special grade alumina products. Earlier, NALCO operated a tunnel kiln facility for high-alpha alumina production; it now plans to set up a rotary kiln facility in its place. To achieve this goal, the Company seeks to establish partnerships with reputed technology

providers and industry collaborators.

In line with this initiative, NALCO invites Expressions of Interest (EOI) from prospective partners for setting up and operating a rotary kiln facility dedicated to the production of high-alpha alumina/Special Grade Alumina (SGA) under a ***BOOT (Build–Own–Operate–Transfer)*** model. This facility will replace the existing tunnel kiln system at Damanjodi. The proposed facility will use advanced technology and expert support to produce high-quality alumina products that meet international standards.

The **purpose of this EOI** is to identify competent suppliers and industry collaborators with expertise in high-alpha alumina production through rotary kiln. The selected parties will subsequently be invited to participate in a detailed Request for Proposal (RFP) process for finalising BOOT model arrangements. Through this, NALCO aims to finalise suitable partners for establishing and operating the proposed rotary kiln facility.

2. Indicative Scope of work

The following outlines the envisaged scope under the proposed partnership for setting up and operating a rotary kiln facility for production of high-alpha alumina. The selected partner(s) will be responsible for:

- Facility Setup & Operation: Designing, financing, constructing, owning, and operating a 50,000 MT/yr capacity rotary kiln facility at Nalco's Alumina Refinery, Damanjodi for high-alpha alumina production. The installed facility will be transferred to NALCO at the end of the agreed BOOT period. NALCO will supply utilities and raw materials, and the selected partner will process these into high-alpha alumina and supply the product back to NALCO at an agreed conversion cost during the operation period of plant.
- Dismantling, Buy-Back and/or disposal: Taking responsibility for dismantling of the existing tunnel kiln and associated facilities at Damanjodi and arranging buy-back/repurposing/disposal as part of the partnership scope. The existing tunnel kiln, established in 2000, has an installed production capacity of 15,000 MT/yr of high-alpha alumina.
- Technology & Engineering: Deployment of proven rotary kiln technology, including process design, equipment configuration, raw material preparation, and kiln operation parameters, to ensure production of coarse and fine grades of high-alpha alumina as specified in this EoI (***Annexure-II***) but not limited to these grades. NALCO may also assist in deciding operating parameters and analytical support to ensure product quality.

- Environmental & Safety Compliance: Incorporation of best-available technology for emission control, waste minimisation, and energy efficiency, while ensuring adherence to all statutory environmental and occupational safety standards.
- Obtaining all necessary statutory clearances and approvals, including those from the State Pollution Control Board and other regulatory authorities, prior to commissioning and operation of the facility.
- Timeline & Handover: Delivery schedule for commissioning, stabilization, and performance acceptance, followed by eventual transfer of the facility to NALCO at the end of the BOOT period in mutually agreed condition.
- Technology for producing low soda alumina and Tabular Alumina is also to be provided for future expansion of SGA Plant.

The above scope is indicative and may be further refined during the subsequent phase.

3. Pre-Qualification Criteria for Selection:

The prospective supplier must meet all of the following minimum qualifying criteria:

a) The vendor must have supplied, commissioned and/or operated at least one rotary kiln-based plant for the production of high-alpha alumina, anywhere in the world.

b) The said project must have been completed and in commercial operation for a minimum period of three years as on this EoI submission due date.

c) Bids may also be submitted through a consortium or association. In such cases, at least one consortium member must meet the experience requirements stated in points (a) and (b).

Documentary evidence, such as copy of work order, completion certificate, and other relevant documents, to demonstrate compliance with the above criteria must be submitted.

4. Submission Requirements & Format

The EOI submission must include the following, duly signed by the authorised signatory of the applicant:

a) Completed Annexures – Filled-in Technical Questionnaire as per **Annexure-I** (copy enclosed), signed and stamped by the authorised signatory.

b) Company Profile – Including organisational structure/chart, core areas of expertise, details of global presence, and relevant project case studies with contactable client references.

c) Compliance Statement – A point-wise statement confirming fulfilment of each Minimum Qualification Requirement as specified in Section 3, along with supporting documentary evidence.

Note on Submission Format:

- Language: All submissions shall be in English. Supporting documents in any other language must be accompanied by an authenticated English translation.
- Units & Standards: All technical data shall be provided in SI units. Any deviation must be clearly indicated with equivalent SI units.
- Authorisation: All pages of the submission must be signed and stamped by the authorised signatory of the applicant.
- Completeness: Submissions with incomplete information, missing annexures, or without required documentary evidence are liable to be summarily rejected.
- Confidentiality: All information submitted will be treated as confidential and will be used solely for the purpose of evaluation of the EOI.

5. Evaluation & Shortlisting

- Initial evaluation will be based on the Annexure responses, eligibility, reference checks and commercial disclosure.
- Shortlisted parties will be invited to submit a detailed binding proposal (RFP) subsequently and may be requested to provide presentations, inputs as per an evaluation matrix, technical demonstrations, and site visits etc.
- Evaluation will be based on a matrix including technical robustness, commercial viability, sustainability features, global references, and ability to support EPC/DPR stages.

6. Timeline

All submissions must be received by date 16.12.2025. Late submissions will not be considered.

7. Terms & Conditions

7.1 Confidentiality & NDA

NALCO reserves the right to sign a mutual Non-Disclosure Agreement (NDA) with shortlisted respondents prior to sharing site-specific data, DPR details or to facilitate site visits and deeper technical discussions.

7.2 Clarifications

Any clarifications may be requested in writing to Shri Vinod Kumar Verma, DGM(R&D) at the Email address: vinod.verma@nalcoindia.co.in and Mobile: +91- 9437479222 by 01.12.2025. NALCO may issue clarifications that will be shared with all prospective respondents.

7.3. Disclaimer on no Commitment

This EOI is for information gathering and shortlisting only. It does not constitute a commitment by NALCO to proceed with any licensor or to issue an RFP. NALCO reserves the right to accept/reject any or all submissions without assigning reasons.

7.4 General Conditions

i. No EMD is required to be submitted by the Party.

ii. NALCO shall not be liable for any mistake or error by the Party in respect of the submissions.

iii. NALCO will not be responsible for any related loss to the parties due to delay/ cancellation etc. of this EOI process.

iv. The Party shall bear all costs associated with the preparation or delivery of its EOI.

v. NALCO reserves its right to call for original of the supporting documents for verification if so deemed fit and also cross-check for any details as furnished by the Party from their previous clients etc. The Party shall have no objection in this regard.

vi. NALCO will examine the EOIs for its completeness, whether the documents have been signed, complete in all respect and the details furnished are generally in order. NALCO if desires may seek feedback from other customer to authenticate the submissions and performance feedback.

vii. The parties may note that mere submission of EOI shall not entitle automatic qualification/selection of the Party for the technology licensing agreement.

viii. NALCO reserves the right to accept or reject any EOI and to annul the invitation of EOI process and reject all EOIs at any time without thereby incurring any liability to the affected Party/Parties(s) or any obligation to inform the affected Party/Parties(s) of the grounds for the NALCO's action.

8. Contact Details

Contact Person: Shri Vinod Kumar Verma, DGM(R&D)

NALCO Bhavan, P/1, Nayapalli,

Bhubaneswar, Odisha -751013, India

Email: vinod.verma@nalcoindia.co.in Mobile: +91- 9437479222

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Annexure

Annexure-I (Technical Questionnaire)

Sl No	Details	
1	Legal name	
2	Registered office	
3	Year established	
4	Website	
5	Parent company / group, subsidiaries.	
6	Point of contact for EOI (name, email, phone).	
7	Reference Plants	
	Plant name, owner, country,	
	Month-year of commissioning,	
	Capacity (ktpa)	
	Production data for Last 3-years	
	Product specifications: specific surface area, particle size, alpha content	
	Contact reference	
8	Experience with rotary kiln technology	
	No. of plants supplied	
	O&M experience (if the vendor has also operated such plants)	
9	Technology ownership (whether proprietary, licensed or third-party)	
10	Basic Engineering Package (BEP) / Basic design package availability?	
12	Any additional features	

Declaration & Signature

Annexure-II (Product Specification)

Products Specification

1. Specific surface area BET (m^2/gm): **0.5 to 8 (max.)**
2. Particle size (d50) – in micron: **1 to 85 (max.)**
3. Alpha Alumina Content (%): **70 to 99 (max.)**
4. Na_2O Total (ppm): **500 to 4000**
5. CaO (ppm) (max.): **250**
6. SiO_2 (ppm) (max.): **200**
7. Fe_2O_3 (ppm) (max.): **200**

The products being envisaged are broadly categorised as follows:

Physical properties	Coarse products	Coarse products	Ground products	Ground products	Ground products	Ground products	Low Soda products	Low Soda products	Low Soda products	Low Soda products
Sp. Surface Area BET (m^2/gm)	03–05	01–02	1–2	1–2	0.5–1	6–8	0.5–01	0.5–01	0.5	1–2
Particle size (d50) in microns	55–80 (Coarse, unground)	55–80 (Coarse, unground)	4–6	4–5	4–5	1–3	55–80 (Coarse, unground)	5 (max)	2–2.5	2–3

Chemical properties	Coarse products	Coarse products	Ground products	Ground products	Ground products	Ground products	Low Soda products	Low Soda products	Low Soda products	Low Soda products
Alpha alumina content (%)	>80	>90	>95	>95	>97	70–80	>97	>97	>95	>90
Na_2O Total (ppm)	4000	4000	3500	4000	3500	4000	2200	2200	600	500
CaO (ppm) (max.)	250	250	250	250	250	250	250	250	250	250
SiO_2 (ppm) (max.)	200	200	200	200	200	200	200	200	200	200
Fe_2O_3 (ppm) (max.)	200	200	200	200	200	200	200	200	200	200