

Expression of interest (EOI) for revamping of existing Gas Treatment Centre of Potline.

National Aluminium Company Ltd. (NALCO), one of the largest integrated Alumina and Aluminium producers of Asia, is interested to revamp its existing Gas Treatment Center (GTC) located at the Smelter Plant unit to cater to the increase of potgas volume due to the as a resultant of increase of amperage from 180 to 220 KA of existing Potlines. For this purpose NALCO invites Expression Of Interest (EOI) from the interested and competent vendors having expertise in suitably revamping of the existing gas treatment center.

1. General Information:

1.1 Company profile & location of the Plant:

NALCO was incorporated in 1981 following a major investment decision by the Government of India to exploit a part of the Bauxite deposit discovered in the East Coast of India. The company has charted an excellent track record in both physical and financial performance and has been listed in the LME (London Metal Exchange). Recently, the company has been conferred the " Nav Ratna" (Literally Nine Jewels) by the Govt. of India, in recognition of its consistent outstanding performance over the years, hereby incorporating higher investment and operational autonomy. The Corporate Office of the company is located at Bhubaneswar, the capital of state Orissa. The company is listed on National Stock Exchange of India. The registered office is located at Nalco Bhawan, P/1, Nayapalli, Bhubaneswar, 751012, Orissa, India. It is certified for ISO-9001:2000, ISO-14001 & OHSAS-18001. It has won several awards for environmental performance including the most coveted, Indira Gandhi Paryavaran Puraskar-2000, Pollution Control Excellence Award-2000 & CII, Orissa Environmental Safety & Health Management Award-2005. The company has also won CAPEXIL, highest Export Award continuously since 1988, the EEPC Export Award, FIEO Niryat Shree Award & many other awards for excellence in export performance.

1.2 Smelter Plant,

1.2.1 Location:

It is located 6 Km from Angul town, the District Headquarters, on the southern side of NH-42 which connects NH-5(Kolkata-Chennai) and NH-6(Kolkata-Mumbai). The nearest Railway Station is Angul Railway Station, 7KM from the plant site the nearest major Airport is 160 KM at Bhubaneswar, the State capital of Orissa.

1.2.2: The plant is the smelting unit of NALCO to extract aluminium from alumina by

Haul-Herault Process utilizing **AP-18** Technology. The zero phase of the plant is having 480 pots (2-Lines of 240 each) having capacity of 0.223 MTPY. The company has successfully completed the 1st phase Expansion (240 pots) thus increasing the capacity to 0.356MTPY. Currently the organization is in the midst of phase-II Expansion (240 pots) & after its completion the total capacity would increase to 0.45 MTY.

1.3 Brief Company highlights

Financial

All figures are as on 31st March-2008

SI. No	Particulars	In INR Crores *	Equivalent in US\$ Mn
1	Paid-up share capital	644.31	150.29
2	Net Worth	8874.45	2070.08
3	Sales Turnover	5474.45	1276.99
4	Net Profit after TAX (PAT)	1631.52	380.57

* 1 Crore equals to 10 Millions.

1.4 Necessity of GTC Revamping

NALCO is contemplating to switchover to higher amperage, i.e. from 180 KA to 220 KA under AP technology to enhance the production capacity of its existing pots. Due to the above change over, the volume of gas generated in the pots would increase substantially than the existing level. Thus necessitating the revamping/up-gradation of the existing GTCs.

1.5 Brief description of existing GTC

The existing GTCs, 04 Nos. catering to 480 pots of zero phase, each are Designed, Supplied, Erected & Commissioned by M/s Flakt, AS Norsk Viftefabrikk., presently known as M/s Alstom Norway AS, Drammensveien 165, 0277 SOLO, Norway, utilizes Dry Scrubbing method for adsorption of fluorides of pot gas by Primary Alumina.

Each GTC is connected to 120 pots, evacuating 690210 NM³/Hr of pot gas. The evacuated gas is made to pass through various sizes of Ducts, designed to maintain necessary draft, Reactors, the Filter Bag Houses and ultimately to the atmosphere through the Stack. Four Nos. of heavy duty centrifugal fans(Main Exhaust Fans) are used to maintain the required draft for flow of the gas. Primary Alumina carried by Primary Air Slide & Recirculated Alumina is injected to the Reactors at single point. The Fluorinated Alumina(Secondary Alumina) is collected and carried by Secondary Air

Slides is air lift to the 600 MT capacity Silo from where it is supplied to the individual pot rooms(to feed alumina to the Pot Tending Machines(PTM) by air slide.

The filter bags of the bag house are cleaned in cyclick order by Pulse jet air supplied by a dedicated Compressor. Various fans & blowers are used for different operational requirements like Fluidization, Air Lifts etc. The entire operation of the plant is being controlled by PLC based Control System installed in a air conditioned Control Room.

1.5.1 Potgas Composition-

Conc. Of gaseous fluorine(HF) at 80 deg.C – 150 mg/cub.M (max.)

Total particulates at 80 deg C - 300-1000 mg/cub.M3 (max)

Conc. of Particulate Fluorine at 80 deg.C – 75 mg/cubM (max).

1.5.2 Gas quality at stack outlet.:

Conc. Of total Fluorides- 2mg/NM3

Total Particulates- 10mg/NM3

1.6 Revamping:

1.6.1 Pot gas condition:

The Pots would operate at an increased current of 220KA in place of existing 180KA.

Gas generation from each pot would be at a tune of 2.0 NM3/Sec per pot(appx.).The pot gas temperature would be 150 deg.C over and above the ambient temperature of 45deg C.

1.7 Expected Quality of Gas at the Stack outlet after Revamping

Conc. Of total fluorides (both gaseous & particulate) - **1mg/Nm3**

Total particulates - **5 mg/Nm3**

PART-II

2.1 Qualification Criteria

Vendors or Firms intending to participate are expected to meet the pre-qualification requirement stated hereunder.

2.1.1 The firms or vendors should be the Original Equipment Manufacturers (OEMs),having Technology License & proven track record of Engineering, Procurement, Manufacture, Erection, Commissioning of GTC for Aluminium Smelters.

2.1.2 The firms or vendors must have the expertise and also have executed Revamping/Up gradation job of GTCs on Turn-Key basis in any of the major Aluminium

extraction units or Smelters. Such upgraded/revamped GTCs should be in successful operation for at least 3 years.

2.1.3 The Firms or Vendors should be financially sound to execute such type of turnkey projects, which would be judged by their latest audited account

2.2 Preparation/Submission of EOI

2.2.1 EOI outline requirements:

The interested firms are invited to furnish a proposal in a format as outlined below in order to achieve the objective of maintaining uniform structured proposal from all the firms.

CHAPTER-I LETTER OF SUBMISSION OF THE PROPOSAL

CHAPTER-II ORGANIZATION PROFILE

CHAPTER-III EOI QUALIFICATION SUMMARY (as per Para 2.1 above)

CHAPTER-IV INFORMATION ABOUT ORGANIZATION

In this section, the firm is requested to furnish details pertaining to company formation, legal status, place of registration, principal place of business of the company, number of years in the relevant business and volume of similar type of work executed in related segment. Organization structure along with qualification & experience of key personnel etc. may be provided. Vendors to declare the details of their Indian counter parts/sub-vendors etc. along with their experience and financial capability.

CHAPTER-V TECHNICAL CAPABILITY

In this section, the firm is to furnish details about technical capability, capacity etc in undertaking similar nature of turnkey works as per the qualifying criteria mentioned at 2.1.1 & 2.1.2. The Vendors are required to enclose copies of executed/completed /on going project Order copies. Firms are required to enclose the performance certificates of the executed/completed revamped/upgraded GTCs alongwith the details of the Process/Technology adopted, process results, users feedback etc.. Firms may also submit any other information he desires to furnish on his own to supplement the qualifying criteria .

CHAPTER-VI OUTLINE OF THE PROPOSED PROJECT (PROPOSAL)

In this section, firm is expected to furnish a brief on suggested revamping/up gradation plan which should comprise of the technology to be used, if there is any of installing an additional unit of GTC, up gradation/modification of existing GTC, expected results (volume of pot gas evacuation & stack outlet gas quality) to be achieved after revamping, tentative time schedule for completion of the entire job. Since the existing GTC is under operation round the clock, round the year any modification/up gradation activity may require for shut downs. The vendor is required to present brief procedure/action plan for modifying/upgrading the existing GTC with minimum interruption in operation.

CHAPTER-VII OTHER REQUIRED DOCUMENTS

- 1) Details of the experience as per Para 2.1 above
- 2) Annual report and audited accounts of the latest financial year.

2.3 SUBMISSION OF EXPRESSION OF INTEREST (EOI)

Firms are expected to prepare EOI in accordance with requirement vide Para 2.1 & 2.2. The language of the proposal shall be "English". The proposal along with all information and requisite documents should be delivered through post or courier in printed format at the following address. The EOI should reach within 08 weeks of publication.

ADDRESS FOR SUBMISSION OF EOI

**G.C.MOHAPATRA
Chief Manager(Mechanical)
Potline Mechanical Maint.
Smelter Plant
AT/PO-NALCONAGAR
Dist.-Angul (Orissa)
PIN-759145, INDIA**