TENDER DOCUMENT FOR SUPPLY OF RELINING MATERIAL FOR POT LINES

TENDER NO: EOI , Dated. 14.08.2020

Head Commercial
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INSTRUCTION OF BIDDERS

Vedanta Resources plc ("Vedanta") is a LSE listed FTSE 100 Company with a market cap including that of its listed subsidiaries of about $ 50 billion. We operate across the following core business sectors: Zinc-Lead-Silver, Copper, Aluminum, Iron Ore and Energy, with operation located in geographies spanning India, Australia, UAE, Zambia, South Africa, Namibia and Ireland. Over the past 5 years the group has displayed exemplary appetite for organic and inorganic growth-with an industry leading organic growth program of $ 20 billion nearing completion.

Bharat Aluminum Company Limited (BALCO) is a group company of Vedanta in Aluminum business, having its integrated Aluminum complex at Korba, Chattisgarh, comprising an Aluminum Smelter of 245000 TPA with two captive power plants of 270 MW and 540 MW. BALCO is also in process of putting up an additional power plant of 1200 MW and 650000 TPA Aluminum smelter.

What BALCO is looking forward with this Vendor:-

- High Level of Service quality.
- 100% adherence to all the deliverables.
- Zero accidents environment.
- 100% reporting of all the near miss incidents and corrective measures for all to ensure no accident due to the unsafe conditions.
- Increased availability of all the equipments and the total system to ensure better efficiency and higher levels of productivity.
- Ensuring higher productivity per man hour by introducing better Operating Procedures.
- Introduction of innovative ideas which can save in terms of time or money.

Information / Credential of Suppliers…..

The following information is Compulsory and should be furnished completed in all aspects along with your offer.

1. Brief history of organization, along with organization chart, mentioning the Name, Designation & Tel.Nos of the contact persons in your company holding all key positions.
2. Client list, with copies Contracts of your Top 5 clients.
3. Banker's name and your Company's annual audited report , Balance Sheet & Profit and loss statement for last 3 years (with minimum Turnover of 5 Crores)
4. The details of Machinery and Equipment available with you which are in working condition are to be furnished.
5. If the space provided in the registration form is not sufficient, please attach separate Sheets and give Annexure reference number on the attached sheet.
6. Registration Details

    a. Registration No. and date
    (Kindly attach a photocopy of registration certificate)

b. Membership to any body

c. Any other Statutory Registration.

d. Registration details with taxation authorities:

i) Permanent Income Tax A/c No.

ii) Service tax Registration

iii) Tin Number

iv) Excise registration no.

v) LST & CST no.

*** Please refer to the http://www.balcoindia.com/ for detailed vendor registration process.**

ANNEXTURE I

BALCO'S GENRAL TERMS AND CONDITIONS TERMS:

1. **Price:**
   Price quoted should be inclusive of Freight & Transit Insurance i.e. F.O.R. Balco Door Delivery basis.
2. **Taxes & Duties:**
   Only excise duty & Sales Tax OR vat tax will be paid extra at actual,
3. **Delivery Period :**
   Delivery period should be offered on the basis of actual manufacturing time and transit time required to deliver the material at our stores.
4. **Payment Terms:**
   Payment will be released within 30 days after receipt & acceptance of material at our store site.
5. **Acceptance of Offers:**
   BALCO is not bound to accept the lowest offer or to give any reasons for rejection of any offer and it shall be the sole discretion of the company to consider or reject any bid. A formal Purchase Order shall be issued by BALCO towards the successful bidder in the event of acceptance of the offer. Unless a formal Vendor has been concluded no offer shall be deemed as accepted. Balco reserves the right to award Order to more than one agency or split the order at its own discretion.
6. **Modification & Agreement:**
   BALCO shall have the right to modify the ordered quantity in view of variation of requirement, price increase / decrease. Modification of Agreement may also take place in Vendor period as it may be shortened or extended in proposition to our supply pattern as we full depend on our Vendor's commitments.
7. **Damage To Balco's Property:**
   Any loss / damage to Balco due to negligence or willful attitude of the supplier or his employees while execution of the supplier shall be recovered from the Vendor are pending bills.

8 Occupational Health & Safety:

The vender shall be responsible to take all precautions to ensure safety of the labors / workers at work. The vender will supply his labors / workers safety equipment as per rules. If you're bringing your own equipment to carryout of job inside the plant such equipment should be subject hazard identifications and risk assessment prior to commencing of work.

The persons engaged by you shall be given appropriate awareness on OH&S; those personal who will carry out jobs affecting OH&S shall be properly trained and made competent for the job performed by them. During emergency situation which may be faced in the plant your personal should move to the emergency shelters. They should not lighter around nor spread any rumor.

12 Indemnity:

The Vendor shall keep Balco indemnified from and against all actions, suits, proceedings, losses, costs, damage, claim and demands of every nature and descriptions due to any acts of the Vendor.

13 Insurance:

The will take workmen compensation insurance policy from the Insurance Company so as to enable him to discharge various liabilities under workmen compensation act and submit documents within seven days of its start of work. The Vendor shall be required to obtain Group Insurance Policy for the labors to be engaged in the work.

14 Illegal Gratification:

This Vendor can be terminated if any bribe, commission, gift or advantage given, promised or offered by the Vendor to any employee of Balco.

15 Liquidated Damage:

Delivery time is the essence of contract, delivery beyond the contractual delivery terms shall entall Liquidated Damage (LD) @ 0.5% per week of the Total Order value and maximum to an extent of 5% of the Total Order Value.

17 Force Majeure:

For failure of delivery of material due to war, restraint, imposed by government, earthquake, fire, explosion, riot, lockout, etc, beyond human control directly interfering with the work, Balco shall only allow such additional time as may be considered justified by the circumstances of the case. No claim whatsoever of compensation from the Vendor for loss etc. on this account shall be entertained. Direct or indirect loss, if any, to Balco due to negligence of the Vendor during this period, on this account can however be recovered from the Vendor.

18. Arbitration:

In case of any dispute or difference between the Parties the matter shall be decided by mutual negotiation & agreement. If any difference persists on a matter of law or interpretation of this document the decision of mutually appointed arbitrator would be final & binding. All disputes arising out of or in connection with the present Vendor shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one Arbitrator appointed in accordance with the said Rules. The Contract shall be governed by, construed and interpreted in accordance with the laws in India. The venue of Arbitration shall be at Korba India only. The Arbitration shall be held in English language and the award of the Arbitration shall be final and binding to both the parties.

27. Jurisdiction:

This Vendor will be subject to Korba, Chhattisgarh Jurisdiction only for all legal matters.

Schedules of Quantity per Annum:-

S.No.	Item Description	Unit
1	Carbon Cathode Blocks of Various grades of Graphitic Content – Preferrably 100% Graphatized Cathodes Suppliers need to come back with their specifications for carbon cathode blocks for acceptance from BALCO.	Around 3000 MTs Annually
2	Ramming Pastes Properties Working Temperature Window (°C) - 40, -5/+10 Green Bulk Density (g/cm3)- 1.58-1.61 Apparent Density (g/cm3)- 1.44-1.47 Real Density (g/cm3)- 1.8-1.9 Volatile (%)- 7-11 Ash Content (%)- 4.0 MAX Fix Carbon (%)- 84.0 MIN Crushing Strength (MPa) 20-32 Electrical Resistivity (µW.m)- 65 MAX Open Porosity (%) - 20 MAX Volume Expansion DV/V (%)- 0.8-2.0 Thermal Conductivity (W/m°K)- 6 For Ramming Paste S30 (To be supplied 5 pots) - Working Temperature Window (°C) - 30, -5/+10 Green Bulk Density (g/cm3)- 1.58-1.61 Apparent Density (g/cm3)- 1.44-1.47 Real Density (g/cm3)- 1.8-1.9 Volatile (%)- 7-11 Ash Content (%)- 4.0 MAX Fix Carbon (%)- 84.0 MIN Crushing Strength (MPa) 20-32 Electrical Resistivity (µW.m)- 65 MAX Open Porosity (%) - 20 MAX Volume Expansion DV/V (%)- 0.8-2.0 Thermal Conductivity (W/m°K)- 6	Around 1000 MTs Annually
3	Sealing Pastes properties- Working Temperature Window (°C) - 40, -5/+10 Green Bulk Density (g/cm3)- 1.55-1.58 Volatile (%)- 24 Typical Ash Content (%)- 1.0 MAX Fix Carbon (%)- 75.0 MIN Crushing Strength (MPa) 23 MIN Electrical Resistivity (µW.m)- 45 MAX MAXIMUM GRAIN SIZE - 0.5 mm MAIN RAW MATERIAL- Graphite -	Around 300 MTs Annually

4	**Silicon Carbide Blocks.** PART NAME:SILICON CARBIDE BLOCK,SIZE:520 X 396 X 90 MM SILICON CARBIDE BLOCKS SHALL BE SUPPLIED AS PER THE FOLLOWING SPECIFICATIONS: Size (mm) : 520(±2) x 396(±2) x 90(±1) Silicon Nitride (%) : 20 min. Silicon Carbide (%) : 70 min. Fe2O3 (%) : 0.5 max Free SiO2 (%) : 1 max Thermal Conductivity at 350'C (W/mK) : 28 # 35 (By hotwire method) Bulk Density (g/cm3) : 2.65 min. Apparent Porosity (%) : 16 max. Cold crushing strength in normal temp.(MPa) : 150 min. Modulus of rupture in normal temp. (MPa) : 40 min. Modulus of rupture in high temp.(MPa) : 45 min. Resistance to Cryolite attack (%) : 4-20 (volume loss)	Around 10000 such Blocks Annually
5	**Ultra Low Carbon Cathode Collector Bars** BAR;CATHODE COLLECTOR, LEFT, TYPE-1 BAR; TYPE CATHODE COLLECTOR, LEFT, TYPE-1, WIDTH 237 MM,LENGTH 2.135 M, THICKNESS 70 MM; FFT: WEDGE SHAPE: SPLIT WITH 0.04% C, WEDGE SIZE: WD 70 X HT 57 X LG 1585 MM, WEDGE START AFTER 550 MM, HOLE END TOOTHER END SPECIFICATION C % : 0.04 max Si% : 0.30 max Mn % : 0.25 ~ 0.5 S% : 0.050 max P% : 0.045 max Ni% : 0.30 max Cr% : 0.30 max Cu% : 0.30 max N% : 0.0080 max UTS (MPa) : 300 TO 540 Upper Yield Stress (Mpa) : 185 min Elongation after fracture (%) : 18 min Length (mm) : 2135 -0/ +5 Width (mm) : 180 -3/ + 3 Thickness (mm) : 70 -3/ +3 Bending in X direction : { 4.5 mm in a length of 2135mm 3.2 mm in a length of 2135 mm Bending in Y direction : { 4.5 mm in a length of 2135mm 3.2 mm in a length of 0 mm Twisting tolerance (mm) : 5 Radius of Corner (mm) : R 13 -3/ +3 Out of square : -3, +3 Machined length (mm) : 100 -2/ +2 Machined part 5mm : 5mm -0.5/ +0.5 Machined part 10mm : 10mm -1/ +1	Around 13000 such Bars Annually

6	**High Strength Refractory Bricks** HIGH STRENGTH INSULATING BRICKS INSULATION BRICK,HIGH STRENGTH,SIZE:230X114X64MM THE MATERIAL SHALL BE PROVIDED AS PER THE FOLLOWING SPECIFICATIONS: 1. SIZE: (H*W*T) MM3 : 230*114*64 2. PERMANENT LINEAR CHANGE (@1000 DegC, 12hrs) % : (+/-)1 3. COMPRESSIVE STRENGTH (NORMAL TEMP) Mpa: >=2.0 4. HEAT CONDUCTIVITY (@350 DegC) W/mK: <=0.17 5. VOLUME DENSITY G/Cm3 : 0.6-0.8 6. SERVICE TEMPERATURE DegC : >1000 PERMISSIBLE DEVIATION FROM SPECIFIED BRICK DIMENSIONS FOR ALL BRICKS ARE AS FOLLOWS: 1. DEVIATION IN LENGTH (MM): (+/-)3.0 2. DEVIATION IN WIDTH &THICKNESS (MM): (+/-)1.0 3. WARPAGE SHALL NOT EXCEED FOR DIMENSIONS UPTO 230MM (MM): 1.5 4. CORNER & EDGE BREAKAGE SHALL NOT EXCEED (MM): 15	Around 480000 such Bricks Annually
_7	LOW STRENGTH INSULATING BRICKS LOW STRENGTH INSULATING BRICKS MATERIAL SHOULD BE CLEARLY AS PER THE SPECS AS MENTIONED BELOW 1. SIZE (H*W*T)mm3: 230*114*64 2. Permanent Linear Change(@ 900 Deg C, 8 hrs) %:(+/-)2 3. Compresive Strength (Normal Temp.)Mpa: 0.6-0.8 4. Heat Conductivity (@ 350 Deg C) W/mK: <=0.15 5. Volume Density g/cm3: 0.5 6. Service Temperature Deg C: >1000 Permissible Deviation from specified brick dimensions for all bricks are as follows: 1. Deviation in Length mm :(+/-) 3.0 2. Deviation in Width & Thickness mm: (+/-) 1.0 3. Warpage shall not exceed for dimensions upto 230 mm:1.5 4. Corner and edge breakage shall not exceed mm :15	Around 51000 such Bricks Annually

8	**Dry Impervious Material** MATERIAL SHALL BE PROVIDED AS PER THE FOLLOWING TECHNICAL SPECS: 1 REFRACTORINESS (1683-1785 DEG C):31-35 2. SPECIFIC GRAVITY (Kg/M3) :1920-2020 3. LINEAR CHANGE WHEN HEATED AT 816 DEG C : NONE AT 1260 DEG C :VOLUME STABILITY 4. Si+Al2O3 (%) : >=80 5. HEAT CONDUCTIVITY AT 200 DEG C (W/mK):0.34 AT 420 DEG C (W/mK):0.39 AT 650 DEG C (W/mK):0.43 6. SiO2 (%):53-59 7. Al2O3 (%) :35-42 8. Fe2O3 (%):1.5-3.5 9. TiO2 (%):1.0-2.0 10.Cao (%):0.2-0.7	Around 3000 MTs Annually
9	**Calcium Silicate Boards** INSULATION MATERIAL,TYPE:PLATE,MATERIAL OF CONSTRUCTION:CALCIUM SILICATE ,SIZE:500 X 500 X 65 MM THE MATERIAL SHALL BE PROVIDED AS PER THE FOLLOWING SPECIFICATIONS: Hysll Block-Grade-H-1000 1. SIZE (LXBXH) MM3 : 500x500x65 2. VOLUME DENSITY (G/Cm3) : 0.23 Min 3. BREAKING STRENGTH (Mpa) : >=0.5 4. COMPRESSIVE STRENGTH (NORMAL TEMP.) (Mpa) : 0.8-1.0 5. LINEAR SHRINKAGE RATE (1000 DEG C, 3Hrs) (%) : <=1.5 6. HEAT CONDUCTIVITY (W/mK) : 0.056+0.00011t 7. SERVICE TEMP. (DEG C) : >1000	Around 540 M3 Annually
10	**HI STRENGTH CASTING MATERIAL** Parameter UOM BALCO SPECS 1) Services Temperature Deg C 1500(max) 2) Volume By weight kg/m3 2000-2200(max) 3) Linear Change When Heated 3.a)at 816 Deg C % (-0.1) to (-0.4) 3.b)at 1260 Deg C % (-0.5) to (-1.5) 4) Compressive Strength Mpa 8.0 -16.0 (@816 Deg C). 5) Breaking Strength Mpa 1.0 - 2.5 (@816 Deg C) 6) Heat Coductivity 6.a) at 204 Deg C W/mK 0.54(max) 6.b) at 429 Deg C W/mK 0.58(max) 6.c) at 649 Deg C W/mK 0.64(max) 6.d) at 871 Deg C W/mK 0.7 (max) 7) SiO2 % 45-55 8) Al2O3 % 30-40	Around 600 MTs Annually

	9) Fe2O3 % 3.0-5.0 10) TiO2 % 2.0-3.0 11) CaO % 6.0-8.0	
10	SILICON CARBIDE Mortar – Carbofrax 11s REFRACTORY,CASTABLE,DESIGNATION:CARBOFRAX-11,MATERIAL OF CONSTRUCTION:SILICON CARBIDE REFRACTORY,CASTABLE,DESIGNATION:CARBOFRAX-11s,MATERIAL OF CONSTRUCTION:SILICON CARBIDE Suppliers Product Name - ONYX 6080 BD - 2.50 gm/cc min CCS (MPa) After drying at 110 DegC : 30.0 min After firing at 815 Deg C : 24.0 min After firing at 1450 DegC : 11.0 min Modulus of Rupture (MPa) After drying at 110Deg C : 6.0 min After firing at 815 Deg C : 5.0 min After firing at 1450 Deg C : 4.0 min Linear Change (%) After drying at 110 Deg C : -0.10 max After firing at 815 Deg C : -0.20max After firing at 1450 Deg C : -0.20 max Maximum use Temperature : 1480 DegC CHEMICAL ANALYSIS (%) SiC : 83.0 ± 5 Al2O3 : 12.0 - 12.5 CaO : 2.5 - 3.0 SiO2 : 1.5 - 2.0	Around 50 MTs Annually
12	Silcon Carbide Based Mortars – Carbofrax 8s REFRACTORY,MORTAR,TYPE:AIR SETTING,DRY,DESIGNATION:CARBOFRAX 8S,MATERIAL OF CONSTRUCTION:SILICON CARBIDE, SPECIFICATION Bulk Density (g/cc) : >=1.9 Thermal Conductivity (W/mk) @ 300C : >=5 Modulus of Rupture (Mpa) @ 14000C : >=18 Particle size (mm) : <0.250 Maximum service temperature : > 14000C CHEMICAL COMPONENTS (Wt%) SiC : >75 SiO2 : < 8 Fe2O3 : < 0.4	Around 50 MTs Annually
