



**INDIAN RARE EARTHS LIMITED (IREL)**

**INVITES**

**GLOBAL EXPRESSION OF INTEREST (EOI)**

**FOR**

**SETTING UP OF TITANIA SLAG PLANT**

**BY USING ILMENITE PRODUCED**

**AT**

**ORISSA SANDS COMPLEX (OSCOM), ODISHA, INDIA**

**ON**

**BUILD OWN OPERATE TRANSFER (BOOT) BASIS**

## **NOTICE INVITING EOI**

Indian Rare Earths Limited (IREL), (here in after referred to as IREL) invites Global EOI for setting up of Titania Slag Plant by using ilmenite produced at OSCOM plant located at Chatrapur, Ganjam District, Odisha on Build, Own, Operate & Transfer (BOOT) basis from interested bidders as detailed herein below:

Interested bidders may furnish their EOI with an approach paper and all other necessary documents in a sealed envelope along with the covering letter duly signed by an authorized signatory in conformity to the details furnished below:

1. EOI notice No. : IRE/CO/PT/EOI/38/2016 dated 19.09.2016
2. Type of EOI : Open (Globally)
3. Participants : Sole Bidder/Partnership/Company/LLP/Consortium
4. Name of work : 1,00,000 tons per annum (tpa) Titania Slag Plant
5. Location of work : In and around Orissa Sands Complex, Chatrapur, Ganjam District, Odisha, India. For details refer clause 17.2
6. Mode of work : Built-Own-Operate-Transfer (BOOT)
7. EOI Documents : : 20.09.2016 (10.00 Hrs) (IST)  
Download Start Date &  
Time from Website.
8. Last Date & Time of : 04.11.2016 (14.30 Hrs) (IST)  
submission of EOI  
EOI Opening : 04.11.2016 (15.00 Hrs) (IST)

9. Website on which EOI notice available : [www.irel.co.in](http://www.irel.co.in)  
[www.tenders.gov.in](http://www.tenders.gov.in)  
[www.eprocure.gov.in](http://www.eprocure.gov.in)
10. Address for submission of EOI : CGM (Technical & Corporate Planning),  
Indian Rare Earths Limited,  
Plot No. 1207, V.S. Marg,  
ECIL Building,  
Opposite Sidhivinayak Temple,  
Prabhadevi, Mumbai – 400 028, India.
11. Contact Person : Name: Mr.A.Mishra  
Designation: Senior Manager(Projects)  
Phone No.+91 99672 68735  
Email ID: anuttammishra@irel.co.in
12. Cost of EOI document : NIL
13. Earnest Money Deposit : NIL
14. Language of BID : The EOI bid prepared and submitted by the bidder and all correspondence & documents related to the EOI bid exchanged between the bidder and the IREL, shall be written in English language.  
Wherever such supporting documents are in language(s) other than English, these must be accompanied by an accurate translation of the relevant passages which the applicant considers it necessary to be taken into account in evaluation of its bid by the IREL in English language. In such case(s), for the purpose of interpretation of these

documents, this English translation shall govern.

15. Venue & Deadline for : EOI bids, in its complete form in all respects as submission of EOI application specified in the EOI notice, shall be submitted to IREL at the address specified above on or before the specified due date & time of submission. IREL may, in exceptional circumstances and at its discretion, extend the deadline for submission of EOI bids by issuing an addendum to be made available on the website mentioned above.

Any amendment issued prior to due date of submission would be put on the above mentioned website. It would be presumed that bidders have examined all amendments on the website and have submitted their bids accordingly.

## **16. Objective of EOI**

The objective of this EOI is to find out prospective bidders having expertise, experience, resources and interest to team up with IREL and set up 1,00,000 tpa titania slag facility under BOOT basis. The role of IREL in the tender will be as a facilitator and enabler so that value addition of ilmenite under the drive 'Make In India' successful.

The concession period before transferring the plant to IREL will be for a period of minimum ten years (extendable as per mutual consent).

The said Titania Slag Plant shall have the capacity to produce 1,00,000 tpa of sulphatable and/or chlorinatable grade slag along with about 40,000 tpa foundry grade pig iron (FGPI) as by product using ilmenite produced from IREL's plant at OSCOM, Odisha. The specifications of ilmenite produced from OSCOM mines is

placed at Annexure-I. The Slag Plant shall be designed with state of the art technology.

The titania slag so produced will be the property of IREL and the same would be taken from the BOOT operator under a long term sales purchase agreement (SPA). The foundry grade pig iron will be the property of the BOOT operator.

## **17.0 About the Project:**

### **17.1 General:**

IREL is engaged in the field of heavy beach sand mining and mineral separation. It is the largest beach sand mining and mineral separation company in India. The total installed capacity of IREL is 5,10,000 tpa ilmenite along with other associated minerals such as rutile, leucoxene, zircon, sillimanite and garnet etc. As a part of value addition to ilmenite, IREL has chalked out a plant for production of titania slag to achieve greater heights in the flow of value chain.

Titania slag plant project has been envisaged with a total capacity of 1,00,000 tpa of titania slag to be set up in or around its unit in Orissa Sands Complex, Chatrapur, Ganjam District, Odisha, on Built-Own-Operate-Transfer (BOOT) basis. Ilmenite produced at OSCOM shall be used as raw material for the Titania Slag Plant.

The envisaged capacity of 1,00,000 tpa of titania slag shall be installed in two streams of production of 50,000 tons with ore smelting furnaces in each line. The plant shall also produce about 40,000 tpa marketable foundry grade pig iron (FGPI).

## **17.2 Location:**

The proponent is to mention the tentative location of plant in the application. The plant to be located at a place so that the logistics of raw material (ilmenite) from Orissa Sands Complex, Matikhalo village, Chatrapur, Ganjam District, Odisha is hassle free and also transfer of the finished product i.e. titania slag back to IREL's warehouse is hassle free.

IREL may also provide necessary land within its plant premises at OSCOM to the BOOT operator at a pre-decided lease rent. IREL shall retain the land rights.

## **17.3 Raw Materials and utilities:**

The proposed plant will operate based on ilmenite as feedstock. Ilmenite will be sourced from the mineral separation plant operating at Orissa Sands Complex, Chatrapur producing 2,20,000 tpa of ilmenite. Project for augmenting the capacity of the OSCOM plant to produce about 4.5 lakh tpa of ilmenite and associated minerals is in the pipe line. Thus, there is assured source of surplus ilmenite which can be made available by IREL. Further there are huge reserves available around coastal belt of Odisha and supply from these reserves will ensure sufficient availability of ilmenite for the titania slag plant throughout the year.

All the necessary utilities like water, air and electricity etc shall be arranged by bidder. As the process is power intensive, a suitable captive power plant of approximately 50 MW capacity may also be planned by the bidder.

## **17.4 Technology & Process in brief:**

Ilmenite will be transported from ilmenite storage yard of OSCOM plant to the titanium slag plant warehouse. Ilmenite with or without prior metallization will be blended with anthracite/petroleum coke and fed into ore smelting furnace.

The mixture will be reduced under high temperature of electric arc which will enable ferric oxide to be converted to metallic iron and simultaneously other metal oxide will be reduced to its metallic state. After reduction, titaniferous slag and pig iron shall be released from furnace outlet respectively. The pig iron from furnace outlet undergoes dephosphorization, desulphurization, carburization, addition of inoculants and is then cast into ingots.

The titanium slag shall pass through different stages such as cooling, crushing, magnetic separation and grinding to finally achieve the grain size required by titania slag.

#### **17.5 Plant Unit:**

Titania slag production plant consists of the following major process unit:

- Transportation, receipt and storage of raw materials i.e. ilmenite from IREL, etc.
- Batching & proportioning of raw materials.
- Preheating of feed materials with hot flue gases (Waste heat recovery).
- Smelting reduction of the preheated charge, obtaining of conditioned titania slag melt and co-metal in Ore Smelting Furnace.
- Titania slag tapping into moulds.
- Metal tapping & cooling.
- Crushing, screening and magnetic separation of titania slag after hardening.
- Storing and Dispatch facility of titania slag to IREL.

#### **17.6 Consultant:**

IREL may appoint a consultant to provide consultancy services for developing the Request for Proposal (RFP) document, selection of parties and for providing consultancy services during the stage of evaluation of the bids and for supervision, monitoring and installation of the titania slag plant.

### **17.7 Concession Period:**

Ten years of plant operation & maintenance shall be considered as concession period. IREL reserves the right to extend the concession period based on mutual consent or decide otherwise afterwards.

### **18.0 Battery Limits:**

Annexure-II indicates a snap shot view of the BOOT basis to be followed along with the battery limits of IREL and the bidder.

### **18.1 Responsibility of IREL:**

- a) Land: Land shall be made available if called for to the BOOT operator at a pre-decided lease rent. IREL shall retain the land rights.
- b) Supply of ilmenite to the ilmenite warehouse of the titania slag plant.
- c) Receipt of titania slag from the BOOT operator based on long term SPA and marketing of the same.

### **18.2 Responsibility of BOOT Operator:**

- a) Receipt of ilmenite Ore from IREL's OSCOM Plant and other raw materials from outside sourcing.
- b) Installation of the titania slag plant & its operation.
- c) Power for plant operation: bidder has to arrange the power with a suitable captive power plant of approximately 50 MW capacity.

- d) Water required during construction stage and subsequently for operation of Plant shall be arranged by bidder.
- e) Titania Slag storage and dispatch.

**19.0 Indicative Scope of work for the BOOT operator:**

- 19.1 Conducting laboratory test work & develop flow sheets based on the feed material i.e. OSCOM grade ilmenite and preparation of Detailed Project Report (DPR).
- 19.2 Obtain various statutory clearances connected with the project.
- 19.3 Carry out basic engineering/detailed engineering for a plant life of minimum 20 years which inter-alia includes list of equipments with their technical specifications, general plant layout drawings, etc.
- 19.4 Plant erection, installation of equipments, testing and commissioning of the plant.
- 19.5 Regular operation of plant.
- 19.6 Operation & maintenance of plant for the concession period. Successful bidder to carry out necessary maintenance of the slag plant so as to achieve a minimum of 95% plant availability.
- 19.7 Comply with the Environmental, Occupational Health & Safety and Security requirements of IREL and has to ensure that adequate measures have been taken from their end for the safe working of their men and machines.
- 19.8 Transfer of well maintained slag plant in good operating condition after replacing all the wear & tear parts and other equipments ensuring min 95% plant

availability in each year for last three years of the concession period to IREL or as decided by IREL at that time.

NB:

Interested parties may contact IREL for obtaining about the details of different facilities as mentioned above for preparation of offer at their end.

In order to understand project philosophy interested bidders are suggested to visit the site and collect raw material samples, visit Chatrapur, Ganjam District, odisha for obtaining information about existing facilities at OSCOM and other necessary details for collecting preliminary data/information.

## **20.0 Time Schedule:**

The time schedule of the above scope of the work may be considered to be 30 months (max.) from the Effective date of Contract for start of commencement of production after installation of proposed plant.

Ten years of plant operation & maintenance shall be considered as concession period presently. IREL reserves the right to extend the concession period, decide otherwise afterwards. Effective date of contract shall be the date of signing of the contract or 30 days from Letter of Acceptance, whichever is earlier.

## **21.0 Approach Paper to be submitted by the Prospective Bidder along with the EOI:**

The prospective bidder is required to submit an approach paper on the methodology proposed for implementing the project, which inter-alia should include the following details:

### **A) General:**

- a) Participating as a single entity or in the form of a consortium.

- b) In case of consortium, name of the consortium members.
- c) Lead member in the consortium (It is preferred that the lead member would be an Indian Entity).
- d) Roles & Responsibilities of the consortium members.
- e) Tentative share holding pattern amongst the consortium members.
- f) Proposed tie-up arrangement between the consortium members at the time of setting up & operating the plant.
- g) Is any member of the consortium barred by the Government of India/Any State Government, or any entity controlled by it, from participating in any Bid, and if the bar subsists as on the date of submission of the Bid.

NB: Additional information as stipulated in Annexure-III also needs to be informed.

**B) Technology:**

- a) Name of the proposed technology partner.
- b) Experience of the technology partner is operating titania slag plant inter- alia including the following details:
  - i) Type of slag
  - ii) Capacity (tons per annum)
  - iii) Year of setting up of the plant:
  - iv) Number of years plant has operated:
  - v) Maximum capacity achieved by the Plant:
  - vi) Other by-products being produced, if any
  - vii) Raw material for the plant
  - viii) Product specifications
  - ix) Source of technology for the above plant i.e. whether it has been developed in-house or technology has been sourced
- c) Other details as stipulated in Annexure-IV.

**C) Financial:**

- a) Proposed source of finance for the project
- b) Details on the financial capabilities of the consortium members to be indicated as per the format stipulated in Annexure-V.

**22.0 EOI Terms:**

22.1 **Pre-Bid Meeting:** The pre-bid meeting will be held on 14.10.2016 at Mumbai in order to clarify any doubts of the intending bidders. During the meeting, the bidders are required to present techno-commercial aspects offered by them inter-alia including parameters such as technical specifications, quality bench marks, delivery milestones, evaluation criteria, estimates etc. Any queries to be clarified by IREL should be submitted in writing to the following email ids at least 2 days before the pre-bid meeting:

[anuttammishra@irel.co.in](mailto:anuttammishra@irel.co.in)

[technical-ho@irel.co.in](mailto:technical-ho@irel.co.in)

22.2 Request for Proposal (RFP) Terms: The bidders are required to submit salient terms & conditions of the RFP necessary to safeguard their interest along with the EOI documents. If found logical, IREL will include the same in the RFP to be issued to the short-listed parties. The above details may be submitted in a separate envelope superscribed 'Proposed terms & conditions for the RFP'.

**23.0 Right to the content of the proposal:**

For all the EOI bids received before the last date and time of EOI submission, the EOI will become the property of IREL and will not be returned after opening of the EOIs. IREL is not restricted in its rights to use or disclose any or all of the information contained in the EOI and can do so without compensation to the applicants. IREL shall not be bound by any language in the applications

indicating the confidentiality of the EOI applications or any other restriction on its use or disclosure.

#### **24.0 Acknowledgement of Understanding of Terms**

By submitting an EOI application, each applicant shall be deemed to acknowledge that it has carefully read all sections of this EOI, including all forms, schedules and annexure here to, and has fully informed itself as to all existing conditions and limitations.

#### **25.0 Submission of EOI Bid:**

25.1 All pages of the EOI bid document shall be stamped & signed by the authorized person of the firm/company/organization of applicant. Power of Attorney in favour of signatory to EOI application shall be submitted along with the Proposal.

25.2 EOI application shall be prepared and submitted in one (1) Original and three (3) copies in a sealed envelope superscribing “**EOI for Installation of Titania Slag Plant at OSCOM**” and addressed to the following:

CGM (Technical & Corporate Planning)  
Indian Rare Earths Limited,  
Plot No. 1207, V.S. Marg,  
ECIL Building, Opposite Sidhivinayak Temple,  
Prabhadevi, Mumbai – 400 028, India.

#### **26.0 Proposed mode of selection from shortlisted bidders:**

The mode of selection will be based on the lowest responsive offer received. Details of the same will be indicated in the RFP document.

**27.0 CHECK LIST FOR SUBMISSION OF BID (To be attached in EOI application)**

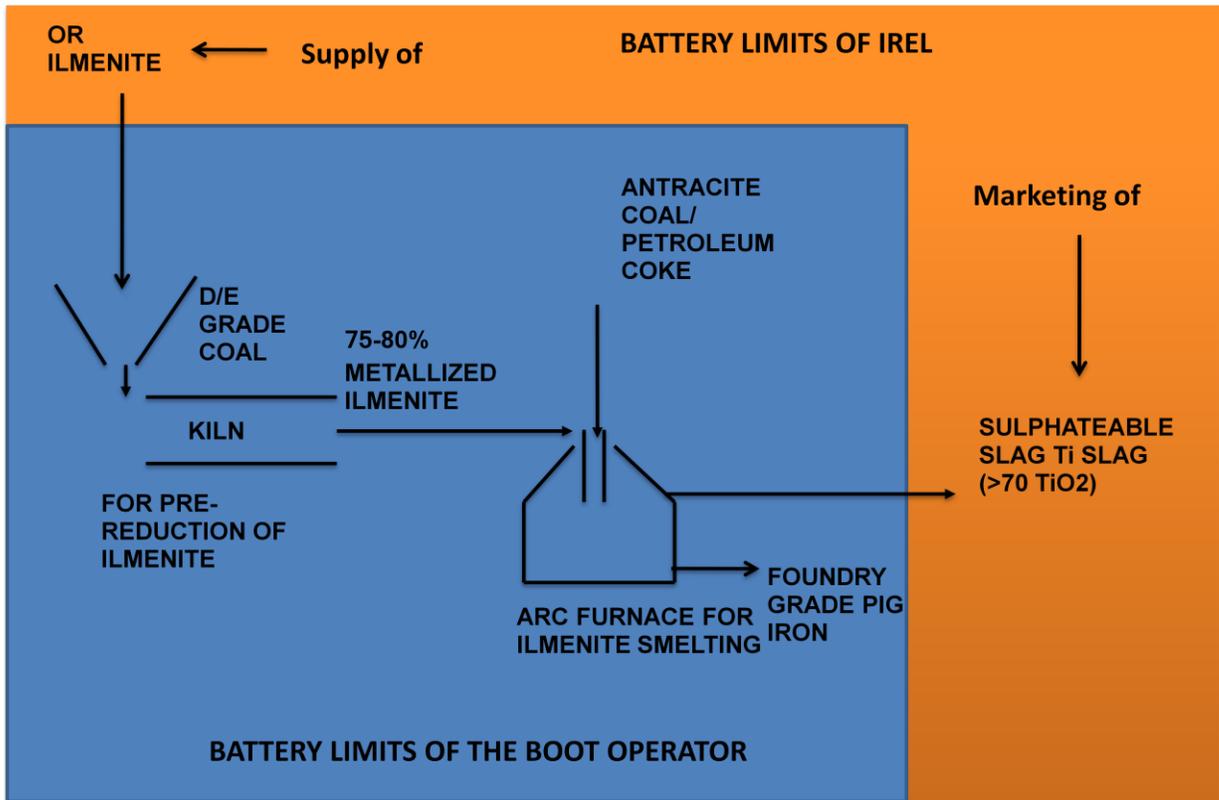
S. No.	Details of document	Remarks (Attached/Not attached) If not attached, reasons
1	Attachement-1: Power of Attorney	
2	Attachement-2: Copies of Certificate of Incorporation/Registration of the Company/Partnership Deed/Affidavit for proprietorship firm, etc.	
3	Attachment-3: Copies of Profit and Loss Account Statement for the financial years 2013-14, 2014-15 and 2015-16 in support of meeting the Financial Eligibility Requirement.	
4	Attachment-4: Copy of PAN No, if applicable.	
5	Attachment-5: Salient features proposed for the RFP	
6	Attachment-6: Details called for in Annexure-III to V	

### Technical Specification of Ilmenite ('OSCOM' Grade)

CHEMICAL ANALYSIS		Qty, Mt/Yr	
Guaranteed			
TiO <sub>2</sub>		50.25% (Min)	
Th		75 ppm (Max)	
U		10 ppm (Max)	
<b>Typical:</b>			
TiO <sub>2</sub>		50.50%	
FeO		34.04%	
Fe <sub>2</sub> O <sub>3</sub>		12.43%	
Al <sub>2</sub> O <sub>3</sub>		0.45%	
SiO <sub>2</sub>		0.71%	
Cr <sub>2</sub> O <sub>3</sub>		0.48%	
MnO		0.51%	
P <sub>2</sub> O <sub>5</sub>		0.022%	
V <sub>2</sub> O <sub>5</sub>		0.23%	
CaO		0.04%	
MgO		0.64%	
Th		43ppm	
U		<6 ppm	
<b>SIEVE ANALYSIS</b>			
MESH (TYLER SCR.)	SIEVE OPENING MICRON	CUM. %RETAINED	WEIGHT
48	300	1.7	
65	212	19.7	
100	150	34.3	
150	106	34.5	
170	90	5.4	
200	75	3.7	
-200	-75	0.7	

**Note:**

1. Ilmenite being a natural product, its chemical analysis is expected to vary.
2. Variation in the size of grains, occur from time to time. Although not guaranteed, the grain size distributions can be expected to be within the above ranges.



**ADDITIONAL INFORMATION TO BE SUPPLIED BY THE BIDDER:**

The following details are mandatory to be submitted by the bidder, in the following format, failing which their offer will not be considered:

1. a) Name
- b) Country of incorporation
- c) Address of corporate head quarter and its branch office(s), if any in India:
- d) Date of incorporation and/or commencement of business (attach copy of MoA/ AoA or any other relevant document in this regard).
2. Brief description of the bidder including details of its main lines of business and proposed role and responsibilities in this Project:
  - a) Details of Promoters/ founders
  - b) Current activities
3. Details of individual(s) who will serve as the point of contact/ communication for IREL:
  - a) Name:
  - b) Designation:
  - c) Company:
  - d) Address:
  - e) Telephone Number:
  - f) E-mail Address:
  - g) Fax Number:
4. Particulars of the Authorized Signatory of the Applicant:
  - a) Name:
  - b) Designation:
  - c) Address:
  - d) Telephone Number:
  - e) Fax Number:
  - f) Copy of Power of Attorney to be the Authorized Signatory

5. In case of Consortium:

- a) The information above (1-4) should be provided for all the members of the Consortium.

**Annexure-IV**

S. No.	Description	Unit	Achieved (Plant in operation)
1.	Specific Electrical Energy consumption	Kwh/ tons of TS	
2.	Specific consumption. a) Petroleum coke b) Major chemicals	tons/ tons of TS	
3.	Specific Ilmenite consumption	Tons of TS	
4.	Specific water consumption	cu.m/ ton of TS	
<b>Experience</b>			
5. A)	Total installed capacity of the plant in operation	tpa	
B)	Number of plants of minimum 25,000 tpa capacity with same AC technology provided by the bidder and presently in operation	Nos.	
C)	Years of experience with offered Technology.	No of years	

**INFORMATION ON FINANCIAL CRITERIA**

Name : .....

Values in Rs. crore

Turnover	Years			Total	Average	Audited Accounts Page Reference
Group turn over						
Capital Employed						
Net Worth						

(Name & Signature of Authorized Signatory) \_\_\_\_\_.

**Instructions:**

1. For conversion of other currencies to Indian Rupees, the rate of conversion shall be as per the Reserve Bank of India ("RBI") reference rate as on date of opening of the techno-commercial bid.
2. The page reference numbers indicating the financial parameters should be indicated in the allotted column of the table and the number should be highlighted.