



ODISHA POWER TRANSMISSION CORPORATION LTD.

(A Government of Odisha Undertaking)

CIN – U40102OR2004SGC007553

REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,

OFFICE OF THE GENERAL MANAGER, (Elect)

EHT (O&M) Circle, Bhubaneswar @ Cuttack.

At:- Madhusudan Nagar, P.O:- Tulsipur, Cuttack-753008.

Tel-/FAX-(0671)-2300547, E-mail-ehm.cle.bbs@optcl.co.in

TENDER SPECIFICATION NO: - 04/2016-17

**PROCUREMENT OF SODIUM BENTONITE POWDER FOR USAGE AS
GROUND IMPROVEMENT MATERIAL IN THE SWITCH YARDS AT GRID
SUB-STATION, RANSINGHPUR, PURI, NAYAGARH AND CHANDAKA**

PART-I

SECTION-I: INSTRUCTION TO TENDERERS.

SECTION-II: GENERAL CONDITIONS OF CONTRACT

SECTION-III: LIST OF ANNEXURES

SECTION-IV: TECHNICAL SPECIFICATIONS & OTHER DATA SHEET

PART II

PRICE BID & TECHNO COMMERCIAL BID (IN EXCEL FORMAT)

Request for online tender documents: From dt- 28.12.2016 (10.00 Hrs) to dt-09.01.2017 (12.30 Hrs)

**Issue of online tender documents: From dt- 28.12.2016 (10.01 Hrs) to dt-09.01.2017 (12.31 Hrs)
(Bid sheets)**

Last date of submission of online tender: Up to dt-09.01.2017.2016 (17.00 Hrs)

Date of opening of Technocommercial Bid: On dt- 10.01.2017.2016 (16.30 Hrs)

Date of Opening of Price Bid: To be intimated after Sample Selection

TELEPHONES / CONTACTS

1. General Manager: 09438907065
2. TA to General Manager: 9438907673
3. Office Land Line: 0671 2300226
4. Office Address: OFFICE OF THE GENERAL MANAGER (Elect)

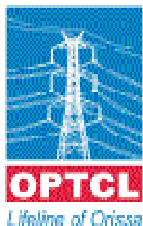
EHT (O&M) Circle, Bhubaneswar @ Cuttack.

At: - Madhusudan Nagar, P.O:- Tulsipur, Cuttack-753008.

E-mail - ehtm.cle.bbs@optcl.co.in

NOTE: -

1. In case the due date for opening of tender happens to be a holiday, then tenders would be received & opened on the next working day at the same time.
2. Please note that the tenders against this tender enquiry are being invited **through e-tendering mode**. In case of any clarification the prospective bidders may contact this office as mentioned above.
3. **The prospective bidders are requested to get their digital signatures (Class-3) well in time** for participation in the tender and no request for extension on this account will be entertained.
4. **Manual tenders in any form/case will not be accepted.**



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Tel- 0671-2300226 FAX-0671-2300547, E-mail-ehm.cle.bbs@optcl.co.in

E-TENDER NOTICE NO: 04 /2016-17

For and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD., General Manager, EHT (O&M) Circle, Bhubaneswar invites Tenders from Experienced Suppliers/ Authorized Dealers/ Manufactures for **PROCUREMENT OF SODIUM BENTONITE POWDER FOR USAGE AS GROUND IMPROVEMENT MATERIAL IN THE SWITCH YARDS AT GRID SUB-STATION RANSINGHPUR, PURI, NAYAGARH AND CHANDAKA** in *two- part bidding system*. The interested bidders would be required to enroll themselves on the tender portal www.tenderwizard.com/OPTCL. Complete set of bidding documents shall be available at www.tenderwizard.com/OPTCL from **28.12.2016 (10.01 Hrs) up to 09.01.2017 (12.31 Hrs)**. Interested contractors may visit OPTCL's official web site <http://www.optcl.co.in> and www.tenderwizard.com/OPTCL for detail specification.

N.B:- All subsequent addendums/corrigendum to the tender shall be hosted in the OPTCL's official web site <http://www.optcl.co.in> and www.tenderwizard.com/OPTCL **only**.

**GENERAL MANAGER (Elect.)
E.H.T. (O&M) CIRCLE, BHUBANESWAR**



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CIN – U40102OR2004SGC007553

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At:- Madhusudan Nagar, P.O:- Tulsipur, Cuttack-753008.

Tel- 0671-2300226 FAX-0671-2300547, E-mail-ehm.cle.bbs@optcl.co.in

E-TENDER NOTICE NO: 042016-17

NOTICE INVITING TENDER

For and on behalf of the ODISHA POWER TRANSMISSION CORPORATION LTD., the undersigned invites bids under single-part bidding system in e- tendering mode only as per the following details.

<i>Tender Specification No:</i>	GM/EHTM/BBS - 04/2016-17
<i>Request for online tender documents –</i>	From dt- 28.12.2016 (10.00 Hrs) to dt- 09.01.2017 (12.30 Hrs)
<i>Issue of online tender documents (bid sheets)-</i>	From dt- 28.12.2016 (10.01 Hrs) to dt- 09.01.2017 (12.31 Hrs)
<i>Last date of submission of online tender –</i>	up to dt – 09.01.2017 (17.00 Hrs)
<i>Date of opening of TechnoCommercial -</i>	On dt- 10.01.2017 (16.30 Hrs)
<i>Cost of Tender Spec. Document:</i>	Rs.6000/+ Rs300/- (VAT) = Rs 6,300/-
<i>Earnest Money Deposit:</i>	Rs 14000/-
<i>Tender Processing Fee:</i>	Rs.1400/- + Rs 210 /-(ST @ 15%) = Rs 1610/-

<i>Sl. No</i>	<i>Description of Material</i>	<i>Unit</i>	<i>Qty</i>
1	Supply of Sodium Bentonite powder at following destinations as per the specification Grid S/S Ranasinghpur ó 59.9 MT Grid S/S Puri ó 29.8 MT Grid S/S Nayagarh.- 31.1 MT Grid S/S Chandaka ó 27.0 MT	MT	147.80

The bidders can view the tender documents from website free of cost.

The bidders who want to submit bid shall have to pay a **non refundable amount of Rs6300/- (Rupees Six thousand three hundred only including VAT @ 5%)** towards the tender

cost, in the form of Demand draft only, drawn in favour of **EHT (O&M) Circle, Cuttack payable at Cuttack** and the same is to be submitted to the office of the undersigned on or before the last date & time of submission of tender.

The bidders shall have to submit a non refundable amount of Rs 1610/- (Rupees one thousand six hundred ten only) towards the tender processing fee through e-payment gateway.

(NOTE: For tender processing fee to K.S.E.D.C. Ltd. Bangalore, the bidder can use various modes of e-payment facility available through Tender wizard Portal, i.e. by Credit Card, Debit Card, Net Banking)

The bidders shall scan the Demand Draft towards EMD, Tender paper Cost and proof of payment of tender processing fee and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original as stated above.

The prospective bidders are advised to register their user ID, Password, company ID from website www.tenderwizard.com/OPTCL by clicking on hyper link Register Meö.

**GENERAL MANAGER (Elect.)
E.H.T. (O&M) CIRCLE, BHUBANESWAR**

COMMERCIAL SPECIFICATION.

SECTION-I

INSTRUCTIONS TO BIDDER

1. Submission of Bids: -

The bidder shall submit the bid in Electronic Mode only i.e www.tenderwizard.com/OPTCL. The bidder must ensure that the bids are received in the specified website of the OPTCL by the date and time indicated in the Tender notice. Bids submitted by telex/telegram will not be accepted. No request to collect the Bids in physical form will be entertained by the OPTCL.

The OPTCL reserves the right to reject any bid, which is not submitted according to the instruction, stipulated above. The participants to the tender should be registered under IT Act / Service tax Act.

1. For all the users it is mandatory to procure the Digital Signatures (class-3).

2. Contractors / Vendors / Bidders are requested to follow the below steps for Registration:

- a. Click on Register, fill the online registration form.

Pay the amount of **Rs. 2300/-** through e-payment gate way.

- b. This registration is valid for one year.
- c. Send the acknowledgment copy for verification.
- d. As soon as the verification is being done the e-tender user id will be enabled.

3. After viewing Tender Notification, if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs.

4. If any Bidder wants to participate in the tender he will have to follow the instructions given below:

- a. Insert the PKI (which consist of your Digital Signature Certificate) in your System. (Note: Make sure that necessary software of PKI be installed in your system).
- b. Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer)
- c. Go to Start > Programs > Internet Explorer.
- d. Type www.tenderwizard.com/OPTCL in the address bar, to access the Login Screen.
- e. Enter e-tender User Id and Password, click on Go.
- f. Click on Click here to login for selecting the Digital Signature Certificate.
 - Select the Certificate and enter DSC Password.
 - Re-enter the e-Procurement User Id Password

5. To make a request for Tender Document, Bidders will have to follow below mentioned steps.

- a) Click "Un Applied" to view / apply for new tenders.
- b) Click on Request icon for online request.
- c) Enter the required fields including details of the payment of tender Processing fee.
6. After making the request Bidders will receive the Bid Documents which can be checked and downloaded by following the steps mentioned below:
 - a) Click to view the tender documents which are received by the user.
 - b) Tender document screen appears.
 - c) Click "Click here to download" to download the documents.
7. After completing all the formalities Bidders will have to submit the tender and they must take care of following instructions.
 - a) Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.
 - b) Note down / take a print of bid control number once it is displayed on the screen
8. Tender Opening event can be viewed online.
9. Competitors bid sheets are available in the website for all.
10. **For any e-tendering assistant contact help desk number mentioned below.**

Bangalore – 080- 40482000.

Mr. Satyamanyu – 09937140591

2. Division of Specification.

PART - I

SECTION-I- INSTRUCTION TO BIDDERS

SECTION-II- GENERAL CONDITIONS OF CONTRACT

SECTION-III- LIST OF ANNEXURES

SECTION-IV- TECHNICAL SPECIFICATION & OTHER DATA SHEETS

PART - II

PRICE BID & TECHNO COMMERCIAL BID (IN XLS FORMAT)

3. Purchaser's Right Regarding Alteration of Quantities Tendered.

The Purchaser may alter the quantities of work at the time of placing orders. Initially the purchaser may place orders for lesser quantity with full freedom to place extension orders for further quantity under similar terms and conditions of the original orders. Orders may also be split among more than one bidder for any particular item, if considered necessary in the interest of the OPTCL.

4. Purchaser's right to accept/reject bids:

The purchaser reserves the right to reject any or all the tenders without assigning any reasons whatsoever if it is in the interest of OPTCL.

5. Mode of submission of Tenders.

[A] Tenders shall be submitted in electronic mode only. (www.tenderwizard.com/OPTCL)

[B] **Telegraphic or FAX tenders** shall not be accepted under any circumstances.

6. Earnest money deposit:

The Tenders shall be accompanied by Earnest Money deposit of value specified in the notice inviting tenders. Tenders without the required EMD will be rejected out rightly. The earnest money deposit shall be furnished in shape of **Bank Draft to be drawn in favour of EHT (O&M) Circle, Cuttack, payable at Cuttack.**

NOTE:-

- (i) No adjustment towards EMD shall be permitted against any outstanding amount with the **ODISHA POWER TRANSMISSION CORPORATION LTD.**
- (ii) In the case of un- successful tenderer, the EMD will be refunded after finalization of the tender on written request. In the case of successful Tenderer, this will be refunded on written request only after award of contract & on submission of security deposit in the form of BG/DD.
- (iii) Suits, if any, arising out of this clause shall be filed in a Court of law to which the jurisdiction of High Court of ODISHA extends.
- (iv) EMD will be forfeited if the tenderer fails to accept the purchase order / work order issued in his favour or to execute the order, placed on them.
- (v) Tenders not accompanied by Earnest Money shall be disqualified and the **no interest shall be paid upon the deposited EMD.**

7. Validity of the Bids: -

The tenders are requested to keep the validity of their offer for a period of **180** days from the date of opening of the tender, failing which the tenders will be rejected.

8. PRICE: -

The bidders are advised to quote their rate as per the price schedule and shall remain firm inclusive of all taxes & duties, labour charges etc. within the validity of the tender.

Tenderers to be fully conversant with the clauses of the Specification:

Tenderers are expected to be fully conversant with the meaning of all the clauses of the specification before submitting their tenders. In case of doubt regarding the meaning of any clause, the tenderer may seek clarification in writing from the **GM EHT (O&M) Circle, Bhubaneswar,** This, however, does not entitle the Tenderer to ask for time beyond due date, fixed for receipt of tender.

9. Documents to Accompany Bids.

- a) Tenderers are required to submit tenders in the following manner:
- b) Declaration Form as per **Annexure-I** (duly signed) to be uploaded in ***.pdf** format.

- c) Earnest Money (scanned copy is to be uploaded)
- d) Abstract of Terms & conditions in prescribed proforma as per **Annexure-II**. To be keyed in the bid sheets provided.
- e) General Terms & Conditions of contract as per Section-II of the Specification. (All the required documents are to be uploaded.)
- f) Data on past experience if any **as per** the Specification.(Scanned copy to be uploaded)
- g) Proof of Manufacturer, Supplier, Authorised dealer, permanent account number [PAN] of the firm is required under Income tax Act. (Scanned copy to be uploaded).
- h) Any other document required, is to be uploaded.
- i) Schedule of prices in the prescribed proforma in the price bid sheet provided in *.xls format.

10. Conditional Offer:

Conditional/Incomplete offer shall not be accepted.

11. General Instruction to the Tenderers: -

- i) The tenderer must get him registered in tender portal by paying an amount of **Rs. 2300/- through e-payment gate way**. This registration is valid for one year.
- ii) The tender paper cost (Form fee non refundable) for an amount of **Rs 6300/- to be deposited in shape of DD**.
- iii) The tender processing fee for an amount of **Rs 1610/-(Non-refundable) is to be paid to KSEDC Limited, Bangalore through e-payment gateway**.
- iv) The EMD amount as specified is to be paid in shape of DD.
- v) In the event of discrepancy or arithmetical error in the schedule of price, the decision of the purchaser shall be final and binding on the Tenderer.
- vi) Notice inviting tender shall form part of this specification.
- vii) The EMD shall be returned to the unsuccessful bidders after finalization of tender on written request.
- viii) It should be distinctly understood that the price bid and techno-commercial bid shall contain only details/documents relating to price and technical details, as mentioned herein above.
- ix) **The Tenderer must submit the EMD amount, cost of tender document in shape of draft and proof of Tender processing fee in a sealed cover envelope super scribing the Tender Notice No & Date of opening of tender. The said envelope is to be submitted in the office of the purchaser on or before the last date and time of submission of tender.**

SECTION-II

GENERAL TERMS AND CONDITIONS OF CONTRACT [G.T.C.C.]

1. Scope of the contract:

This specification covers supply of **Sodium Bentonite Powder for usage as Ground improvement material in the switchyards at Grid sub-station, Ransinghpur, Puri, Nayagarh and Chandaka** as per technical requirement mentioned in Section IV of the tender specification. The scope of contract shall be to deliver the material on Rail/Road transport at destinations of OPTCL site store as specified in the schedule of quantity. **The tenderer should quote the composition of the powder and the quantity of package in kilograms and whether the material bears ISI mark.**

2. Definition of terms:

For the purpose of this specification and General Terms and Conditions of contract [GTCC], the following words shall have the meanings hereby indicated, except where otherwise described or defined.

- 2.1 The Purchaser shall mean the General Manager, EHT (O&M) Circle, Bhubaneswar for and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD., Bhubaneswar.
- 2.2 The Engineer shall mean the Engineer appointed by the Purchaser for the purpose of this contract.
- 2.3 Purchaser's Representative shall mean any person or persons or consulting firm appointed and remunerated by the Purchaser to supervise, inspect, test and examine workmanship and materials of the equipment to be supplied.
- 2.4 The supplier shall mean the bidder whose bid has been accepted by the purchaser and shall include the bidder's executives, administrators, successors and permitted assignees.
- 2.5 Equipment shall mean and include all machinery, apparatus, materials, and articles to be provided under the contract by the suppliers.
- 2.6 Contract Price shall mean the sum named in or calculated the bid.
- 2.7 General Condition shall mean these General Terms and Conditions of Contract.
- 2.8 The Specification shall mean both the technical as well as commercial parts of the specification annexed to or issued with GTCC and shall include the **schedules** and technical details etc, attached thereto.
- 2.9 Month shall mean Calendar month.
- 2.10 Writing shall include any manuscript, type written, printed or other statement reproduction in any visible form and whether under seal or under hand.

- 2.11 "FOR Destination costs" shall mean the cost of equipment and material at the consignee's store/site. The cost is inclusive of Excise duty, Sales tax and other local taxes, packing, forwarding and insurance and freight charges.
- 2.12 The term "Contract document" shall mean and include GTCC, specifications, schedules, drawings, form of tender, Notice Inviting Tender, covering letter, schedule of prices or the final General Conditions, any special conditions, applicable to the particular contract.
- 2.13 Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act, failing that in the ODISHA General Clauses Act.

3. Manner of execution:

All materials supplied under the contract shall be manufactured in the manner, set out in the specification or where not set out, to the reasonable satisfaction of the Purchaser's representative.

4. GENERAL REQUIREMENT:

Sodium Bentonite as Ground Enhancement Material/ Backfill / Grounding Improvement Material shall be maintenance free. It should not need re-charging with salts or any other chemicals and shall maintain its earth resistance with time. It shall be placed around earth electrode in the earth pit or earth mat to improve the conductivity of earth electrode & ground contact area. The material shall be supplied in sealed moisture proof bags. These bags shall be marked with the name of the manufacturer or trade name, quantity, batch no., date of manufacture etc

5. SAMPLE SUBMISSION:

All the bidders are required to submit their product i.e. Sodium Bentonite in 1KG packs for sample scrutiny before the opening of the tender failing which the tender shall be liable for outright rejection. The sample submitted shall be tested to determine the quality of the material supplied by the sample scrutiny committee of this circle. The bidders whose samples are selected by the Sample Committee shall be eligible for opening of price bid.

6. Rejection of Materials.

After supply of the materials at different sites the site incharge shall inspect the sample collected at random from the lot. If the sample does not meet the requirement as per specification then the whole lot shall either be rejected or replaced at the cost of the supplier. The Supplier on receipt of such notification shall either replace the defective material free of cost to the purchaser within 15 days from the date of issue of such notification by the purchaser.

7. Language and measures:

All documents pertaining to the contract including specifications, schedule, notices, correspondence, or any other writing shall be written in English language. The metric system of measurement shall be used exclusively in this contract.

8. Right to reject/accept any tender:

The purchaser reserves the right either to reject or to accept any or all tenders if the situation so warrants in the interest of the purchaser. Orders may also be split up among different Tenderers on individual merits of the Tenderer. The purchaser has exclusive right to alter the quantities of materials at the time of placing final purchase order. During placing of the order, the purchaser may defer the schedule of delivery of the materials. It may be clearly understood by the Tenderer that the purchaser need not assign any reason for any of the above action [s].

9. Delivery:-

The desired delivery period shall be within 30 (thirty) days of placing purchase order.

10. Despatch instructions.

a) The materials should be securely packed and dispatched directly to the specified site at the supplier's risk by Road Transport only after getting dispatch clearance from the purchaser.

b) Loading & unloading of Ordered Materials.

It will be the sole responsibility of the supplier for loading and unloading of materials both at the factory site and at the destination site/store.

The Purchaser shall have no responsibility on this account.

11. Supplier's Default Liability.

- (I) The Purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed hereunder.
 - a) If in the judgment of the Purchaser, the supplier fails to make delivery of material within the time specified in the contract or within the period for which if extension has been granted by the Purchaser in writing in response to written request of the supplier.
 - b) If in the judgment of the Purchaser, the supplier fails to comply with any of the provisions of this contract.
- (II) In the event, Purchaser terminates the contract in whole or in part the Purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate in relation to the material similar to that terminated and the supplier will be liable to the Purchaser for any additional costs for such similar material and/or for penalty for delay as

defined in clause-23 of this section until such reasonable time as may be required for the final supply of material.

- (III) In the event the Purchaser does not terminate the contract the supplier shall be liable to the Purchaser for penalty for delay as set out in Clause-23 of this section until the material is accepted. This shall be based only on written request of the supplier and written willingness of the Purchaser.

12. Force Majeure:

The supplier shall not be liable for any penalty for delay or for failure to perform the contract for reasons of force majeure such as acts of god, acts of the public enemy, acts of Govt., Fires, floods, epidemics, Quarantine restrictions, strikes, Freight Embargo and provided that the supplier shall within Ten (10) days from the beginning of delay on such account notify the purchaser in writing of the cause of delay. The purchaser shall verify the facts and grant such extension, if facts justify.

13. Extension of time:-

If the delivery of material is delayed due to reasons beyond the control of the supplier, the supplier shall without delay give notice to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice may or may not agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

14. GUARANTEE PERIOD

After the utilization of the **Sodium Bentonite as Ground Improvement Material** in the Grid Sub-stations, the soil resistance shall be measured and the result shall be recorded (say R1 ohms).

After 12 months, the soil resistance shall be measured again (say R2 ohms) for the same Grid Sub-stations and the new result shall be compared with the original data.

The bidder has to guarantee that because of his product there shall not be a deviation of more than +/- 10% in the earth resistances measured over a time span of 12months $((R2-R1)/R1 * 100)$

- #### **15. VAT REGISTRATION / CST , VAT CELARANCE CERTIFICATION, PAN CARD & AUTHORIZED DEALERSHIP CERTIFICATE :** Attested legible Xerox copies of Income Tax PAN Card, VAT Registration & clearance Certificate & authorized dealership certificates (if applicable) valid on the date of opening of the tender should be submitted along with

tenders without which tender will be rejected at the time of opening. If required, the tenderers shall have to produce original documents for verification any time after the opening of tender. Those who fail to produce the same and found not to be valid on the date of opening of the tender, their tenders will be rejected.

The bidders may also quote in CST Mode for which C- Form shall be supplied by the purchaser.

16. TEST CERTIFICATE:

1. It should be a little alkaline in nature with pH value of > 7 & < 9 . Test certificate from NABL approved laboratory to be provided for the compound so designed.
2. It should have capacity to retain more than 10% moisture at 105°C. Test certificate for the same from NABL approved laboratory shall be submitted.

The same shall be tested at NABL accredited laboratory and reports are to be verified at site.

- Resistivity test using soil box
- Leaching test
- Sulfur determination
- Corrosion test

**17. SUBMISSION OF PROOF REGARDING MANUFACTURER'S CERTIFICATE /
AUTHORISED DEALERSHIP CERTIFICATE, PRICE LIST OF THE
MANUFACTURER, PAST EXPERIENCE OF EXECUTION OF ORDER
PERFORMANCE CERTIFICATE AND TECHNICAL LITERATURE.**

Attested legible Xerox copies of necessary Manufacturer's certificate, valid authorized dealer certificate, Manufacturer's Price list and technical literature etc. should be furnished along with the tender. If required, the firms may be requested to produce such original certificates for verification. Past experience of execution of Purchase Orders needs to be furnished by the bidders.

18. FREE REPLACEMENT: Free replacement of materials lost/damaged due to transit shall be made immediately on receipt of the intimation from the consignee/Paying Officer without waiting for settlement of the claim of bidders with Railway/Lorry/Insurance Company.

19. STANDARDS: The materials shall comply with relevant standards such as **IEEE 80-2000 Clause No.14.5 (b)** (and others if any) as regards material, manufacture and testing etc.

20. QUANTITY VARIATION: The quantity to be ordered may undergo revision at the time of placement of orders.

**21. B.G. TOWARDS SECURITY DEPOSIT, 100% PAYMENT AND PERFORMANCE
GUARANTEE:**

- a) For manufacturers / dealers / suppliers situated Inside & outside the state of ODISHA.

A Composite Bank Guarantee for 10% [ten percent] of the total FORD cost of the purchase order, shall be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of General Manager EHT (O&M) Circle, Cuttack within 15 days from the date of issue of the purchase order,. The BG shall be executed on non judicial stamp paper worth of Rs.29.00 [Rupees twenty nine] only or as per the prevalent rules, valid for a period of 20 months from the last date of stipulated delivery period, for scrutiny and acceptance, failing which the supply order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

- b) No interest is payable on any kind of Bank Guarantee.
- c) In case of non-fulfillment of contractual obligation, as required in the detailed purchase order/Specification, the composite Bank guarantee shall be forfeited.
- d) The Bank Guarantee Format shall be provided by the Purchaser at the time of placing the Purchase Order

22. Terms of Payment.

- (i) 100% value of each consignment with 100% Excise duty, Entry Tax, if any, and sales tax in full as applicable along with freight & Insurance charges will be paid on receipt of materials in good condition at stores/desired site and verification thereof, subject to furnishing and approval of Composite Bank Guarantee at the rate of 10% (Ten percent) of the cost of supplied materials, as stipulated under clause-21 of this specification & on prior approval of guarantee certificate & Test certificate by the Purchaser. Income tax as applicable shall be deducted from the source.
- (ii) The supplier shall furnish Composite Bank Guarantee of appropriate amount to OPTCL covering 10% of F.O.R. Destination cost of the purchase order well in advance (within 15 days from the date of issue of the purchase order) before despatch of materials.

23. Penalty for Delay in Completion of Contract

- (A) If the Supplier fails to deliver the materials within the delivery schedule, specified in the contract including delivery time extension, if any, granted thereto, the Purchaser shall recover from the Supplier, penalty for a sum of half percent (0.5 percent) of the Ex-works price of the un-delivered equipment for each calendar week of delay or part thereof. For this

purpose, the date of receipt of challan shall be reckoned as the date of delivery. The total amount of penalty shall not exceed five percent (5%) of the ex-works price of the unit or units so delayed. Equipment will be deemed to have been delivered only when all its components and accessories as per technical Specification are also delivered. If certain components & accessories are not delivered in time, the equipment will be considered delayed until such time as the missing parts are delivered.

(B) If the Supplier fails to replace the material within 30 days from the date of intimation of the defect, so noticed by the purchaser within the guarantee period then the penalty for sum of one half of the one percent (0.5%) of the total Purchase order amount for each calendar week of delay shall be recovered by the purchaser within the guarantee period. For this purpose, penalty date will start from the 30th. day from the date of issue of letter on defectiveness of material, so supplied, by the purchaser. The total amount of penalty in this case shall not exceed 10% (TEN PERCENT) of the purchase order amount. The purchase order amount shall mean ex-works price + freight & insurance and all taxes & duties. If the defects so intimated within the guarantee period will not be rectified by the Supplier within the stipulated period then whole of the B.G. will be forfeited by the purchaser, without any intimation to the Supplier.

24. Insurance

The Supplier shall undertake insurance of stores covered by this Specification unless otherwise stated. The responsibility of delivery of the stores at destination in good condition rests with the Supplier. Any claim with the Insurance Company or transport agency arising due to loss or damage in transit has to be settled by the supplier. The Supplier shall undertake free replacement of materials damaged or lost, which will be reported by the consignee within 30 days of receipt of the materials at destination without waiting for the settlement of their claims with the carriers and underwriters.

25. Payment Due from the Supplier

All costs and damages, for which the supplier is liable to the purchaser, will be deducted by the purchaser from any money, due to the supplier, under any of the contract (s), executed with OPTCL.

26. Certificate of Exemption from Excise Duty/Sales tax.

Offers with exemption from Excise duty including sales tax shall be accompanied with authenticated proof of such exemption. Authenticated proof for this clause shall mean attested

Photostat copy of exemption certificate. Any claim towards Excise duty/ Sales Tax shall be paid on actual basis subject to production of authenticated documentary evidence.

27. Supplier's Responsibility.

Notwithstanding anything mentioned in the Specification or subsequent approval or acceptance by the Purchaser, the ultimate responsibility for design, manufacture, materials used and satisfactory performance shall rest with the Tenderers. The Supplier(s) shall be responsible for any discrepancy noticed in the documents, submitted by them along with the bid(s)

28. Jurisdiction of the High Court of ODISHA.

Suits, if any, arising out of this contract shall be filed by either Party in a court of Law to which the jurisdiction of High court of ODISHA extends.

29. Correspondences.

- a) Any notice to the supplier under the terms of the contract shall be served by Registered Post or by hand at the Supplier's Principal Place of Business.
- b) Any notice to the Purchaser shall be served at the Purchaser's Principal Office in the same manner.

Official Address of the Parties to the Contract

The address of the parties to the contract shall be specified:-

1. **Purchaser:** General Manager EHT (O&M), Circle, OPTCL, Bhubaneswar (Odisha)

Telephone No. 0671 - 2300226

FAX No.0671 ó 2300547

2. **Supplier:** Address

Telephone No.

Fax No.

30. Outright Rejection of Tenders

Tenders shall be outright rejected if the followings are not complied with.

- a) The tenderer shall submit the bid in electronic mode only and shall submit the cost of tender document, EMD and Tender processing fee on or before the date and time of opening of the bid.
- b) The Tender shall not be submitted telegraphically or by FAX.

- c) The Tender shall be kept valid for a minimum period of 180 days from the date of opening of tender.
- d) The schedule of prices should be filled up fully to indicate the break-up of the prices including taxes and duties. Incomplete submission of this schedule will make the tender liable for rejection.
- e) The Tenderer should quote ~~price~~ **FIRM** price only and the price should be kept valid for a minimum period of 180 days from the date of opening of the tender.
- f) The prescribed EMD shall be submitted on or before the date and time of opening of the bid.
- g) The tenders not accompanied with the required test certificates.
- h) The tender shall not be conditional.
- i) There must not be any violation to the terms & conditions set forth and provided in the tender specification.
- j) Attested copies of I.T. Pan card and VAT registration certificate / VAT Clearance shall be submitted along with the tender.
- k) **The tenderer must submit sample of the item quoted along with the tender documents before tender opening for sample scrutiny by the purchaser.**
- l) **Authorized dealership certificate** issued by the manufacturers (**In case of authorized dealer**), valid on the date of opening of the tender shall be submitted along with the tender.

SECTION-III
[LIST OF ANNEXURES]

The following schedules and Performa are annexed to this specification and contained in Section-III as referred to in the relevant clauses.

1	Declaration form	ANNEXURE-I
2	Abstract of terms and conditions to accompany Section-II of Part-I	ANNEXURE-II
3	Bidders information	ANNEXURE-III
4	Schedule of Quantity and delivery schedule	ANNEXURE-IV

ANNEXURE - I
DECLARATION FORM

To

The General Manager (Elect)
EHT O&M Circle, OPTCL, Bhubaneswar

Sub:- Tender Specification No-_____

Sir,

1. Having examined the above specification together with terms & conditions referred to therein * I/We the undersigned hereby offer to supply the materials/equipments covered therein complete in all respects as per the specification and General conditions, at the rates, entered in the attached contract schedule of prices in the Tender.
2. * I / We hereby undertake to have the materials/equipments delivered within the time specified in the Tender.
3. * I / We hereby guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. * I/We certify to have submitted the bid electronically by remitting *online payment /D.D./ remitting the cost of tender, herewith and this has been acknowledged by your letter / receipt No. _____
Dated _____
5. In the event of Tender, being decided in *my/our favour, * I/We agree to furnish the Composite B.G. in the manner, acceptable to ODISHA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to *me/us as per clause-21 of section-II of this specification within 15 days of issue of letter of intent/purchase order failing which *I/We clearly understand that the said letter of Intent/Purchase order will be liable to be withdrawn by the purchaser, and the EMD deposited by us shall be forfeited by OPTCL.

Signed this day of 20____

Yours faithfully

Signature of the Tenderer

with seal of the company

[This form should be dully filled in by the tenderer and uploaded at the time of submission of tender.]

* (Strikeout whichever is not applicable).

ANNEXURE-II

ABSTRACT OF GENERAL TERMS AND CONDITIONS OF CONTRACT [COMMERCIAL] TO ACCOMPANY PART-I

1(a)	Cost of Tender Document: OPTCL Money Receipt No. & Date / D.D No & Date.	
1(b)	Earnest money furnished. Bank Guarantee No. & Date / D.D No. & Date.	
1(c)	Tender Processing Fee: e-payment confirmation	
2	Manufacturer's supply experience including user's certificate furnished or not.	<i>Yes/No</i>
3	Delivery :- Whether agreeable to OPTCL's desired delivery period as indicated at in the specification	<i>Yes/No</i>
4	Guarantee:- Whether agreeable to OPTCL's terms.	Yes/No
5	Whether agreeable to furnish Composite B.G. in case his tender be successful	Yes/No
6.	Terms of payment:- Whether agreeable to OPTCL's terms or not	Yes/No.
7.	Nature of price:- FIRM	Yes/No
8.	Penalty:- Whether agreeable to OPTCL's terms or not	Yes/No
9.	Validity: - Whether agreeable to OPTCL's terms or not	Yes/No
10.	Whether recent type test certificates from any Government approved laboratory are furnished or not.	Yes/No
11.	Whether materials are ISI/ISO marked.	Yes/No
12.	Furnished Manufacturer's name and its trademark.	Yes/No
13.	Whether registered under ODISHA Sales Tax Act. 1947	Yes/No
14.	Whether declaration form duly filled in furnished or not.	Yes/No.

Place: -

Date: -

Signature of the Tenderer with seal of the
company

ANNEXURE-III
BIDDER'S INFORMATION

SL NO	The bidder shall furnish general information in the following format	
NAME OF THE BIDDER		
1	Address:-	
2	City	
3	Pin Code	
4	Contact person's Name :-	
5	Telephone No. office & Residence:-	
6	FAX No:-	
7	EMAIL:-	
9	SERVICE TAX REGISTRATION NO.	
10	PAN NO.	

ANNEXURE-IV

SCHEDULE OF QUANTITY ALONGWITH DELIVERY SCHEDULE

<i>Sl. No</i>	<i>Description of Material</i>	<i>Unit</i>	<i>Qty</i>
1	Supply of Sodium Bentonite powder Grid S/S Ranasinghpur ó 59.9 MT Grid S/S Puri ó 29.8 MT Grid S/S Nayagarh.- 31.1 MT Grid S/S Chandaka ó 27.0 MT	MT	147.80

PART I

SECTION IV

(A) TECHNICAL SPECIFICATION

1. **SODIUM BENTONITE** as Ground Enhancement Material/ Backfill / Grounding Improvement Material shall be maintenance free. It should not need re-charging with salts or any other chemicals and shall maintain its earth resistance with time. It shall be placed around earth electrode in the earth pit/earth mat to improve the conductivity of earth electrode & ground contact area. The material shall be supplied in sealed moisture proof bags. These bags shall be marked with the name of the manufacturer or trade name, quantity, batch no., date of manufacture etc. It shall have following characteristics.
2. **Ground Enhancement Material / Backfill / Grounding Improvement Material shall confirm IEEE 80-2000 Clause No.14.5 (b).**

“It is often impossible to achieve the desired reduction in ground resistance by adding more grid conductors or ground rods. An alternate solution is to effectively increase the diameter of the electrode by modifying the soil surrounding the electrode. The inner shell of soil closest to the electrode normally comprises the bulk of the electrode ground resistance to remote earth. This phenomenon is often utilized to an advantage, as follows:

(b) Use of bentonite, natural clay containing the mineral montmorillonite, which was formed by volcanic action years ago. It is noncorrosive, stable, and has a resistivity of 2.5 Ω -m at 300% moisture. This low resistivity results mainly due to an electrolytic process between water, Na₂O (soda), K₂O (potash), CaO (lime), MgO (magnesia) and other mineral salts that ionize forming a strong electrolyte with pH ranging from 8 to 10. This electrolyte will not gradually leach out, as it is part of the clay itself. Provided with a sufficient amount of water, it swells up to 13 times its dry volume and will adhere to nearly any surface it touches. Due to its hygroscopic nature, it acts as a drying agent drawing any available moisture from the surrounding environment. Bentonite needs water to obtain and maintain its beneficial characteristics. Its initial moisture content is obtained at installation when the slurry is prepared. Once installed, bentonite relies on the presence of ground moisture to maintain its characteristics. Most soils have sufficient ground moisture so that drying out is not a concern. The hygroscopic nature of bentonite will take advantage of the available water to maintain it as installed condition. If exposed to direct sunlight, it tends to seal itself off, preventing the drying process from penetrating deeper. It may not function well in a very dry environment, because it may shrink away from the electrode, increasing the electrode resistance (Jones [B90]).”

3. Ground Enhancement Material/Backfill / Grounding Improvement Material in its set form shall have a resistivity of not more than 3.0 Ω -m
4. Ground Enhancement Material / Backfill / Grounding Improvement Material shall comply with the requirements and all applicable tests as per part-7 of IEC 62561. The same shall be tested at NABL accredited laboratory and reports are to be verified at site.
 - a) Resistivity test using soil box (Resistivity shall be tested by making a 30cm cube of the material & checking the resistance across the opposite faces of the cube.)
 - b) Leaching test
 - c) Sulfur determination
 - d) Corrosion test
5. It must set up firmly and not dissolve or decompose or otherwise pollute the soil or the local water table.
6. It shall be suitable for use in dry form or slurry form.
7. The Ground Enhancement Material/ Backfill / Grounding Improvement Material shall not depend on the continuous presence of water to maintain its conductivity.
8. Material shall be nontoxic, nonreactive, non-explosive & non-corrosive.
9. Material shall be thermally stable between temperature ranges of -10°C to 60°C.
10. Material shall not decompose or leach out with time.
11. It shall not pollute the soil or local water table & shall meet environmental friendly requirement for landfill.
12. It should be a little alkaline in nature with pH value of > 8 & < 10 . Test certificate from NABL approved laboratory to be provided for the compound so designed.
13. It should have better hygroscopic properties to absorb moisture. It should absorb & release the moisture in the dry weather condition and help in maintaining the moisture around the earth electrode.
14. It should have capacity to retain more than 10% moisture at 105°C. Test certificate for the same from NABL approved laboratory shall be submitted.
15. **The Sodium Bentonite thus provided shall swell at least up to 5 times its dry volume.**

(B) Verification and tests for Ground Enhancement Material

- i) Sampling of bag shall be 1 bag per lot of 50 bags received at site

As per part-7 of IEC 62561, resistivity test using soil box shall be carried out and value of the same shall be below 3.0 Ω -m.

ii) As per part-7 of IEC 62561, following test certificates shall be verified at site for

- Sulfur determination
- Leaching Test
- Corrosion Test

(C)CHEMICAL COMPOSITION OF BENTONITE

- a. Aluminium Carbonate: Al_2CO_3 - 22% - 28%
- b. Silicon Dioxide: SiO_2 - 37% - 46%.

- Bentonite Chemical Equation: $\text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2 \cdot \text{H}_2\text{O}$ (Reade Advanced Materials)
Montmorillonite Chemical Equation: $\text{Na}_{0.2}\text{Ca}_{0.1}\text{Al}_2\text{Si}_4\text{O}_{10}(\text{OH})_2(\text{H}_2\text{O})_{10}$
- **Sodium bentonite** is the name for the ore whose major constituent is the clay mineral, sodium montmorillonite.
- **Element Wise Composition of Sodium Bentonite**

Reference: *Int. J. Electrochem. Sci.*,
Vol.8, 2013 (11437)

Table 4. Composition of each element present in Sodium Bentonite

Element Line	Weigh (%)	Weight Error (%)	Atom (%)	Atom Error (%)	Compound %	Normalized Compound (%)
O K	4.99S	---	9.11	+/- 0.07	---	---
Na K	1.15	+/- 0.08	1.46	+/- 0.11	1.15	1.15
Mg K	0.9	+/- 0.08	1.08	+/- 0.09	0.9	0.9
Al K	27.36	+/- 0.26	29.62	+/- 0.28	27.36	27.36
Si K	44.46	+/- 0.36	46.25	+/- 0.38	44.46	44.46
Si L	---	---	---	---	---	---
Cl K	2.24	+/- 0.10	1.85	+/- 0.08	2.24	2.24
Cl L	---	---	---	---	---	---

K K	0.84	+/- 0.08	0.63	+/- 0.06	0.84	0.84
K L	---	---	---	---	---	---
Ca K	---	---	---	---	---	---
Ca L	---	---	---	---	---	---
Ti K	6.45	+/- 0.26	3.94	+/- 0.16	6.45	6.45
Ti L	---	---	---	---	---	---
Fe K	11.61	+/- 0.33	6.07	+/- 0.17	16.6	16.6
Fe L	---	---	---	---	---	---
Total	100		100		100	100

Application

Bentonite moisture retaining clay may be used to reduce the contact resistance and increase the effective size of earth electrodes. e.g. as a backfill for earth rods installed in drilled holes or as a layer encapsulating horizontal earth conductors buried in a trench. It has been used for many years as an earth electrode backfill to help reduce an earth electrodes' resistance to earth by retaining moisture in the immediate vicinity of the earth rod. It also has the added advantage of making intimate contact with the electrode and the surrounding soil, thus helping to protect the electrode from corrosion. Bentonite will absorb up to five times its weight in water and swell to thirteen times its dry volume. At six times its dry volume it is a very dense, pasty clay that can hold its own shape and will adhere to any surface it touches. These two characteristics solve the compaction and soil to rod contact problems. Bentonite hydrates chemically, holding water in its structure. The material is natural clay formed years ago by volcanic action. It is non-corrosive, stable and will not change characteristics as time elapses. The resistivity of Bentonite varies from about 3 Ohm-m upwards depending on its moisture content (BS7430 clause 8.5)

Mixing Procedure

The expansion of Bentonite depends very much on how much water it is mixed with. As a rule of thumb, we assume an expansion ratio of 2:1.

$$1 \times 25\text{kg bag} = 1\text{cu ft or } 0.0283\text{m}^3 \text{ (dry)}$$

$$= 2\text{cu ft or } 0.0566\text{m}^3 \text{ (wet)}$$

Example:

To backfill 10 numbers of Earth rods in 3.6m deep, 0.1m diameter boreholes will require the following quantity of Bentonite:

Volume of boreholes

$$= 10 \times \pi r^2 \times h = 10 \times \pi \times 0.05^2 \times 3.6$$

$$= 0.28\text{m}^3$$

$$\text{Number of Bags} = 0.28 / 0.0566 = 5\text{bags}$$

GENERAL MANAGER