



ଓଡ଼ିଶା ବିଦ୍ୟୁତ ଶକ୍ତି ସଂଚାରଣ ନିଗମ ଲିଃ.
ODISHA POWER TRANSMISSION CORPORATION LIMITED

(A Govt. of Odisha undertaking)

CIN – U40102OR2004SGC007553

REGD. OFFICE: JANPATH, BHUBANESWAR-751022,

OFFICE OF THE DY. GENERAL MANAGER (Elect)

AT/PO: PARADEEPGARH, JAGATSINGHPUR-754141

Tel-9438907674, E-mail-ehm.div.prdeep@optcl.co.in

TENDER SPECIFICATION NO: 01/PDP/2024-25

FOR

**SUPPLY OF SODIUM BASED BENTONITE POWDER FOR EARTH MAT
RENOVATION WORK AT 220/132/33kV GRID SUB-STATION,PARADEEP UNDER EHT
(O&M) DIVISION, PARADEEP**

COMMENCEMENT OF SALE: Dt.13.06.2024 (From 10.30A.M up to 5.00PM)
OF TENDER PAPER

LAST DATE OF SALE OF: Dt.25.06.2024 (Up to 5.00 P.M.)
TENDER PAPER

LAST DATE & TIME OF: Dt.26.06.2024 (Up to 3.30 P.M.)
RECEIPT OF TENDER PAPER

DATE & TIME OF OPENING: Dt.26.06.2024 (at 4.30 P.M.)
OF TEN

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TENDER SPECIFICATION FOR OPEN TENDER CALL NOTICE NO. 01/PDP/2024-25

1. SECTION-I Instruction to tenderers
2. SECTION-II General Terms and Condition of contract
3. SECTION-III Technical Specification
4. SECTION IV Schedule of Quantity, Delivery and Price Schedule
5. SECTION-V Annexures
6. Cost of tender document: **Rs.2000/-+ 18 % GST = Rs 2360/-**
(Rupees Two thousand Three Hundred Sixty only) By
Bank Demand draft to be drawn in favour of EHT
(O&M) Circle, Cuttack, (Non-Refundable), Payable
at Cuttack
7. EMD: **Rs 5000/- in shape of Bank DD only (Rupees Five**
Thousand) only

SECTION-I
INSTRUCTION TO TENDERERS

1. The bidders must read in detail the “Instruction to Bidder”, “General terms and conditions” and “Technical Specification” before filling the Tender documents. There are five sections in this Tender Specification.
2. **TENDERS:**
 - a) Reputed Manufacturers/ Experienced Suppliers/ Authorized Dealers / OPTCL registered vendors having experience in supplying Electrical items, similar nature of Materials possessing valid Pan card, GST registration and clearance certificate (henceforth known as qualifying criteria) are only eligible to participate in the tender bid.
 - b) In case of the bidders from **Odisha based micro, small enterprises (MSEs), and start-up enterprises registered under District Industries Centres of Odisha, OSIC and/or NSIC, the tender paper shall be provided free of cost**, provided the valid MSME UDYAM and NSIC Registration certificate are submitted, failing which the tender shall be rejected. The manufacturing of clamps, connectors, hardware fittings and other electrical components should be detailed under National Industry Classification Code in the UDYAM registration certificate or under “Store Details certificate” under NSIC registration.
 - c) Bidders must submit their bids in duplicate with original signature.
 - d) Tender must be submitted in sealed envelopes super-scribed as **Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at 220/132/33kV Grid Sub-station, Paradeep under EHT (O&M) Division, paradeep** against this office **OTCN No. 01/PDP/2024-25** and addressed to **Dy. General Manager, EHT (O&M) Division, paradeep**.
 - e) Tender shall be submitted either in Person or by Registered post with A.D/Courier service. Any other means of delivery shall not be accepted. Detailed postal address with PIN, phone No. / E-mail must be mentioned in the application requesting for Tender document and on the Tender Bid. The Tender submitted in person is to be dropped in the Tender Box. Tenders received after due date and time will not be considered. The authority will not be responsible for receipt of Tender after due date and time for postal delay or any other reasons.
 - f) Conditional offers will not be accepted.
 - g) If the last date of receipt of tender and its opening is a holiday, it will be received and opened on the next working day in same time.
3. **EARNEST MONEY DEPOSIT (EMD):** The tender must be accompanied by **Rs 5000/-** as EMD in shape of **Bank Demand Draft** drawn in favour of **EHT (O&M) Circle, Cuttack** payable **at Cuttack**. The EMD of successful Tenderers will not be adjusted towards security deposit and shall be refunded on written request after receipt of security deposit. The EMD of all

unsuccessful Tenderers shall be refunded on written request after finalization of Tender. No interest shall be paid on E.M.D. **Offers without EMD are liable to be rejected outright.**

The local (In the state of Odisha) **Micro and small Enterprises (MSEs)** registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate by submitting **Earnest Money Deposit @ 50% (fifty percent)** of the amount indicated above.

4. FORFEITURE OF E.M.D.:

- a) In the event the successful tenderer failing to accept the order or supply the materials as per the technical specification EMD/S.D. so deposited shall be forfeited.
- b) Any deviation from the terms and conditions of the contract awarded, may also lead to forfeiture of EMD without any notice.
- c) **EMD not claimed by the bidder for refund within one year of the date of purchase order shall be forfeited.**

5. INFORMATION OF COMPETITORS: Bidders have right to know information on competitors only at the time of opening of the bids. No further information on competitors shall be provided at any other point/stage of the tender without prejudice to Right to Information Act. 2005.

6. SUBMISSION OF SAMPLE: The bidder must submit the at least 1 KG of Bentonite powder sample for test and verification by the sample scrutiny committee of this office without which the tender will be rejected. The samples so provided by different bidders shall be scrutinized by a committee to be constituted by the purchaser. If required, the bidder or their authorized representatives may be informed to remain present during scrutiny of samples. The date of sample scrutiny will be intimated to the bidders in due course. Samples shall be evaluated based on the quality of materials as per the technical specifications. The bidders, whose samples are approved by the committee, shall be considered for price comparison. *In no case, the bidders shall be allowed for change of sample.*

7. OPENING OF TENDERS :-

- a) Copy of up-to-date PAN Card and GST Registration certificate / Manufacturer or Authorized Dealership certificate (wherever applicable) should be enclosed with the tender, which should be valid on the date of opening of the tender. **The Tenderers may be asked to produce all original documents for verification any time after the bid opening. If any Tenderer fails to produce the same then the tender bid shall be out rightly rejected.**

- b) Bidders themselves or their authorized representatives (possessing authorization letter in original as per form in Annexure No: V) shall be allowed to attend opening event of the tender.
- 8. The Purchaser may alter the quantities of materials 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 tenderer, if considered necessary in the interest of the Purchaser to get the goods / equipment earlier (In case of 02 bidders: 70:30 ratio and in case of 03 bidders: 50:30:20 ratio).**
9. Only those who have purchased the tender specification in the name of their firm from this office can submit their tender. Tenders submitted by others will be rejected.
10. The Tenderers may please note that the Word 'item' in the paragraph shall mean the materials/equipment as specified in the 'Tender Specification'. In case of deviations, the decision of the purchaser shall be final.
- 11. The purchaser reserves the right to reject the lowest or any other tender or all tenders without assigning any reason whatsoever.**
12. Tenders should be prepared clearly and without any overwriting and corrections. Erasures and other changes shall bear the dated initial of the person signing the tender.
13. 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.
14. All other Terms and Conditions of OPTCL purchase rules shall be applicable.
- 15. The tenders shall be out rightly rejected if they do not comply with the following requirements.**
- a) Tenderer should have purchased the relevant tender specification from the office of the Dy. General Manager (Elect.), EHT (O&M) Division, paradeep and indicate the money receipt No and date of this Office.
- b) Tenders shall be submitted in person or by Registered post with A.D/Courier service which should be received before the opening of tender as specified in the tender call notice.
- c) Tenders shall not be submitted telegraphically or by FAX.
- d) Tenders shall be accompanied with the prescribed earnest money deposit / attested Xerox copies of proof of exemption for furnishing the E.M.D. if any.
- e) Tenders shall be kept **valid for a minimum of 180 days** from the date of opening of the tender.
- f) The tender shall not be conditional.

- g) In case of authorized dealer, necessary authorized dealership certificate should be submitted along with the tender duly issued by the manufacturer which should be valid on the date of opening of the tender. **The registered suppliers have to mention the name of the manufacturer in their tender.**
- h) Violation of terms and conditions set forth and provided in the tender specification.
- i) **Non submission of the following documents**
- i) Copies of I.T. Pan Card.
 - ii) Valid GST registration certificate
 - iii) **The tenderer shall submit the guaranteed technical particulars of the quoted items along with the descriptive literature, composition details along with the test certificates of the test carried out in any Govt. approved/ NABL Accredited test laboratory etc.**
 - iv) Details of Past Experience i.e. Purchase orders along with user's performance certificate to prove the satisfactory performance of the delivery contract executed within last 3(three) financial years.
 - v) Declaration Form as per **Annexure-II** (duly signed).
 - vi) Abstract of Terms & conditions in prescribed proforma as per **Annexure-I**.
 - vii) Bidder's Information as per **Annexure III**.
 - viii) Declaration of No-Blacklisting as per **Annexure –VI**, duly signed.
 - ix) General Terms & Conditions of contract as per Section-II of the Specification. (All the required documents are to be submitted).
 - x) **Non submission of sample** of the quoted items. **The tenderer must submit samples of the items quoted in the sample schedule along with the tender documents on or before tender opening time for sample scrutiny by the purchaser.**
- j) There must not be any deviation to the delivery schedule as specified in tender specification.

Dy.General Manager (Electrical)
EHT (O&M) Division, Paradeep

SECTION-II
GENERAL TERMS AND CONDITIONS OF CONTRACT

1. **SCOPE OF CONTRACT:** The scope of contract shall be to supply good quality Sodium based Bentonite powder to be used for decreasing the earth resistivity value at 220/132/33kV Grid Substation Paradeep as per the **specification** and deliver the material free by Rail/Road transport at OPTCL site store as per the delivery schedule.
2. **PRICE:** The price should be **firm** and FOR destination to site store at Grid substation Paradeep, by rail/road transport. The price should be inclusive of packing, forwarding, freight, insurance charges etc. GST extra, shall be paid to the Purchaser as per actual against production of documentary evidence. The amount & nature of taxes should be clearly specified in the price schedule
3. **DELIVERY:** The materials shall be supplied within **45 days** from the date of issue of purchase order. The purchaser however reserves the right to reschedule the delivery, change the destination.
4. **VALIDITY:** Price with terms and conditions of the offer shall be valid for a minimum period of 180 days from the date of opening of tender failing which their tenders will be rejected.
5. **INSURANCE:** Insurance of materials is to be done by the supplier at his own cost. The responsibility of delivery of the materials at destination in good condition rests with the supplier. Any claim with the insurance company Railway authority/Road transport authorities 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 the receipt of the materials at destination without waiting for the settlement of the claims with the carriers and underwriters.
6. **DESPATCH INSTRUCTIONS:** The equipment / 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.
7. **TERMS OF PAYMENT:** **100%** taxable value of the consignment / purchase order with 100% Goods & Services Tax in full as applicable (including freight & Insurance charges) will be paid on receipt of materials in good condition at stores / desired site and satisfactory material verification thereof and upon submission of bills. This is subject to furnishing and approval of **Composite Bank Guarantee** at the rate of 10% [Ten percent] of Taxable Value plus GST thereon [*In case successful bidder is a local Micro and small Enterprise (MSEs), based in Odisha & registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries,*

OSIC and NSIC, 5% (Five percent)] & on prior approval of guarantee certificate by the Purchaser. Tax as applicable shall be deducted from the source.

8. **PAYING OFFICER & CONSIGNEE:** The Paying officers and Consignees are detailed as follows:

Sl. No	PAYING OFFICER	Paying officer for scrutiny & check of bills	CONSIGNEE
1	DDO,EHT(O&M) CIRCLE, CUTTACK.	DGM (Elect.) EHT (O&M) Division, Paradeep.	SDO, 220/132/33kV Grid Substation, Paradeep

9. **PRICE REDUCTION SCHEDULE FOR DELAY IN DELIVERY:** If the supplier fails to deliver the materials within the delivery period as stipulated under **Clause No.3 (Section-II)** of this tender document or any extension granted thereto, the purchaser shall recover penalty for a sum of half percent (i.e. 0.5 percent) of the contract price for each calendar week or part thereof of delay from the supplier.

However the total amount of penalty shall not exceed 5% (five percent) of the cost of undelivered items. Materials will be deemed to have been delivered only when all the component parts are delivered. If certain components are not delivered in time, the supply will be treated as delayed until such time the missing/undelivered parts are delivered.

10. **EXTENSION OF TIME:** If the delivery of materials is delayed due to reason beyond the control of supplier, the supplier shall without delay give notice to the purchaser in writing for an extension of time with detail justification. The purchaser on receipt of such notice may agree to extend the contract delivery date if reasonable but without prejudice to other terms and conditions of this contract.
11. **GUARANTEE PERIOD:** The stores covered by this specification should be guaranteed for satisfactory operation and against defects in design, materials for a period of 03 months from the last date of delivery. The above guarantee certificate shall be furnished in triplicate to the purchaser for approval. Any defect noticed during this period should be rectified / replaced by the supplier free of cost to the purchaser provided such defects are due to ~~faulty design, bad workmanship~~ or bad materials used, within one month upon written notice from the purchaser failing which provision of **Clause no. 9** shall apply.
12. **GST REGISTRATION CERTIFICATE, PAN CARD & AUTHORIZED DEALERSHIP CERTIFICATE (WHEREVER APPLICABLE):** Attested legible Xerox copies of Income Tax PAN Card, GST Registration & clearance Certificate, valid on the date of opening of the tender, and authorized dealership certificate (wherever applicable) should be submitted along with tenders without which tender will be rejected at the time of opening. If required, the firm

may be asked to produce original documents for verification any time after opening of the 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.

13. **TEST CERTIFICATE:** Test certificate from Govt approved / NABL approved laboratory that are to be provided for the compound shall indicate the following:

- It should be a little alkaline in nature with pH value of > 7 & < 9 .
- 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.

14. **SUBMISSION OF PROOF REGARDING MANUFACTURER'S CERTIFICATE/ AUTHORISED DEALERSHIP CERTIFICATE, PRICE LIST OF THE MANUFACTURER, PAST EXPERIENCE OF EXECUTION OF ORDER PERFORMANCE CERTIFICATE & TECHNICAL LITERATURE.** Attested legible Xerox copies of valid authorized dealership certificate, manufacturers Price list and technical literature etc. should be furnished along with the tender if applicable. If required, the firms may be requested to produce such original certificates for verification. Past experience of execution of Purchase Orders need to be furnished by the bidder. The tender shall be accompanied with technical literature, leaflets, manuals if any. The bidders shall submit copy of legibly written **user's certificate to prove the satisfactory execution of delivery contract of the quoted materials within last 03 (three) financial years. The purchaser reserves the right to waive off the stipulation in respect of experience in case of new firms**

15. **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.

16. **SECURITY DEPOSIT, 100% PAYMENT AND PERFORMANCE GUARANTEE:**

a) **For manufacturers / dealers / suppliers situated inside & outside the state of ODISHA.**

A **Composite Bank Guarantee** towards **Performance Security Deposit** for **10% [ten percent]** of the **total landing cost (Taxable Value plus GST thereon)** of the purchase order (***In case of successful bidder who is a local Micro and small Enterprise(MSEs) (In the state of Odisha) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC 5% (Five percent)***) shall be furnished from any nationalized/scheduled bank having a place of business at Cuttack, drawn in favour of the office of the **Deputy General Manager (EI) EHT (O&M) Division, 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.100.00 [Rupees One Hundred]** only or as per the prevalent rules, valid for a period of 2 months more than the Guarantee 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 Cuttack, 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 is provided at **Annexure-X, Section-V**
- e) In case the supplier does not furnish bank guarantee towards security deposit the same shall be deducted during the payment of the bill.
- f) The aforesaid BG shall be returned to the Contractor after successful completion of the guaranteed obligations under the contract

17. STANDARDS: The materials offered shall confirm to the standards as mentioned in the technical specification.

18. ARBITRATION: In the event of any dispute arising due to this contract, after due notice of the claim, the matter shall be referred to any arbitrator nominated by the Managing Director, OPTCL. The bidder agrees that the arbitrator could be any official of OPTCL. The bidder shall not have any objections in this regards and such appointment and the award of the arbitrator shall be final and binding on arbitration as per the Arbitration and Conciliation Act. 1996. The venue of the arbitration will be Bhubaneswar.

19. JURISDICTION OF COURT: For the purpose of jurisdiction of Court in the event of any dispute shall be deemed to have entered into any Court of law at Cuttack to which the jurisdiction of Odisha High Court extends and it is hereby expressly agreed that neither party shall be competent to bring a suit in regard to the matter covered by this purchase at any place outside in State of Odisha.

**DY. GENERAL MANAGER (EL)
EHT (O&M) DIVISION, PARADEEP**

SECTION III

(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.

a) **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's 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]).”

2. **Ground Enhancement Material / Backfill / Grounding Improvement Material in its set form shall have a resistivity of not more than 3.0 Ω -m**

3. 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 4 electrode soil box method)
 - b) Leaching test (The leaching test shall be performed according to EN 12457-2)
 - c) Sulfur determination (Test for the determination of sulphur shall be performed according to ISO 4689-3 or ISO 14869-1 and the adapted analyses instrumentation (ICP-OES, ICP-AES or other ICP methods)
 - d) Corrosion test (ASTM G102-89, Standard Practice for Calculation of Corrosion Rates)
4. It must set up firmly and not dissolve or decompose or otherwise pollute the soil or the local water table.
5. It shall be suitable for use in dry form or slurry form.
6. The Ground Enhancement Material/ Backfill / Grounding Improvement Material shall not depend on the continuous presence of water to maintain its conductivity.
7. Material shall be nontoxic, nonreactive, non-explosive & non-corrosive.
8. Material shall be thermally stable between temperature ranges of -10°C to 60°C.
9. Material shall not decompose or leach out with time.
10. It shall not pollute the soil or local water table & shall meet environmental friendly requirement for landfill.
11. It should be a little alkaline in nature with pH value of > 8 & < 10 . Test certificate from NABL / Govt. approved laboratory to be provided for the compound.
12. 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.
13. 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.
14. The Sodium Bentonite thus provided shall swell at least up to 5 times its dry volume.
- 15. Verification and tests for Ground Enhancement Material**
- a) 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 Ohm-m.
 - b) As per part-7 of IEC 62561, following test certificates shall be verified at site for
 - Sulfur determination
 - Leaching Test
 - Corrosion Test

16. CHEMICAL COMPOSITION OF BENTONITE

1. Aluminium Carbonate: Al_2CO_3 - 22% - 28%

2. 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**

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 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 a 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.

$$\begin{aligned} 1 \times 25\text{kg bag} &= 1\text{cu ft or } 0.0283\text{m}^3 \text{ (dry)} \\ &= 2\text{cu ft or } 0.0566\text{m}^3 \text{ (wet)} \end{aligned}$$

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

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

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

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

**Dy. GENERAL MANAGER (ELEC)
EHT (O&M), DIVISION, PARADEEP**

PRICE BID

Sl No	Description of Material	Unit	Qty	Rate/ Unit in Rs Excluding GST	Amount in Rs excluding GST	CGST (in %)	CGST Amount in RS	OGST (in %)	OGST Amount in Rs	Total GST	Amount in Rs including GST
1	Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at 220/132/33kV Grid Substation,Paradeep Quantity Required: 37500 kg Standard Available Bag Size: 50kg No. of bags required: 37500/50 = 750 bags HSN Code:	Nos	750								

In Words – (Rupees

Signature of the Bidder

With Seal

SECTION-V

[LIST OF ANNEXURES]

The following schedules and proformas are annexed to this specification as referred to in the relevant clauses. Wherever necessary, the annexures duly filled and signed by the bidder are to be scanned and uploaded along with the tender bid.

1	Abstract of terms and conditions to accompany Section-II of Part-I	ANNEXURE-I
2	Declaration form	ANNEXURE-II
3	Bidder's Information	ANNEXURE-III
4	Letter of Application	ANNEXURE -IV
5	Letter of Authorization for attending Bid Opening	ANNEXURE -V
6	Proforma of self-declaration- Black listing/ debaring action	ANNEXURE -VI
7	Litigation History	ANNEXURE -VII
8	Work Experience	ANNEXURE -VIII
9	Anti-Collusion certificate	ANNEXURE -IX
10	Proforma for composite bank guarantee for security deposit payment and performance	ANNEXURE -X

ANNEXURE-I

ABSTRACT OF TERMS AND CONDITIONS

(This proforma should be filled with all information and should be furnished along with the tender)

1(a)	Cost of Tender Document: OPTCL Money Receipt No. & Date / D.D No & Date.	
1(b)	Earnest money deposit (deposited in shape of Bank Draft/Pay Order/Bankers Cheque): (a) Name of the Bank: (b) Amount deposited: (c) Bank Draft No. & Date:	
2	Whether Attested copy of valid EHT/HT contractor License furnished or not.	Yes/No
3	Bidders' past experience furnished or not (As per Clause No: 14)	Yes/No
4	Security-cum-Performance Guarantee (Whether agreeable to OPTCL terms)	Yes/No
5	Guarantee:- Whether agreeable to OPTCL's terms. (As per Clause No: 11)	Yes/No
6.	Whether agreeable to furnish Composite B.G. in case his tender be successful	Yes/No
7.	Terms of payment:- Whether agreeable to OPTCL's terms or not	Yes/No.
8.	Nature of price:- FIRM	Yes/No
9.	Penalty:- Whether agreeable to OPTCL's terms or not	Yes/No
10.	Validity: - Whether agreeable to OPTCL's terms or not	Yes/No
11.	Whether materials to be supplied are to be ISI/ISO marked.	Yes/No
12.	<u>Copy of GST Registration & clearance Certificate furnished</u>	Yes/No
13.	Copy of PAN furnished:	Yes/No
14.	Guaranteed Technical particulars furnished	Yes/No
15.	Technical literature & manufacturer's price list furnished	Yes/No
16.	Whether declaration form duly filled in furnished or not.	Yes/No.
17	Agreed to all terms and conditions of the tender specification	Yes/No

(Strike off whichever is not applicable)

Signature of the Tenderer with Seal

Date:

Place:

ANNEXURE - II

DECLARATION FORM

To,

The Dy. General Manager (Elect)
EHT (O&M) Division, OPTCL
Paradeep.

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 take up the ***Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at 220/132/33kV Grid Sub-station,Paradeep under EHT (O&M) Division,paradeep*** 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 the ***Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at 220/132/33kV Grid Sub-station, Paradeep under EHT (O&M) Division, Paradeep*** as specified in the Tender.

3. I / We hereby guarantee the validity of the required documents from concerned authorities to be submitted as per the ELIGIBILITY FOR BID SUBMISSION mentioned in the Tender specification.

4. I/We certify to have submitted the bid physically by remitting *cash/money order /D.D./ towards the cost of tender, herewith and this has been acknowledged by your letter / money receipt No._____ Dated_____.

5. In the event of Tender, being decided in *my/our favour, * I/We agree to furnish the Composite B.G. / Fixed Deposit in the manner, acceptable to ODISHA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to *me/us as per **Clause-16 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 on.....day of....., 2024

Yours faithfully

Signature of the Tenderer
with seal of the company

* (Strike out whichever is not applicable)

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	GST REGISTRATION NO.	
10	PAN NO.	

ANNEXURE IV
LETTER OF APPLICATION

**(To be submitted on letter head of the bidding company with sign and stamp and along
with tender bid)**

[Location, Date]

To,

The Dy. General Manager (Elect),
EHT (O&M) Division, OPTCL,Paradeep.

**Sub: - Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at
220/132/33kV Grid Sub-station, Paradeep under EHT (O&M) Division, Paradeep.**

Dear Sir,

With reference to your tender dated _____, I have examined all the relevant documents and understood their contents, hereby submit our Technical and Financial Proposal for the proposed *Supply of Sodium based Bentonite Powder for Earth Mat Renovation work at 220/132/33kV Grid Sub-station, Paradeep under EHT (O&M) Division, Cuttack.*

1. All information provided in the proposal and in the Appendices is true and correct and all documents accompanying such Proposal are true copies of their respective original document. This Statement is made for the express purpose of engagement as the Contractor for the aforesaid Assignment.
2. I shall make available to the Authority any additional information if any deemed necessary or required.
3. I acknowledge the right of the Authority to reject our application without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
4. I certify that in the last three years, we or any of our Associates have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.
5. I declare that: -
 - a) I have examined and have no reservations to the tender Document, including any Addendum issued by the Authority.
 - b) I do not have any conflict of interest in accordance with the prescriptions in the tender

Document.

- c) I have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in the Tender Document.
 - d) I hereby certify that we have taken steps to ensure that in conformity with the provisions of the tender, no person acting for us or on our behalf will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.
6. I agree and understand that the proposal is subject to the provisions in the Tender Document. In no case, shall I / we have any claim or right of whatsoever nature if the Assignment is not awarded to me / us or our proposal is not opened or rejected.
7. I agree to keep this offer valid for 180 (one hundred eighty) Days from the proposal Due Date specified in the Tender Document.
8. In the event of my firm being selected as the Contractor, I shall abide by the terms and conditions in accordance with the work order, which shall be provided by Client. We agree not to seek any changes in the aforesaid work order and agree to abide by the same.
9. I agree and undertake to abide by all the terms and conditions in the Tender Document. In witness thereof, I/we submit this Proposal under and in accordance with the terms in the Tender Document.

Yours sincerely,

Authorized Signature [In full and initials]

Name and Title of Signatory

Name of Firm Address

ANNEXURE V

LETTER OF AUTHORIZATION FOR ATTENDING BID OPENING

Tender No: OTCN/01/PDP/2024-25/

Date:

To,

The Dy. General Manager (Electrical),
EHT (O&M) Division, OPTCL,
Paradeep.

**Subject: Authorization for attending bid opening on..... (Date) in the
Tender OTCN/01/PDP/24-25 for *Supply of Sodium based Bentonite Powder for
Earth Mat Renovation work at 220/132/33kV Grid Sub-station,Paradeep under
EHT (O&M) Division,Paradeep (tender specification no:.....)***

Dear Sir,

Following persons are hereby authorized to attend the bid opening for the tender mentioned above on behalf of..... (Bidder) in order of preference given below.

Order of Preference	Name	Specimen Signature
1.		
2.		

(Specimen Signature duly attested)

Officer authorized to sign the bid documents on behalf of the bidder.

Yours faithfully,

Date:

Signature of authorized
person

Place:

Full Name:

Seal

Note:

- 1. Only one representative shall be allowed.**
- 2. Permission for entry to the hall where bids are opened may be refused in case authorization as prescribed above is not produced.**

ANNEXURE VI

SELF-DECLARATION OF NO BLACKLISTING

Tender No: OTCN/01/PDP/2024-25

Date:

To,

**The Dy.General Manager (Electrical),
EHT (O&M) Division, OPTCL,
Paradeep.**

Sub: Submission of Self-Declaration of No Blacklisting

Ref: Tender Call Notice No: OTCN/01/PDP/24-25.

Sir,

1. I/We, the undersigned do hereby declare that, I/We have never failed to perform satisfactorily in any work of OPTCL/ Govt. Of Odisha /Central Govt./ in any Govt. funded Project during last three financial years (and the current financial year) and / or I/We **do not have any litigation with OPTCL** and we do not stand currently debarred/blacklisted by any of the Electricity Transmission Utility / Generation Utility /OPTCL / Govt. of Odisha/ Central Govt. of India.

2. Further, I/We, the undersigned do hereby declare that, I/We have not been declared as Insolvent or referred to National Company Law Tribunal (NCLT) under the Insolvency and Bankruptcy Code (IBC), 2016.

3. In the event, any information is found out contrary to the above either during the finalisation of the tender or during the execution of the contract, My/Our bid / contract shall be liable for rejection / cancellation / termination without any notice with forfeiture of EMD/CPBG at the sole discretion of OPTCL.

Yours faithfully,

Place-

Date-

Signature of the bidder

With seal

Note: The bidder shall also disclose, if he was debarred/black listed by any utility in the past and if the debar/blacklisting order was subsequently withdrawn by the utility suo-moto or set aside by any court order.

(This form shall be duly filled-up, signed by the bidder)

ANNEXURE VII
LITIGATION HISTORY

Year	Award for or against bidder	Name of client, cause of litigation and matter in dispute	Disputed amount (current value in Rs.)

Place: -

Date:

Signature of Tenderer:

Name, Designation, Seal

ANNEXURE VIII

EXPERIENCE OF SIMILAR NATURE OF WORKS

Name of Bidder:

Bidders should provide information towards the all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which a full completion certificate is yet to be issued, for execution of similar nature of works.

Sl. No	Name of Project	Name of Client with address and contact numbers	Date of Award of Order	Delivery Period	Date of Delivery	Description similar nature of procurement taken up	Total cost of work (in INR)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Date:

Signature of authorized person

Place:

Name:

Seal:

***Note:** Please furnish the Work order /Contract copies of the works executed in support of the information mentioned above.

ANNEXURE - IX
ANTI COLLUSION CERTIFICATE

(To be submitted on letter head of the bidding company with sign and stamp and along with technical bid)

1. We certify that this proposal is made in good faith and that we have not fixed or adjusted the amount of the Proposal by, or under, or in accordance with any agreement or arrangement with any other person. We also certify that we have not and we undertake that we will not, before the award of any contract for the work.

(i) (a) Communicate to any person other than the Authority / or person duly authorized by it in that behalf the amount or approximate amount of the Proposal, or Proposed Proposal, except where the disclosure, in confidence, of the approximate amount of the proposal was necessary to obtain premium quotations required for the preparation of the proposal.

(b) Enter into any agreement or arrangement with any person that they shall refrain from bidding, they shall withdraw any Proposal once offered or vary the amount of any Proposal to be submitted.

(ii) Pay, give or offer to pay or give any sum of money or other valuable considerations directly or indirectly to any person for doing or having done or having caused to be done in relation to any other proposal or proposed proposal for the work, any act or thing of the sort described at (i) (a) or (i) (b) above.

2. We further certify that the principles described in paragraphs (i) and (ii) above have been or will be, made on the basis of compliance with the above, principles by all parties.

3. We are not part of any “Anti-competitive practice” such as collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of the Competition Act, 2002 as amended from time to time, between two or more bidders, with or without the knowledge of the OPTCL (Authority), that may impair the transparency, fairness and the progress of the manpower service process or to establish bid prices at artificial, non-competitive levels.

4. In this certificate, the word “person” includes any persons or anybody or association, corporation, “any agreement or arrangement” includes any transaction, formal or informal and whether legally binding or not, and “the work” means the work in relation to which this proposal is made.

Dated this Days of2024

Name of the Bidder.....

Signature of the designated person.....

Name of the designated person.....

ANNEXURE - X

**PROFORMA FOR COMPOSITE BANK GUARANTEE FOR SECURITY
DEPOSIT AND PERFORMANCE GUARANTEE**

This Guarantee Bond is executed this _____ Day of _____ 2024
by us, the _____ Bank at
_____ P.O. _____ P.S.
_____ Dist _____ State _____.

3. WHEREAS the ORISSA POWER TRANSMISSION CORPORATION LTD a body corporate constitute under the Electricity (Supply) Act.1948 (hereinafter called “the OPTCL”) has placed orders No. _____ date _____ (hereinafter called “The Agreement “) on M/S _____ (hereinafter called “The Contractor”) for supply of materials .AND WHEREAS the OPTCL has agreed (1) to exempt the Contractor from making payment of Security, and (2) to exempt from performance guarantee on furnishing by the Contractor to the OPTCL, a Composite Bank Guarantee of the value of Rupees..... only.

NOW THEREFORE in consideration of the OPTCL having agreed (1) to exempt the Contractor from making payment of Security and (2) to exempt from furnishing performance guarantee in terms of the said agreement as aforesaid, we the _____ (Bank) (hereinafter referred to as ‘the Bank’) do hereby undertake to pay the OPTCL an amount not exceeding Rs. _____ (Rupees _____) against any loss/ damage caused to or suffered by or would be caused to or suffered by the OPTCL by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said agreement.

17. We (the _____ Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on demand from the OPTCL stating that the amount claimed is due by way of loss or damage caused to or suffered by the OPTCL by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said agreement or by reason of the Contractor’s failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due any payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees _____).

18. We the _____ (Bank) also undertake to pay to the OPTCL any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding institute/pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us this under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

19. We, (_____ Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to do so enforceable till all the dues of the OPTCL under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Chairman Cum Managing Director, ORISSA

POWER TRANSMISSION CORPORATION LTD. Certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharge this Guarantee.

Unless a demand or claim under this guarantee is made on us in writing on or before the (Date _____) we shall be discharged from all liability under this guarantee thereafter.

20. We, (_____Bank) further agree that the OPTCL shall have the fullest liberty without our consent and without affecting in any manner or obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) and we shall not be relieved from our liability by reason of any such variations or extension being granted to the said Contractor(s) or for any such variations or the OPTCL or any indulgence by the OPTCL to the Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but this provisions have effect of so relieving us.
21. This guarantee will not be discharged due to the change in the name, style and constitution of the Bank and Contractor(s).
22. We, (_____Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the OPTCL in writing.
Date at _____the _____Day of _____Two thousand_____.
8. This Bank Guarantee shall remain in force up todated theday of.....2024

For _____

(Indicate the name of the Bank)

Witness: (with signature, names and address)

- 1.
- 2.