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BID INVITATION

Ref:.....

Dated 22.1.2007

**Subject: Request for an offer for survey and preparation of report for
Package-1: Evacuation System for North Karanpura.
Package-2: Talcher Augmentation System.**

Dear Sir,

Ministry of Power has initiated a scheme for development of Large Power Transmission Projects in India. The objective is to develop large capacity transmission system in India and attract potential investors including private participants for developing such projects. To do this, a shell company called REC Transmission Projects Ltd. has been formed as subsidiary of Rural Electrification Corporation Ltd. (herein after called "Owner").

You are invited to submit technical and financial proposals in respect of the above mentioned packages (Package-1 and Package-2).

The bidder has the option to submit the proposal for either one package (Package-1 or Package-2) or both the packages (Package-1 and Package-2). In case proposal is submitted for both the packages, the proposal shall be submitted separately for both the packages (Package-1 and Package-2).

While submitting the offer, please submit the details of similar type of work undertaken in the past.

- 1.0 The following documents are enclosed for your quotation purposes:
 1. Bid Proposal Sheets (Volume- I)
 2. Conditions of Contract (Volume-II)
 3. Technical specification for Survey and Preparation of Report for "Evacuation System for North Karanpura" and "Talcher Augmentation System" (Volume-III)
- 2.0 All the documents mentioned above, including this letter to you will form the tender documents. Each of the above document and also other documents to be submitted by you as per this tender's requirement are to be submitted duly stamped & signed on each page by your accredited representative as a token of your acceptance. This shall be your bid. The bid is to be submitted in sealed envelope with superscription for example, the name of the package, due date & time, bidders name & address.
- 2.1 **The last date and time for submission of bids: 19-03-2007 at 11.00 Hrs.** i.e., with in the aforesaid date and time your bid (quotation) must reach our office at Core – 4, SCOPE Complex, Lodhi Road, **New Delhi – 110 003**. Bids received late shall not be considered. OWNER will not accept any liability if the bid is received late due to postal delay and/or due to any other reason whatsoever. OWNER will also not accept any liability if bids and associated documents are not received or received in parts.

- 2.2 **The “Technical” and “Financial” proposals must be submitted in Two separate sealed envelopes with covering letters. The envelopes should be clearly marked with Technical/Financial proposal. Both the sealed envelopes should again be placed in a sealed cover.**
- 2.3 The Technical Bid shall be opened on **19-03-2007** at **11.30** Hrs. The financial bid shall be opened on **26-03-2007** at **15.00** Hrs. But this may be changed to suit the convenience of OWNER.
- 2.4 It may be noted that the selected bidder shall not be considered later on for selection as Transmission Service Provider.
- 3.0 Contract Performance Guarantee (CPG):** In the event of an award, the successful bidder (consultant), within fifteen days of receipt of Letter of Award from OWNER, will be required to arrange submission of CPG in the form of a Bank Guarantee (BG) equivalent to Ten (10) Percent of the contract consideration. The CPG/BG should be as per Performa (will be given to the successful bidder) and should be kept valid upto nine months form the date of OWNER’s acceptance of (Bankable) Report.
- 4.0 **Basis of price offer:** The price offer shall be for the studies as per Annexure I to Schedule I of Bid Proposal Sheet and shall remain firm throughout the period of contract. Quoted price will be on lump sum basis inclusive of all taxes and duties, all travel, stay, out of pocket expenses, cost of producing documents etc. and OWNER will not be required to pay and/or reimburse anything over and above the price quoted. OWNER reserves the right to ask the bidder to justify and establish price/rate reasonableness. In the event of an award of contract, Income tax at source will be deducted by OWNER as per law and Tax Deduction at Source certificate shall be issued to the consultant by OWNER.
- 5.0 **Time Schedule/Completion period:** The work shall be completed as per the schedule given in the Technical Specification (Volume-III).
- 6.0 **Terms of Payment:**
- 6.1 An initial advance of Ten (10) Percent) of the total contract value will be paid after signing of the contract and on submission of a bank guarantee of equivalent amount.
- 6.2 Forty (40) Percent of the contract value shall be paid after submission and acceptance of Draft Project Report.
- 6.3 Twenty (20) Percent of contract value shall be paid after submission & acceptance of the Final Report.
- 6.4 Thirty (30) Percent of contract value shall be paid after completion of the assignment as detailed in the Technical Specification (Volume-III) to the satisfaction of the Owner.
- 7.0 **Basis of Evaluation:** The bids will be evaluated on the basis of technical and commercial terms and conditions specified and based on the criteria (as per **Annexure I** to Bid invitation) and total price quoted inclusive of taxes/ duty. **If a**

bidder takes any technical and/or commercial deviation, its bid shall be treated as non-responsive and shall be rejected.

THE BIDDERS ARE REQUESTED TO SUBMIT THE DETAILS OF PAST EXPERIENCE AND MANPOWER TO BE DEPLOYED FOR THIS ASSIGNMENT AS PER ANNEXURE I & II OF SCHEDULE 2 OF BID PROPOSAL SHEETS. THIS INFORMATION, IF NOT PROVIDED IN THE DESIRED FORMAT AND PROVIDED ELSEWHERE IN THE BID, SHALL NOT BE CONSIDERED.

- 8.0 **Signing of Formal Contract Agreement** - In the event of an award, the successful bidder shall be required to enter in to a Contract Agreement with the OWNER within approximately Seven (7) days from the date of the Letter of Award (LOA) or within such extended time as may be granted by the Owner. Owner shall provide the Performa of this Contract Agreement.
- 9.0 **Validity of Bid:** Please keep your bid /quotation valid up to Sixty (60) days for our acceptance.
- 10.0 Bid Guarantee for an amount of INR 3,00,000 (Indian Rupees Three Lakh Only) for Package 1 and INR 2,00,000 (Indian Rupees Two Lakh Only) for Package 2 shall accompany each bid as per clause No. 5.0 of Conditions of Contract.
- 11.0 The consultant shall also obtain all necessary clearances from concerned authorities as may be required . Any statutory/license fee required to be paid to State/Central Government or any Government body for obtaining clearances shall be paid by REC Transmission Projects Co. Ltd.

12.0 Deliverables:

- 12.1 The consultant will submit progress report for all the works/ studies/ survey every week as per the format mutually agreed upon.
- 12.2 The consultant will submit three (3) draft copies of the report in English language.
- 12.3 The consultant will submit ten (10) copies of final report in English language.

Note: Final report, if required to be submitted in regional language for clearances or any other purposes, shall also be the responsibility of the consultant.

- 12.4 Two (2) soft copies (CD) shall also be submitted for the Report along with drawings.
- 12.5 All raw data for all the studies/ reports/ surveys shall also be submitted.
- 12.6 All reports shall be submitted in A4 size sheets, properly bound and printed using good quality paper & material.

Yours faithfully,

(Rama Raman)
DIRECTOR

REC Transmission Projects Company Ltd.

Encl: as above

Annexure I
To Bid Invitation

A Criteria, sub- criteria and point system for the evaluation of the Technical Score (St):

Sr.no.	Particulars	Maximum Marks
1	Relevant past experience	30
2	Adequacy of the proposed methodology and work plan in responding to the Terms of Reference	20
3	Qualification and competence of key personnel for this assignment	50
	Total	100

A minimum Technical Score (St) of 60 is required for qualification.

B The formula for evaluating the Financial Score (Sf):

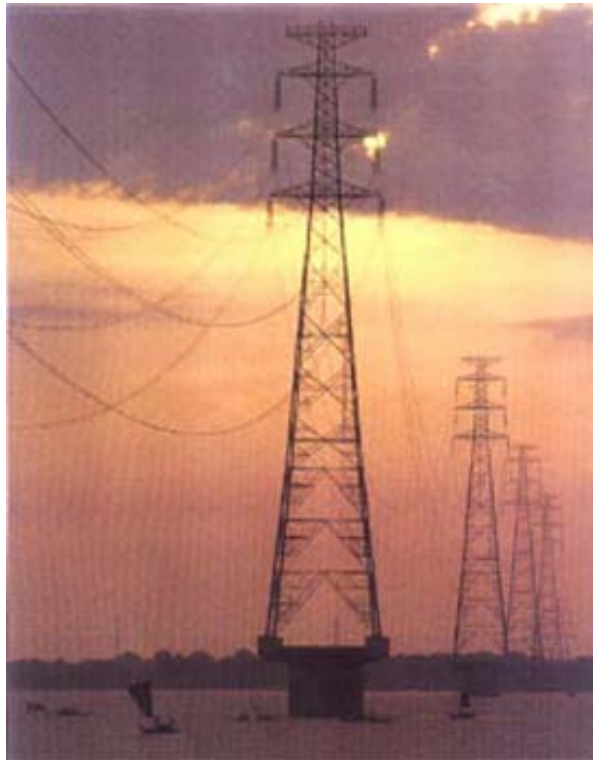
$$\mathbf{Sf = 100 \times Fm/F}$$

Where Fm is the lowest quoted price and F is the quoted price of the proposal under consideration.

C Combined evaluation of Technical and Financial proposal:

$$\mathbf{Total\ Score = 0.7 \times St + 0.3 \times Sf}$$

REC TRANSMISSION PROJECTS COMPANY LIMITED
(A subsidiary of Rural Electrification Corporation Ltd.)



Volume - I

Bid Proposal Sheets for

Survey Using Modern Survey Techniques & preparation of
Report for

Package 1 - Evacuation System for

North-Karanpura

and

Package 2-Talcher Augmentation System

PROPOSAL AND LUMPSUM FEE

Bidder`s Proposal Ref. No. and Date

Person to be contacted

Designation

Telephone No.

FAX

To:

The Director,

REC Transmission Projects Company Ltd,

(a subsidiary of Rural Electrification Corporation Ltd.)

Core-4, SCOPE Complex,

Lodhi Road,

New Delhi – 110003.

(Kind Attn: Shri Rama Raman)

Dear Sir,

- 1.0 We hereby propose to provide the Consultancy Services for Survey and Preparation of Report for Evacuation System for North Karanpura and Talcher Augmentation system.
- 2.0 We have understood the instruction and the terms & conditions mentioned in the Bidding Documents furnished by you and have thoroughly examined the specifications/ scope of work laid down by you and are fully aware of nature of consultancy services required.
- 3.0 We declare that the following is lump sum fee in Indian Rupees on firm price basis for the services detailed in Bid Invitation

**Consultancy Fee on Lump sum basis inclusive of all taxes, duties and levies etc.
(Including Service tax/ Professional tax)**

Rs.....(Rs.....only.)

(Amount in Indian Rupees in Words and Figures)

The price break up for Preparation of Project Report and all other studies is mentioned at **Annexure I to Schedule I (Price Offer)**.

- 4.0 We declare that the above quoted lump sum fee is firm and shall remain valid for the entire period of the consultancy assignment. We further declare that the above quoted fee includes all taxes (including service tax), duties & levies etc. payable by us under this consultancy assignment.

- 5.0 We confirm that the prices and other terms and conditions of this proposal are valid for a period of 60 days from the date of opening of the offer. We hereby confirm that if any Service Tax, Income Tax, Surcharge or any other Corporate Tax is attracted under the law, we agree to pay the same to the concerned authorities.
- 6.0 We declare that the services will be rendered strictly in accordance with the specifications. We confirm our acceptance/compliance to the `Time Schedule` and `Terms of payment` clauses as stipulated in the bid documents. We confirm that Contract performance Guarantee for ten (10) % of the total consultancy fee in the form of bank guarantee shall be provided by us as per the prescribed format (to be provided to successful bidder) in case of placement of award.
- 7.0 Our offer shall remain valid for a period of 60 days from the scheduled date of opening of bids.
- 8.0 We understand that the client will award the contract to the successful consultant whose offer is substantially responsive and to be the lowest evaluated offer.
- 9.0 We hereby declare that only the company, persons or firms interested in this proposal as principal or principals are named herein and that no other company, person or firm other than one mentioned herein have any interest in this proposal or in the contract to be entered into, if we are awarded this contract.
- 10.0 In terms of Clause 8.5 of Conditions of Contract, we are enclosing herewith Power of Attorney in the name of the person who has signed this offer on behalf of the firm.

Date:

Signature

Place:

Name

Designation

Common Seal

Price Offer

Schedule of Price

S. No.	Description	Price (Rs.)	Remarks
	For Package 1		
1	Survey and Preparation of Project Report for Evacuation System for North Karanpura.		
2	Taxes / Duty (if any)		
	Total Rs.		
	For Package 2		
1	Survey and Preparation of Project Report for Talcher Augmentation System.		
2	Taxes / Duty (if any)		
	Total Rs.		

Lump Sum Quoted Price For packages 1 & 2 = Rs._____ (Rs. in words_____)

Discount (if any) for being considered for both the packages = Rs. ____ (Rs. in words____)

Final Lumpsum quoted price for packages 1 & 2 = Rs._____ (Rs. in words_____)

ADEQUACY WORK PLAN

Bidder`s Name & Address

To :
The Director,
REC Transmission Projects Company Ltd,
(a subsidiary of Rural Electrification Corporation Ltd.)
Core-4, SCOPE Complex,
Lodhi Road,
New Delhi – 110003.

(Kind Attn: Shri Rama Raman)

Dear Sir,

We hereby enclose a brief write up on the proposed methodology to be adopted for Consultancy Services Package for Survey and Preparation of Project Report for Evacuation System for North Karanpura and Talcher Augmentation System as per the following Annexure to this schedule:

- Schedule 2A Approach and Technical Method
- Schedule 2B Monitoring equipment, if any.
- Schedule 2C Level and effort of key and other personnel
- Schedule 2D Any other relevant information.

The following details are to be submitted along with the offer:

1. Organisational set up of the Company/Institute
2. Project Team proposed to be deployed (should be on permanent basis with the company) by name & experience as per **Annexure II to Schedule 2**
3. The bio-data and experience of the key personnel proposed to be deployed.
4. Assignments on hand
5. Past assignment completed with successful completion certificate should be submitted as per **Annexure I to Schedule 2**
6. Past three years turnover details.

Note : Details not provided as per format shall be considered as non responsive and shall not be considered for bid evaluation.

Date:

Signature

Place:

Name

Designation

Common Seal

The bidders shall submit the following information:

Sr. No	Particulars	Details
A	Relevant past Experience	
A1.1	No. of Feasibility Report/Project Reports Completed for Transmission System.	
B	Proposed methodology and work plan including deployment of resources	
C	Qualification and Experience of key personnel	As per Annexure II to Schedule 2

TEAM TO BE DEPLOYED (ON PERMANENT ROLL OF THE COMPANY)

S.No.	Name of the Person	Qualification	Experience		Job assigned in the team	Remarks
			No. of years	Area		

Bidder`s Name & Address

To :
The Director,
REC Transmission Projects Company Ltd,
(a subsidiary of Rural Electrification Corporation Ltd.)
Core-4, SCOPE Complex,
Lodhi Road,
New Delhi – 110003.

(Kind Attn: Shri Rama Raman)

Dear Sir,

We hereby declare that following equipment/instruments shall be used to carryout the scope of services as contained in the Technical specification and Bid Documents for Consultancy Services for Survey and Preparation of Project Report for Evacuation System for North Karanpura & Talcher Augmentation system as outlined in your tender documents. We also furnish the area wise deployment as well as the source of such equipment/instruments required to carryout this work.

Further, we confirm that the cost for purchase/installation or any other related cost for the equipment shall be entirely borne by us and is included in our lump sum consultancy fee. REC Transmission Projects Company Ltd. shall not have any liability in this regard.

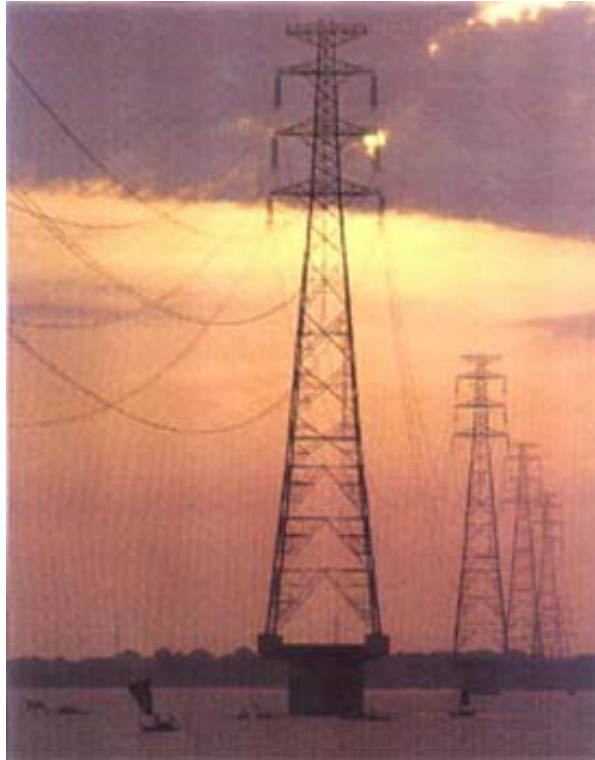
S. No.	Name and Purpose of Equipment/ Instrument	Source of availability of Equipment/ Instrument	Remarks
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Date:
Place:

Signature
Name
Designation

Common Seal

REC TRANSMISSION PROJECTS COMPANY LIMITED
(a subsidiary of Rural Electrification Corporation Ltd.)



Volume - II

Conditions of Contract for

Survey Using Modern Survey Techniques & preparation of
Report for

Package 1 - Evacuation System for

North-Karanpura

and

Package 2-Talcher Augmentation System

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1.0. DEFINITION OF TERMS

- 1.1 Unless defined otherwise, the following terms used in this document shall have the meanings.
- 1.2 “Owner” or “Client” or “Employer” shall mean REC Transmission Projects Company Ltd., New Delhi, India (a wholly owned subsidiary of Rural Electrification Corporation Ltd.) and shall include their legal representatives, successors and permitted assigns.
- 1.3 “Engineer” or “Engineer-in-Charge” or “E.I.C.” shall mean the officer appointed in writing by the owner to act as “Coordinator” from time to time on behalf of Owner in all matters pertaining to this Contract. “Engineer-in-charge” shall be authorized by the client for supervision, inspection, scrutiny and approval of some or all of the services rendered by the Consultant under the Contract.
- 1.4 “Specification” shall mean the Technical Specifications and the Conditions of Contract together with Bid Proposal Sheet forming a part of the bid documents and contract and such other schedules and drawings as may be mutually agreed upon.
- 1.5 “Notice of Award of Contract” / Letter of Award” shall mean the official intimation from the Owner notifying the successful bidder that its proposal has been accepted and that the bidder is required to sign the contract Agreement.
- 1.6 “Date of Contract” shall mean the date on which both the parties have signed the Contract Agreement or any other date mentioned in the Contract/Letter of Award, as the effective date of Contract, whichever is earlier.
- 1.7 A “week” shall mean a continuous period of seven (7) days.
- 1.8 “Indian Rupees” or “Rs.” shall mean the mean the currency of the Government of India.
- 1.9 The “Government” shall mean the “Government of India” or an authorized representative/agency/department of the “Government of India”.
- 1.10 The words imparting singular shall also include the plural and vice-versa where the context so requires.
- 1.11 “Final Report”/”Final Document” or “Report” will mean the final report or document prepared by the Consultant as per Owner’s Specification.
- 1.12 The “Site” shall mean and include the land and other places over or into or through which the Thermal Power Project is to be constructed and any adjacent land, path, street, river or a reservoir.
- 1.13 “Starting Date” shall mean the date from which the periods specified for various activities are measured and asset forth in the completion schedules. The starting

date for each schedule, unless otherwise agreed, shall be as indicated in the respective schedule.

- 1.14 “Month” shall mean calendar month. “Day or “Days” unless herein otherwise expressly defined shall mean calendar day or day of 24 hours each. Working days in a month shall be as defined by Consultant in its offer.
- 1.15 The title or heading shall not alter or affect the intent or scope of the clause or articles of the Documents
- 1.16 The Date of Completion of Contract-Unless otherwise terminated under the provisions of any other relevant clause of the document, Contract shall be deemed to have been completed after issuance of the certification from engineer-in-charge that there is no demand outstanding against the Consultant and all liabilities under the contract have been satisfactorily fulfilled by the Consultant.
- 1.17 The “Final Acceptance of Work” provided by the Consultant under the Scope will be given by Owner as hereinafter defined. Six (6) Months after successful completion of the Consultancy assignment and submission of all documents, reports etc. to REC Transmission Projects Co. Ltd. and acceptance of the reports by the concerned statutory Authorities, Government of India and upon certification by the Engineer – in – Charge.
- 1.18 Words imparting “Person” shall include firms, companies, corporations and association or bodies of individuals, whether incorporated or not.
- 1.19 “Consultant” or “Technical Specialist” or “Contractor” shall mean the bidder whose bid has been accepted by the Owner for the award of the work and shall include his legal representatives, successors and permitted assigns.
- 1.20 “Consultancy Assignment” or “Work” or “Study” or “Assessment” or “Services” shall mean the complete study as prescribed in the Specification / Terms of Reference.
- 1.21 “Contract” shall mean the Contract Agreement entered into between the Owner and the Consultant, together with the Contract documents referred to therein; they shall constitute the Contract and the term “Contract” shall in all such documents be construed accordingly.

2.0 VALIDITY

The proposal shall be on firm price basis and valid for acceptance for at least 60 days from the date of opening of the offers.

3.0 CURRENCY OF BID

All prices quoted in the Schedules of the Bid Proposal Sheets should be in Indian Rupees and all payments shall be made in Indian Rupees.

4.0 THE BID DOCUMENTS

- 4.1 This document is meant for exclusive purpose of submitting the offer by the bidder against the specification and shall not be transferred, reproduced or otherwise used for purposes other than for which it is specifically issued.
- 4.2 REC Transmission Projects Company Ltd. does not bind themselves to accept the lowest or any offer or to give reasons for their decision. The Corporation reserves the right to reject any or all offers without assigning any reason.

5.0 EARNEST MONEY DEPOSIT

- 5.1 Bid Guarantee for an amount of INR 3,00,000 (Indian Rupees Three Lakh Only) for Package 1 and INR 2,00,000 (Indian Rupees Two Lakh Only) for Package 2 shall accompany the bid in separate sealed envelope super scribed on the top as under:

“Bid Guarantee for Consultancy Services package for bid document no. due on.....at.....from.....
M/s.....

“Bid Guarantee offered shall be in one of the following alternative forms:

A crossed bank draft in favour of REC Transmission Projects Company Ltd. payable at New Delhi from any nationalized or scheduled bank;

- 5.2 The Bid Guarantee shall be made payable without any condition to the Owner and ‘On demand’.
- 5.3 In consideration of the Owner opening and considering the Bid for purpose of award, the Bidder shall keep his Bid valid for a period of 60 days from the date of opening of the Bid, during which period the Bidder agrees not to vary, alter or revoke his bid as a whole or in part. If the Bidder, however, fails to keep his bid valid for 60 days or varies it during the period, then the Owner shall be entitled to forfeit the Bid Guarantee amount without any notice or proof of damages etc.
- 5.4 The Bid Guarantee of the Successful bidder to whom a contract is awarded will be returned after the said bidder provides the Contract performance Guarantee.
- 5.5 If the successful Bidder fails to submit a Contract Performance Guarantee as specified in the Contract Document within 15(fifteen) calendar days after the date of Letter of Award of the Contract, then the Bid Guarantee amount will be forfeited by the Owner without any notice or proof of damages, etc.
- 5.6 The Bid Guarantee of all unsuccessful bidders except that of the successful Bidder will be returned within thirty (30) days after the Award of Contract.
- 5.7 Any Bid not accompanied by a Bid Guarantee in accordance with above said provisions shall be treated as non-responsive and shall be rejected.**

5.8 No interest will be payable by the owner on the above Bid Guarantee.

6.0 UNDERSTANDING AND CLARIFICATIONS ON DOCUMENTS AND SPECIFICATIONS

The bidder is required to carefully examine the specifications and documents and fully inform himself as to all the conditions and matters which may in any way affect the works or the cost thereof. If any bidder finds discrepancies or omissions in the specifications and documents or is in doubt as to the true meaning of any part, he shall seek clarification from owner at once but in no case later than seven (7) days prior to the deadline for submission of bids prescribed by the Owner. After receipt of such interpretations and clarifications, the bidder may submit his offer but within the time and date as specified. All such interpretations and clarifications shall form an integral part of the specifications and documents and accompany the consultant's proposal.

Verbal clarifications and information given by the owner or his employee (s) or his representatives(s) shall not in way be binding on the Owner.

7.0 DISCREPANCIES AND ADJUSTMENT OF ERRORS

7.1 The Bid documents are mutually explanatory of one another. If there are varying or conflicting provisions made in any one of the bid documents, REC Transmission Projects Co. Ltd. shall be deciding authority with regard to the intention of the document.

7.2 Any errors in description, quantity or rate in Schedules or any omission there from shall not vitiate the Contract or release the Consultant from the execution of the whole or any part of the works comprised there in according to drawings and specifications or from any of his obligations under the contract.

7.3 If on checking any difference is found between the rates given by the consultant in words and figures or in the total amount worked out by him in the Schedules in the proposal, the same shall be rectified in accordance with the following rules::

- a) In the event of discrepancy between description in words and figures quoted by bidder, the description in words shall prevail.
- b) In the event of an error occurring as a result of wrong extension of the unit rate and quantity, the unit rate shall be regarded, as firm and extension shall be amended on the basis of the rate.
- c) All errors in totaling in the amount column and in carrying forward totals shall be corrected.

7.4 The bidder should ensure that the prices furnished in various price schedules are consistent with each other. In case of any inconsistency in the prices furnished in the specified price schedules (to be identified in Bid Proposal sheets (BPS) for this purpose), the owner shall be entitled to consider the highest price for the purpose of evaluation on to award the contract at the lowest of the price in these schedules.

- 7.5 Prior to detailed evaluation, the Owner will determine whether each bid is for acceptable quality, is generally complete and is substantially responsive to the bidding documents. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions and specifications of the bidding documents without material deviation, objection, conditionality or reservation is one (i) that affects in any substantial way the scope, quality or performance of the contract; (ii) that limits in any substantial way, inconsistent with the bidding documents, the Owner's rights or the successful bidder's obligations under the contract; or (iii) whose rectification would unfairly affect the competitive position of other bidders who are presenting substantially responsive bids. The Owner's decision in respect of the determination of the responsiveness of a bid will be final and binding on all the bidders.
- 7.6 A bid determined as not substantially responsive will be rejected by the Owner and may not subsequently be made responsive by the bidder correction of the non-conformity.
- 7.7 The owner may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any bidder.

8.0 SINGATURE OF BIDS/OFFERS

- 8.1 The offer must contain the name, residence and place of business of the person or persons making the offer and must be duly signed and stamped on each page by the bidder with his usual signature.
- 8.2 Offer by a partnership firm must be furnished with full names of all partners and be signed with the partnership name, followed by the signature(s) and designations(s) of the authorized partner(s) or other authorized representative(s).
- 8.3 Offers by Corporation/Company must be signed with the legal name of the Corporation/Company by the President, Managing Director or by the Secretary or other person or persons authorized to furnish offer on behalf of such Corporation, Company in the matter.
- 8.4 An offer by a person who affixes to his signature the word `President`, `Managing Director` `Secretary` or other designation without disclosing his principal will be rejected.
- 8.5 The power of attorney in the name of the person signing on behalf of the Consultant/bidder shall be furnished along with the offer.
- 8.6 The Consultant's (Bidder's) name stated on the proposal shall be the exact legal name of the firm.
- 8.7 Erasures or other changes in the offer shall be over the initials of the person signing the bid.
- 8.8 Offers not conforming to the above requirements of signing may be disqualified.

9.0 PROGRESSIVE PAYMENT

All payments against the services shall be paid against production of invoice in quadruplicate by the Consultant. The payment of such fees shall be released as per clause No.6(Terms of Payment of Bid Invitation), on stage-wise completion of the services including submission of the Deliverables and subject to acceptance, approval and certification by the Engineer-in Charge.

9.1 PROCEDURE OF PAYMENT

All the invoices of payment shall be supported by necessary documents and submitted in quadruplicate for the certification of Engineer-in-Charge of which he will require a maximum time of seven (7) days before the same are submitted for processing the payment within fifteen (15) days of certification of the Engineer-in-Charge of the amount payable for the services. In the event, there is any query in respect of any item of such invoice requiring clarification, the Engineer-in-Charge shall notify the same within 15 days of receipt of such invoice by the Owner that such a query has arisen and both the parties shall endeavor to reach an agreement within a period of thirty (30) days thereafter. If no mutual agreement can be reached within a period of forty five (45) days after receipt of the invoices by the Engineer-in-Charge, the Owner shall make payment against the balance of invoice (original amount less the amount in question) to the consultant within thirty (30) days thereafter i.e. within sixty (60) days from the date of receipt of invoice by the Engineer-in-Charge. The invoice for the balance amount under question shall be separately submitted for future consideration of the Owner.

10.0 LIQUIDATED DEMAGES FOR DELAY IN COMPLETION

For any delays attributable to the Consultant, beyond the Scheduled dates/period of completion of various activities as per the agreed work schedule, the Consultant shall pay to REC Transmission Projects Co. Ltd., liquidated damages and not as penalty, an amount worked out at the rate of 1% (one per cent) of total contract value per week or part thereof. However, the total liability of the consultant under this clause shall not exceed 10 % (Ten Percent) of the Contract Values as awarded.

11.0 LIABILITY OF THE CONSULTANT

Should any defect or inadequacy appear in the study carried out and report submitted by the Consultant prior to the date of final acceptance of the work by the Owner, the Consultant shall perform at its own initiative and free of any cost to REC Transmission Projects Co. Ltd., all such services as shall be necessary to remedy the said defect or inadequacy.

The Consultant shall be further liable for the consequence of errors and omissions arising from the gross negligence on its part or on the part of its employees or associates or experts to the extent of the total contract value of this contract.

12.0 TAXES, DUTIES AND INSURANCE

All taxes (including service tax, professional tax, etc. as applicable), duties, levies, insurance charges, license fees, etc. arising out of the contract shall be payable directly by Consultant and shall be included in the lump sum bid price for the entire scope of work. REC Transmission Projects Co. Ltd. will not bear any expenditure, whatsoever on this account. As regards income tax, surcharge on income tax and other corporate taxes, the Consultant shall be responsible for such payments to the concerned authorities. However, the Owner is entitled to deduct TDS as per the Government policies/tax rules and regulations.

The Consultant shall be liable to take/maintain all necessary insurance at its own cost.

13.0 PATENT

13.1 The Consultant shall hold harmless and indemnify the client from and against loss, damage and expenses arising from any claim for infringement of patent, copy right, design and other such rights in existence or to be granted on an application published prior to the completion of this Consultancy with respect to or arising out of the sue or supply of design, or any work in accordance with the designs, drawings or specifications furnished, approved or recommended by the consultant.

13.2 The Consultant shall promptly notify the client in writing if the Consultant has or has acquired knowledge of any patent under which a claim or suit for infringement could reasonably be brought because of the use by the client of any information, recommendation or specifications, services rendered by the Consultant.

13.3 The Consultant, in such case, shall forthwith at its own cost make and furnish to the client alternative designs, drawings, specifications or recommendations to avoid the same and without putting the Client to additional cost.

14.0 SETTLEMENT OF DISPUTE

14.1 Except as otherwise specifically provided in the Contract all disputes concerning questions of fact arising under the Contract shall be decided by the Engineer subject to a written appeal by the Consultant to the Engineer, whose decision shall be final to the parties hereto.

14.2 Any disputes or difference including those considered as such by only one of the parties arising out of or in connection with the contract shall be to the extent possible settled amicably between the parties.

14.3 If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration as provided in **ARBITRATION** clause.

15.0 ARBITRATION

15.1 In the event of any question, dispute or difference arising out of or in connection with this consultancy work, whether during the progress of the work or after its completion, abandonment or breach of contract, the same shall be referred for arbitration, for which purpose the Client and the Consultant shall nominate one Arbitrator each. These Arbitrators shall appoint an Umpire not later than one month from the latest date of their respective appointment. The arbitration shall be conducted in accordance with the provisions of Indian Arbitration and Conciliation Act 1996, the rules framed hereunder and any statutory modifications thereof. The costs of reference and arbitration award shall be payable by the parties to the extent and in a manner as may be determined by the Arbitrators or the Umpire.

In case the consultant is an Indian Public Sector Enterprise/Govt.Deptt. (But not a State Govt. Undertaking or Joint Sector Undertaking which is not a subsidiary of Central Govt. Undertaking), the dispute arising between the Owner and the Consultant shall be referred for resolution to a Permanent Arbitration Machinery (PAM) of the Department of Public Enterprises, Govt. of India.

15.2 Notwithstanding the existence of any dispute or difference and/or reference for the arbitration, the Consultant shall proceed with and continue without hindrance with the performance of the work under the contract with due diligence and expedition in a professional manner and the payment due to the consultant shall not be withheld by the Client on account of such difference or arbitration proceedings unless such payment is subject matter of the arbitration.

15.3 The arbitrators may from time to time with consent of the parties enlarge the time, for making and publishing the award. The venue of arbitration shall be the registered office of REC Transmission Projects Co. Ltd.

16.0 Termination of Default:

16.1 The Owner may without prejudice to any other remedy for breach of contract, by written notice of default sent to the consultant, terminate the contract in whole or in part.

- a. If the consultant fails to deliver any or all of the services within time period(s) specified in the contract or any extension thereof granted by the owner in writing.
- b. If the consultant fails to perform any other obligation(s) under the contract or
- c. If the consultant, in either of the above circumstances, does not cure its failure within a period of thirty (30) days after receipt of the default notice from the owner.

16.2 In the event the Owner terminates in whole or in part, pursuant to Para 16.1.0, the owner may get the services done, upon such terms and in such manner as it deems appropriate, similar to those not rendered, and the consultant shall be liable to the Owner for any excess costs for such similar services. However, the consultant shall continue performance of the contract to the extent not terminated.

17.0 TERMINATION FOR CONVENIENCE

17.1 The Owner, may by written notice sent to the consultant, terminate the contact, in whole or in part, at any time for its convenience, The notice of termination shall specify that termination is for owner's convenience, the extent to which performance of work under the contract is terminated and the date upon which such termination become effective.

17.2 The studies/services that are completed and ready for final reporting within thirty (30) days after the consultant's receipt of notice of termination shall be accepted by the Owner at contract terms and prices. For the remaining services, the Owner may elect,

a) To have any portion completed and delivered at the contract terms and prices and/or.

b) To cancel the remainder and pay to the Consultant an agreed amount for partially completed services.

18.0 TERMINATION FOR INSOLVENCY

18.1 The owner may at any time terminate the Contract by giving written notice to the Consultant, without compensation to the Consultant, if the Consultant becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Owner.

18.2 Upon termination of the contract at any time for whatever reason by REC Transmission Projects Co. Ltd. compensation shall be payable to the Consultant for all services performed satisfactorily until the date of termination. In addition the Consultant will be paid for such of those items of work, which have been partially completed as per conditions stipulated under relevant clause. The Consultant shall provide available documentary evidences to this effect, acceptable to REC Transmission Projects Co. Ltd.

18.3 Following issuance by REC Transmission Projects Co. Ltd. of a notice of termination and prior to the effective date of such termination, the Consultant shall:

a. Terminate performance of work in progress under the contract on the date and to the extent specified in the notice of termination.

b. Incur no further costs for services except as necessary to complete performance of any portion of the work under the contract not terminated by the said notice.

c. Terminate all outstanding orders, service contracts and sub-contracts to the extent that they relate to the performance of work terminated by the notice;

d. Transfer title and deliver to REC Transmission Projects Co. Ltd. in the manner, at the times and to the extent, if any, as directed by REC Transmission Projects Co. Ltd., all completed or partially completed reports,

designs, data, maps, plans, photographs, specifications, and commutations, etc. which, if the contract had been continued, would have been required to be furnished to REC Transmission Projects Co. Ltd.

The termination of the contract shall not relieve the Consultant of its duties and liabilities as per the contract for the portion of the services performed prior to the effective date of termination.

19.0 SIGNING OF AGREEMENT

The Consultant will prepare a draft contract agreement for the consultancy assignment, as per the format to be provided by the owner, of its review and approval within ten (10) days of issue of Letter of Award. Upon approval of the same, the authorized signatory of Consultant will be required to sign the contract agreement. The Consultant will make and submit at no extra cost to REC Transmission Projects Co. Ltd. five (5) copies of such agreement to immediately after signing of it by both parties.

20.0 GOVERNING LAWS

This Consultancy work shall be governed by the Indian Laws for the time being in force and the Delhi Courts alone shall have the jurisdiction.

21.0 SUSPENSION OF THE OBLIGATION

21.1 The obligations stipulated in this specification can only be suspended in the case of any particular item or work, in the event of Force Majeure as defined in clause 20.0.0 or as the result of an agreement between the parties.

21.2 In the event of Force Majeure, neither of the parties may be considered in default of its obligations under the terms of the Specifications.

22.0 FORCE MAJEURE

22.1 Force Majeure is hereby defined as any cause which is beyond the control of the Consultant or REC Transmission Projects Co. Ltd. as the case may be, which they could not have foreseen and which substantially affect the performance of contract such as:

- a) Natural Phenomena including but not limited to floods, draughts, earthquakes and epidemics.
- b) Acts of any government, domestic or foreign, including but not limited to war, declared or undeclared, priorities, embargoes, etc.

Provided either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such cause.

23.0 HANDLING OF DOCUMENTS

- 23.1 All plans, design calculations, studies, data, maps, drawings and specifications prepared by the consultant in connection with the services to be provided by the Consultant shall be the property of the Owner, As when required or upon termination of the Contract, the aforesaid documents, prepared specifically for this Study (including originals), shall be handed over to the Owner before final acceptance or thereafter.
- 23.2 The consultant shall take all necessary steps to ensure confidential handling of all matters pertaining to plans, designs, drawings, specifications, methods and any other information developed or acquired by him from REC Transmission Projects Co. Ltd. under terms of the Contract or in performance thereof.
- 23.3 The consultant shall not prepare articles or photographs for publication or speeches or presentations about the work and /or site and/or plant, contracts and installation in which has an interest without prior written consent of.
- 23.4 The consultant shall take necessary steps to ensure that all persons employed on any work in connection with this contract have noticed that the Indian Official Secrets Act, 1923 (XIX of 1923) applies to them and shall continue to apply even after the execution of such work(s) under the contract.

24.0 ABANDONMENT OF WORK

- 24.1 If any work included in the scope of specification to be done by the consultant is abandoned or suspended for any cause or reasons, which cannot be attributed to the consultant, payment, shall be made on a pro-rata basis for the work actually done and as decided by the owner.

25.0 SUB-CONTRACT

The consultant cannot assign or sub-contract any of this work without the prior written consent of REC Transmission Projects Co. Ltd.

26.0 LIMITATION OF LIABILITES

- 26.1 REC Transmission Projects Co. Ltd. shall in no way be responsible for any liabilities arising out of the Consultant's contractual obligation with the Consultant's personnel, experts, engineers, Sub-contractors, licensors, collaborators, vendors, or subsidiaries.
- 26.2 The Consultant and REC Transmission Projects Co. Ltd. both agree that each shall assume full risk of damages of injury to its own properties, employees and representatives caused by any act or omission to act by their respective employees or representatives, during the performance.

27.0 CHANGES/ADDITIONS/DELETIONS

- 27.1 REC Transmission Projects Co. Ltd. shall have the right to request in writing additions or changes in the scope of services to be performed by the Consultant. If in the Consultant's opinion, any such additions or changes affect the completion schedule or the fee, REC Transmission Projects Co. Ltd. will be advised accordingly and the same shall be mutually settled. However, the consultant shall continue to carry out the work pending till final settlement if any.
- 27.2 REC Transmission Projects Co. Ltd. reserves the right to delete any item/s or part thereof from the scope of services to be performed by the Consultant. For such purposes REC Transmission Projects Co. Ltd. shall give to the Consultant a notice in writing on receipt of which the Consultant shall take necessary steps as may be directed by REC Transmission Projects Co. Ltd. and shall stop incurring any expenditure and performing services in connection with the item/s of work so deleted.
- 27.3 The corresponding fee for the deleted item(s) of work will be arrive based on the fee identified in the Contract and shall be deducted from the fee payable to the Consultant under the Contract. The Consultant, however, shall be entitled for the compensation of the amount of work and services already performed in connection with item(s) deleted from the scope, at a mutually acceptable fee.

28.0 NO WAIVERS

If Owner, in any instance, does not insist upon strict performance of any of the terms of the assignment, it shall not be construed as a waiver or relinquishment in the future till the assignment is in force and shall not relieve Consultant of any of its responsibilities under the assignment.

29.0 INSTRUCTIONS AND NOTICES

All notices to be given on behalf of REC Transmission Projects Co. Ltd. and all other actions to be taken on its behalf may be given or taken by the Engineer-in-Charge or any officer for the time being entrusted with the functions, duties and powers of the Engineer-in-Charge.

All instructions, notices and communications, etc., shall be given in writing and if sent by registered / speed post to the last known place of business of the consultant, shall be deemed to have been served on the dates when in the ordinary course of post these would have been delivered to him.

30.0 BANKRUPTCY

If the Consultant shall become bankrupt or have a receiving order made against him or compound with his creditors or being a corporation commence to be wound up, not being a voluntary winding up for the purpose only amalgamation or reconstruction, or carry on their business under a receiver for the benefit of their creditors or any of them, REC Transmission Projects Co. Ltd. shall be at liberty:

1. To terminate the assignment forthwith without any notice in writing to the Consultant or to the liquidator or receiver or to any person in whom the consultant may become vested.
2. To give such liquidator receiver or other person the option of carrying out the consultancy assignment subject to their providing a guarantee for the due and faithful performance of the assignment up to an amount to be determined by REC Transmission Projects Co. Ltd.

31.0 PROGRESS REPORT

- 31.1 The Consultant shall prepare and submit to REC Transmission Projects Co. Ltd. weekly progress report showing the progress and status of the `Works being performed by him including such materials as charts, networks and photograph (if any) as per the directives of REC Transmission Projects Co. Ltd. Draft formats of progress reports shall be enclosed by the Consultant with the offer.
- 31.2 It is understood that submission of such reports and reviews thereof by REC Transmission Projects Co. Ltd. shall not be deemed to absolve the Consultant of his responsibility of timely completion of the Assignment as per the time schedule indicated herein.

32.0 METHODOLOGY OF EXECUTION OF ASSIGNMENT

- 32.1 Consultant shall clearly bring out in their bid their organization chart and the methodology they want to follow of successful execution of the assignment. Consultant along with the organization chart shall indicate the names of key persons proposed to be deployed for each activity of the project and their bio data. They shall also indicate separately the works they intent to carryout in their home office and in their office in India and estimated Man days. Consultant shall also bring out in his bid number of visits to site of the key personnel they envisage under the assignment.
- 32.2 Regular review meetings will be held one in two (2) month in REC Transmission Projects Co. Ltd. Office and progress of work will be reviewed. The engineering co-ordination and consultant co-ordination procedure will be discussed and decided separately during the pre award stage.

33.0 CORRESPONDENCE AND CONTRACT COORDINATION ROCEDURE

- 33.1 All correspondence during the pre-award stage and during execution of the contract shall be made as per following procedure:-
- 33.2 On all technical matters pertaining to execution of the contract as per specification in the consultant shall directly interact with the Engineer-in-Charge.
- 33.3 All correspondence from the Owner to the Consultant shall be made with the full time Coordinator to be identified by the consultant and agreed by Owner.

34.0 INSPECTION OF SITE BY CONSULTANT

The Consultant shall inspect and examine the site and its surroundings and shall satisfy himself as to the form and nature of the site, the quantities and nature of work and the equipment / materials necessary information as to risks, contingencies, and other circumstances, which may influence or affect his tender, before bidding.

35.0 MANPOWER DEPLOYMENT

The Consultant shall deploy task force of well qualified and experienced engineering / science executive and draftsmen for this work. The manpower proposed to be deployed for this task shall be guaranteed by the Consultant in his offer both discipline-wise and category wise (for Engineers / Scientists and draftsmen) required for completion of service included under the scope of the specification. The Consultant shall depute a senior level executive to act as fulltime overall coordinator and focal point for all interactions with REC Transmission Projects Co. Ltd. throughout the entire period of consultancy assignment. The bio-data of the Engineering / Scientific personnel proposed to be included in the Task Force Should be enclosed with the offer. The task force so proposed is subject to the approval of the Owner. The owner may ask for suitable substitution of Engineers/Scientists in place of the proposed ones, if it so desires.

36.0 LIST OF EQUIPMENT / INSTRUMENTS

The Bidder shall provide a schedule of instruments / equipment available with it and/or with its collaborators (s)/ laboratories, which are intended to be used for each area of study separately. Further, the Bidder shall indicate in Schedule-4 the list of equipment proposed to be deployed for the study.

REC Transmission Projects Co. Ltd. shall not make any additional payment for any type of equipment / accessories required by the consultant for this package or for any other purpose.

37.0 CO-ORDINATION PROCEDURE

The Consultant shall propose in its offer the detailed co-ordination procedure with the owner for performing the services. The system to be adopted shall provide control and continuity of all functions. Owner's participation in the major decisions shall be essential to the extent desired by the owner. The coordination procedure and schedules of coordination review meeting between the Owner and the Consultant shall be mutually discussed and finalized before award of the contract.

38.0 COLLABORATION

The Consultant will be required to furnish the details its collaboration arrangement with various laboratories, institutions and other organizations along with consent

letters from the collaborators categorically agreeing to carry out the assignment till the completion of the study. Such consent letter must contain a declaration that the consent given by the collaborator is irrevocable till successful completion of the assignment. The proposal will also precisely outline the responsibilities and task to be undertaken by the collaborator (s). The consent letters from the collaborators shall be enclosed with the Bid.

39.0 ASSOCIATION OF REC TRANSMISSION PROJECTS CO. LTD.

REC Transmission Projects Co. Ltd. may depute its Engineer / Representative to be present during the entire course of studies or any part thereof. The EIC or his authorized representatives will have to be provided necessary information when asked for. He may further monitor the field and laboratory activities, and supervise the finalization of the documents. The engineers will also discuss results of studies and may suggest different cases to be studied. The Consultant shall provide all facilities for REC Transmission Projects Co. Ltd. Engineers / Representatives to have fruitful participation in the work. The Consultant will submit all study results draft sections / documents to the EIC for his approval and the final document will be prepared after incorporating changes / modifications / additions / alterations suggested by the EIC.

40.0 LANGUAGE

The offer must be submitted in English language, all documents, specifications, schedules, notices correspondences, operation & maintenance instructions, drawings or any other written material in connection with this work shall be in English language.

41.0 UNITS & INDIAN STANDARDS / CODES / REGULATIONS

Indian Standards, codes and regulations, wherever applicable, shall be adopted and adhered to by the Consultant. In case of such Indian standards / codes / regulations being not available in particular areas, applicable and accepted International standards shall be followed.

42.0 OWNER'S RIGHT

Owner reserves the right for the following:

- a) Rejection of any or all offers without assigning any reason whatsoever.
- b) Rejection of any offer which is incomplete with regard to the required information of scope of work.
- c) Review of the work performed by the Consultant either himself or through another Consultant separately appointed by him and ask for any clarification and changes / modifications to the work performed by the Consultant. Such changes shall be mutually discussed and agreed upon between the Owner and Consultant in his work without any cost and liability to the Owner and without any dilution of the responsibility of the consultant.

43.0 TRAVEL EXPENSES

The travel expenses incurred by the Consultant's personnel for journeys to site or REC Transmission Projects Co. Ltd. Office or anywhere in connection with the study under Scope of this Specification will be borne by the Consultant and the owner will not take any responsibility whatsoever on this account

44.0 ACCESS TO Consultant`s OFFICE / WORK SITE

The authorized representative (s) of REC Transmission Projects Co. Ltd. shall be provided access to the Consultant`s and/or its Associates premises or to the work site at any reasonable time during the currency of this work for expediting, inspection & checking of the progress of the Consultant`s work.

REC TRANSMISSION PROJECTS COMPANY LIMITED

(subsidiary of Rural Electrification Corporation Ltd)



Volume - III

Technical Specification for Survey Using Modern Survey

Techniques & preparation of Report

for

Package 1 - Evacuation System for

North-Karanpura

and

Package 2-Talcher Augmentation System

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**TECHNICAL SPECIFICATIONS FOR SURVEY USING MODERN SURVEY
TECHNIQUES & PREPARATION OF REPORT**

1. General Information & Scope Of Work

1.1. The technical specification covers survey including route alignment of transmission lines, identification of sub-station site and preparation of Report of the transmission system of the following Projects:

Package 1: Evacuation system for North Karanpura

A. Transmission Lines

S..NO.	Scheme/Transmission Works	Conductors per phase	Approx line length Kms.
1	North Karanpura –Gaya 765kV S/C line	4xbersimis	110
2	North Karanpura –Ranchi765kV S/C line	4xbersimis	80
3	Sipat/Korba(pooling)-Seoni 765kV S/C line	4xbersimis	370
4	Lucknow-Bareilly 765kV S/C line	4xbersimis	250
5	Bareilly-Meerut 765kV S/C line	4xbersimis	200
6	Agra-Gurgaon(ITP)-Gurgaon(PG) 400 kV D/C line	4xmoose	220

B. Sub-Stations

Gurgaon 400/220 kV GIS substation- 400/220 kV transformers : 2x315 MVA with associated 400 KV & 220 KV bays, 400 KV line bays: 4 nos. (2 nos. to be with 50 MVAR switchable reactors for Agra lines), 220 kV line bays: 4 nos. 400kV and 220 kV double bus scheme with associated Bus Coupler.

Package 2: Talcher Augmentation System

A. Transmission Lines

1	Bhubneshwar(Meramundali)-Berhampur (ITP) 400 KV D/C Line on Twin Moose Conductor	} 440 km
2	Berhampur(ITP) -Gazuwaka 400 KV D/C Line on Twin Moose Conductor	
3	Talcher II-Rourkela 400 KV D/C Line on Quadmoose Conductor	} 170 km

B. Sub-Stations

Berhampur 400 kV Switching station - 400 kV line bays: 4 Nos. each with 50 MVAR switchable reactors, bus reactor 63 MVAR, and 1 ½ breaker scheme.

The scope of work inter-alia shall include the following:-

- a. Route Alignment using satellite imageries of NRSA and Survey of India maps to the extent required , inter-alia including :-
 - i. Identification of three alternative route alignments & selection of optimised route alignment in consultation with the Owner. This shall be done using low resolution satellite imageries of NRSA and Survey of India maps. The output shall be in the form of final route alignment on digitised topographical map with latest details/ features upto 8 kms on both sides of selected route alignment (both in hard & soft copies).
 - ii. Digital terrain modeling wherever required along the selected route using contour data from duly updated topographical maps.
 - iii. Walk over survey of the optimized route alignment. (Finalization in consultation with Owner)
 - iv. Preparation of Survey reports, identification and explanation of route constraints (like Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc.), infrastructure details available enroute etc.
 - v. Identification of three alternative sites for the sub-stations as detailed in Clause-4 of this Technical Specification
 - vi. The scope shall also include supply of Image Processing Software with one license proposed to be used for extracting vector maps for GIS and three dimensional perspective for terrain characteristics for the purpose of selection of appropriate route alignment.
 - vii. Preparation of Report incorporating details as per Annexure A.

1.1.1 The bidder has the option to bid for either one package (Package-1 or Package-2) or both the packages (Package-1 and Package-2). In case the bidder opts to bid for both the packages, the bidder has to bid separately for both the package (Package-1 and Package-2).

1.1.2 The bid evaluation for both the packages (Package-1 and Package-2) shall be carried out separately. However, multi-package discount(s) offered, if any, shall also be considered in evaluation. The Owner will evaluate and compare bids on the basis of a bid for each package or a combination of both packages or as a total of all bids in a manner most advantageous to the Owner and

award would be made for the packages on the basis of least evaluated price to the Owner. The price shall remain FIRM till the completion of the assignment.

- 1.2. The quantities indicated in the scope of work are provisional. The final quantities for route alignment & survey (quantities in “kms” unit) shall be the route length along the optimized route alignment. The route alignment shall be carried out by the Contractor as per the technical specifications stipulated herein.
- 1.3. The Contractor must note that the Owner shall not be responsible for loss or damage to properties, trees etc. due to contractor’s work during survey. The Contractor shall indemnify the Owner for any loss or damage to properties, trees etc. during the survey work.
- 1.4. The Contractor should note that Owner will not furnish the NRSA satellite imageries or topographical maps prepared by survey of India but will make available assistance that may be required in obtaining these by providing letters of recommendation, if required, to the concerned authorities.
- 1.5. The bidder shall give along with their bid, clause by clause commentary indicating their confirmation / comments/ observation in respect of all clauses of technical specification.
- 1.6. The work shall be carried out by the contractor using modern surveying techniques. The bidder shall indicate in his offer, the detailed description of the procedure to be deployed. The details of the equipment & facilities including softwares for image processing, etc. available with the bidder or his associates shall also be furnished with the bid.
- 1.7. Any other activity not specifically mentioned in this specification but required to complete the scope of work shall be deemed to be included in the scope of the contractor, without any cost implication to the Owner.

1.8. Location Details

The bidders may visit the site to acquaint themselves with the terrain etc. For this purpose or for any other clarifications, they may contact REC at the following address:

Executive Director (T&D),

RURAL ELECTRIFICATION CORPORATION LIMITED

Core-4, SCOPE Complex, 7, Lodhi Road, New Delhi-110003.

Ph.: (011) 24363830, Fax.: (011) 24365483.

2.1 Route Alignment of Transmission Line

Route Alignment shall be done using satellite imageries of NRSA (PAN & LISS-III merged product of minimum resolution corresponding to 1:25,000 scale) and Survey of India topographical maps (scale 1:50,000). In case the required Survey of India maps are available in digitized form, the same shall only be procured and used by the contractor. The contractor shall identify & examine three alternative route alignments and suggest to the Owner the optimal route alignment between the terminal points.

2.2 Requirement of Transmission Line Routing

- 2.2.1 The alignment of the transmission line shall be most economical from the point of view of construction and maintenance.
- 2.2.2 Routing of transmission line through protected/reserved forest area should be avoided. In case it is not possible to avoid the forests or areas having large trees completely, then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.
- 2.2.3 The route should have minimum crossings of Major river, Railway lines, National/State highways, overhead EHV power line and communication lines.
- 2.2.4 The number of angle points shall be kept to a minimum.
- 2.2.5 The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.
- 2.2.6 Marshy and low lying areas, river beds and earth slip zones shall be avoided to minimize risk to the foundations.
- 2.2.7 It would be preferable to utilize level ground for the alignment.
- 2.2.8 Crossing of power lines shall be minimum. Alignment will be kept at a suitable distance from power lines to avoid induction problems on the lower voltage lines.
- 2.2.9 Crossing of communication line shall be minimized and it shall be preferably at right angle. Proximity and parallelism with telecom lines shall be eliminated to avoid danger of induction to them.
- 2.2.10 Areas subjected to flooding such as Nalah shall be avoided
- 2.2.11 Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid aircraft landing approaches.

- 2.2.12 All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.
- 2.2.13 Certain areas such as quarry sites, tea, tobacco and saffron fields and rich plantations, gardens & nurseries which will present the Owner problems in acquisition of right of way and way leave clearance during construction and maintenance, should be avoided.
- 2.2.14 Angle points should be selected such that shifting of the point within 100 m radius shall be possible at the time of construction of the line.
- 2.2.15 The line routing should avoid large habitations, densely populated areas, Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc. to the extent possible.
- 2.2.16 The areas requiring special foundations and those prone to flooding should be avoided.
- 2.2.17 For examination of the alternatives & identification of the most appropriate route, besides making use of information/data/details available/extracted through Survey of India Topographical maps and computer-aided processing of NRSA's satellite imagery, the contractor shall also carryout reconnaissance/walk over survey for verification & collection of additional information /data /details.
- 2.2.18 The contractor shall submit his preliminary observations & suggestions alongwith various information/data /details collected and also processed satellite imagery data, scanned topographical map data marked with the alternative routes etc. The final evaluation of the alternative routes shall be conducted by the contractor in consultation with Owner's representatives and optimal route alignment shall be proposed by the contractor. Digital terrain modeling using contour data from topographical maps as well as processed satellite data shall be done by the contractor for the selected route. A fly through perspective using suitable software(s) shall be developed for further refinement of the selected route, if required. Site visit and field verification shall be conducted by the contractor for the proposed route alignment.
- 2.2.19 Final digitized route alignment drawing with latest topographical and other details/features including all rivers, railway lines, canals, roads etc. upto 8 kms on both sides of selected route alignment shall be submitted by the contractor for Owner's approval alongwith report containing other information/details as mentioned above.
- 2.2.20 The co-ordinates of all the angle points as well as other important crossings, landmarks etc. shall be recorded using GPS instrument. For all such locations, permanent land marks such as rock, boulders, culverts etc. shall be provided with suitable white paint marks with directional and REC markings.

3.1.1 Tower Scheduling

The following shall be borne in mind:

a) Span

The maximum length of a section shall not exceed 5 Km in plain terrain and 3km in hilly terrain. A section point shall comprise of tension point with DB/B type or DC/C type or DD/D type towers as applicable. The normal span shall be considered as 350 m for 220 kV, 400 m for 400 kV lines and 450 m for 765 kV lines. General description of Towers for Transmission lines is enclosed as Annexure B for reference

b) Road Crossing

At all important road crossings, the tower shall be fitted with double suspension or tension insulator strings depending on the type of tower.

c) Railway Crossings

All the railway crossings enroute the transmission line shall be identified by the Contractor.

- i. The crossings shall be supported on DD/D type tower on either side.
- ii. The crossing span will be limited to 300 meters.

a. River Crossings

Suitable type of suspension/tension tower shall be used for river crossings. For non navigable river, clearance shall be reckoned with respect to highest flood level (HFL).

b. Power line Crossings

Where this line is to cross over another line of the same voltage or lower voltage, DA/A type tower with suitable extensions shall be used.

Provisions to prevent the possibility of its coming into contact with other overhead lines shall be made in accordance with the Indian Electricity Rules, 1956 as amended upto date. In order to reduce the height of the crossing towers, it may be advantageous to remove the ground-wire of the line to be crossed (if this is possible, and permitted by the Owner of the line to be crossed).

Minimum clearance in metres between lines when crossing each other:

Sl. No.	Nominal System Voltage	110-132KV	220KV	400KV	800KV
1.	110-132KV	3.05	4.58	5.49	7.94
2.	220KV	4.58	4.58	5.49	7.94
3.	400KV	5.49	5.49	5.49	7.94
4.	800KV	7.94	7.94	7.94	7.94

For power line crossings of voltage level of 132 kV and above, an angle tower shall be provided on either side of DA/A type tower which can be temporary dead end condition with proper guying.

c. Telecommunication Line Crossings

The angle of crossing shall be as near to 90 degree as possible. However, deviation to the extent of 30 degree may be permitted under exceptionally difficult situations.

3.2 Clearance from Ground, Building, Trees etc.

Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with the Indian Electricity Rules, 1956 as amended upto date.

3.2.1 The contractor shall also intimate the Owner, his assessment about the likely amount of tree & crop compensation etc. required to be paid by the Owner during execution stage. This assessment shall be done considering prevailing practices/guidelines, local regulations and other enquiries from local authorities.

3.3 Survey Report

3.3.1 Each angle point location shall be shown with detailed sketches showing existing close-by permanent land marks such as specific tree(s), cattle shed, homes, tube wells, temples, electric pole/tower, telephone pole, canal, roads, railway lines etc. The relative distance of land marks from the angle points and their bearings shall be indicated in the sketch. These details shall be included in the survey report.

3.3.2 Information w.r.t infrastructure details available enroute, identification and explanation of route constraints, etc shall also be furnished in the Survey report and shall inter-alia include the following:

- 3.3.2.1** All observations which the Contractor thinks would be useful to the construction of the transmission lines mentioned under scope of work are to be reported.
- 3.3.2.2** Some portions of the line may require clearance from various authorities. The Contractor shall indicate the portion of the line so affected, the nature of clearance required and the name of concerned organizations such as local bodies, municipalities, P&T (name of circle), Inland navigation, Irrigation Department, Electricity Boards and Zonal railways, Divisional Forest Authorities etc.
- 3.3.3** Six copies of survey reports along with two copies in soft form shall be furnished by the contractor to the Owner.

4.0 Sub-Stations

The contractor shall identify a minimum of three sites for sub-station. The optimum location of sub-station shall be finalized in consultation with the Owner. The contractor shall estimate the cost of the proposed site keeping in view the area required (including provision of staff quarters) and the prevalent rate/acre for various types of land, which shall also be separately indicated.

In addition to the scope of sub station specified at 1.1 (B) (for both packages 1 & 2), the land required should take care of provision of future expansion to take care of the following :

For Package 1:

- a) 2x315 MVA, 400/220 kV transformer with associated 400 kV & 220 kV bays.
- b) 6 no. 400 kV line bays.
- c) 2 nos. 400 kV line reactor.
- d) 1 nos. 400 kV bus reactor bay.
- e) 6 nos. 220 kV line bays.

For Package 2:

- a) 3x315 MVA, 400/220 KV transformers with associated 400 KV & 220 KV bays.
- b) 10 nos. 220 KV line bays.
- c) 1 no. 220 KV bus transfer bay.
- d) 1no. 220 KV bus coupler bay

- e) 2 no. 400 KV line bays.
- f) 2 nos. 400 KV line reactor bays.

The contractor shall furnish the information as per Annexure C for Substation sites.

5.0 Statutory Regulations and Standards

5.1 Statutory Regulations

The Contractor is required to follow local statutory regulations stipulated in Electricity (Supply) Act 2003, Indian Electricity Rules, 1956 as amended and other applicable local rules and regulations.

6.0 Completion Period

- a) Submission of alternate route alignments for transmission line , proposed alternative sites for sub station, Finalization of optimized route alignments of Transmission Lines and sub-station site in consultation with the Owner, walk over survey of optimized route, submission of various reports etc shall be completed **within 2 months of the LOA.**
- b) Assist in land acquisition including filing of application and follow-up/co-ordination with the concerned Authorities till the award of work to Transmission Service Provider (TSP) (Scheduled date 31.12.2007).

Content of Work for Report

Description

1. Project Highlight
2. Brief Background
3. Scope of Work
4. Complete technical profile of the project giving technical parameters of the Transmission System & equipment.
5. Metrological data like temp., humidity, rainfall, wind pressure & wind direction.
6. **DETAILS RELATED TO TRANSMISSION LINE**
 - a. Survey Report covering the scope of work detailed in the specification with all maps & other enclosures including details of the following enroute the transmission line
 - b. Places of Archaeological importance, river, streams, Estuary, sea, hills/ mountains etc.
 - c. Places of Historical, Cultural, Religious or Tourist importance
 - d. Defence installation
 - e. Railway Crossings
 - f. Power Line / Telecom Line Crossings
 - g. Land Availability (if required for acquisition)
 - i. Extent of land available
 - ii. Land use pattern (agricultural, barren, forest etc.)
 - iii. Land ownership (Govt. Pvt., tribal, non-tribal etc.)
 - h. Environmental and social aspect
 - i. Forest Involvement / Clearance
 - ii. Social Issue / R&R Measure
7. **DETAILS RELATED TO THE SUBSTATION**
 - a. **Location Details**
 - i. State/District/Village
 - ii. Longitude & Latitude
 - iii. Nearest town & distance, nearby industries (cement, power etc)
 - b. **Approach to Site**
 - i. Nearest Rail Head & Distance including Type (BG/MG)
 - ii. Road - Existing Highway/roads distance from site
 - iii. Constraints, if any, in access to site

c. Land Availability

- i. Extent of land available
- ii. Land use pattern (agricultural, barren, forest etc.)
- iii. Land ownership (Govt. Pvt., tribal, non-tribal etc.)
- iv. Prevailing land cost details
- v. Estimation of population affected

d. Topography of the area

- i. Permanent features
- ii. Soil Condition
- iii. Whether the site is flood prone & HFL of the site

e. Location & vicinity plan identifying the areas proposed for substation.

f. Environmental and social aspect

- i. Forest Involvement / Clearance
- ii. Social Issue / R&R Measure

8. Any other details

Annexure - B

General Description of Towers for Transmission line.

1. Type of Towers

400 kV AC lines with Twin or Quad MOOSE Conductor

Type of Tower	Deviation Limit	Type of Use
DA/A	0 deg	To be used as tangent tower.
DB/B	0 deg - 15 deg	To be used as angle tower / Section Tower
DC/C	0 deg - 30 deg	Medium Angle tower with tension insulator string
	0 deg	To be used as transposition tower
DD/D	30 deg- 60 deg	a) Large angle tower with tension Insulator string b) Anchor tower for river crossing with 0 deg deviation on crossing side and 0 deg – 30 deg angle on line side.
DDE/DE	0 deg	a) Complete Dead End b) Dead end with 0 deg to 15 deg deviation both on line and substation side (Slack Span)

765 kV AC lines with Quad Bersimis Conductor

Type of Tower	Deviation Limit	Type of Use
A	0 deg	To be used as tangent tower.
B	0 deg - 5 deg	To be used as Suspension Tower
C	0 deg - 15 deg	To be used as Suspension Tower
D	15 deg- 30 deg	Angle tower with tension Insulator string to be used as section tower or transposition tower
E	30 deg – 60 deg	a) Angle tower with tension Insulator string b) Dead end with 0 deg to 15 deg deviation both on line and substation side (Slack Span) c) Anchor tower for river crossing with 0 deg deviation on crossing side and 0 deg – 30 deg angle on line side

Annexure-C

Information Required for Substation Sites

S.N.	Criterion	Site-I	Site-II	Site-III	Remarks
1.0	Land				
1.1	Size (Acre)(Mtr.xMtr)				
1.2	Govt. /Private/Forest land				
1.3	Agriculture/Waste land				
1.4	Development				
1.5	Approximate cost				
1.6	Type of soil				
1.7	No. of owners				
1.8	Environment/Pollution in the vicinity				
1.9	Location with reference to nearest town				
1.10	H.F.L. Date				
1.11	Diversion of Nallah/Canal required				
1.12	Slope				
1.13	Extent of leveling required				
1.14	Land acquisition feasibility				
1.15	Rate of Govt. Land				
1.16	No. of owners				
1.17	Extent of approach				
1.18	Planned/unplanned development				
1.19	Size of sites (m x m)				
1.20	No. of families displaced				
1.21	Level of site with reference to road level				
1.22	Distance from sea shore				
1.23	Approach				
2.0	Obstacles in reaching site				
2.1	Nearby main road				
2.2	Length of approach road to be constructed				
2.3	Distance from main road				
2.4	Nearest railway station (BG/MG)				

- 2.5 Unloading facility at railway station
- 2.6 No. of Culverts required
- 2.7 Nearest EHV line
- 2.8 Length of line between this site & nearest substation for construction power
- 2.9 Length of proposed line (Approx.)
- 2.10 Additional crossings
- 2.11 Frontage for line take off
- 2.12 Telephone/Telegraph line
- 3.0 Community Facilities
 - i) Drinking Water
 - ii) Drainage
 - iii) Distance from
 - a) Post Office
 - b) Telephone
 - c) School
 - d) Market
 - iv) Security
 - v) Availability of construction water
 - vi) Availability of drinking water
- 4.0 Others