

PFC CONSULTING LIMITED

(A wholly owned subsidiary of Power Finance Corporation Limited -
A Government of India Undertaking)



BID DOCUMENT FOR

Survey & Preparation of Report for Transmission System for Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G” Using Modern Survey Techniques



Corporate Office
9th Floor, A-Wing, Statesman House, Connaught Place, New Delhi- 110001

February 12, 2020

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PFC CONSULTING LIMITED

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BID INVITATION LETTER

**(Online bids are invited in single stage two part system (Technical bid
& Price bid) only from the firms empanelled by PFCCL under Area
Code '3(E)(i) or '3(E)(ii)')**

PFC Consulting Ltd. invites E-Tenders for *Appointment of Technical Consultant for Survey and Preparation of Report for Independent Transmission Project (ITP) Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”.*

a)	Opening date of Tender downloading	February 12, 2020 from 1600 hrs (IST)
b)	Submission date of E-bids	February 21, 2020 till 1200 hrs (IST)
c)	Opening of E-bids (Technical)	February 21, 2020 at 1230 hrs (IST)
d)	Opening of E-bids (Financial)	To be intimated to Technically Qualified Bidders

Note: Tender Notice and Tender Document are available on PFC Consulting Limited (PFCCL) website and can be downloaded from <https://www.pfcclindia.com> or from the e-Tendering portal <https://mstcecommerce.com/eprochome/pfccl>. For bid submission, the tenderer will have to necessarily download an official online copy of the tender documents from e-portal. All future Information viz. corrigendum /addendum/ amendments etc. for this Tender shall be posted on the PFC Consulting Ltd. website and said e-Procurement Portal only.

The bidder shall bear all costs associated with the preparation, submission of bid, participation in bidding process including cost of registration with e-Procurement Portal. PFCCL in no way will be responsible or liable for these costs regardless of the conduct or outcome of the bidding process.

Bidders are advised to start the registration process on the e-Procurement Portal as it may take a few days so as to avoid any delay in bid submission (upload) stage. Bidders may visit MSTC's e-procurement Portal Guidelines for vendors at <https://www.mstcecommerce.com/eprochome/UserManualVendor.pdf> for further details.

BID INVITATION LETTER

Ref: 04/19-20/ITP-41

February 12, 2020

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Subject: Request for an offer for Consultancy Services Package for Survey and Preparation of Report Transmission System for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”** using Modern Survey Technique

Dear Sir,

Ministry of Power has initiated a scheme for development of Independent Transmission Project through Private Participation in India through tariff based competitive bidding guidelines. 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, Shell companies have been formed as subsidiaries of PFCL (herein after called “Owner”) to obtain all requisite clearances till the stage of tariff based bidding.

Online bids are invited in single stage two part system (Technical bid & Price bid) only from the firms empanelled by PFCL under Area Code ‘3(E)(i) or ‘3(E)(ii)’ in respect of Survey and Preparation of Report for transmission system for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”**.

Though bids for five (05) different packages are invited by PFCL simultaneously for different transmission schemes, maximum of three (03) packages will only be awarded to a single Agency.

The Scope of Work is indicated in Volume-III of this document. The Eligibility Criteria, Deliverables, Selection procedure and criteria, terms of payment, terms and conditions etc. are given below:

1.0 ELIGIBILITY CRITERIA

- i) The Consulting Organization (Bidder) should have been empanelled with PFCL under Area Code ‘3(E)(i)’ or ‘3(E)(ii)’. The empanelled Consulting Organization with PFCL

shall be evaluated solely on its own credentials for meeting the eligibility/ qualifying criteria and not on the credentials of any other organization.

- ii) The firms should have completed at least one assignment of Survey & Preparation of Report for 400kV and/or higher voltage level of minimum 164 km transmission line length during the period from Indian FY 2014-2015 onwards till 7 days prior to bid submission date.

The Bidder is required to submit the documentary proof for meeting the above eligibility criteria as per the format enclosed at Annex-1 to Schedule 2 of Covering Letter.

2.0 CONTENTS OF BID DOCUMENTS

The following documents are enclosed along with this Bid Invitation Letter for your quotation purposes:

1. Bid Proposal Sheets (Volume- I)
2. Conditions of Contract (Volume-II)
3. Technical Specification including Scope of Work for Survey and Preparation of Report for transmission system for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”** (Volume-III)

3.0 PERIOD OF ENGAGEMENT

The period of engagement would be 4 weeks from the date of LoA, however, the completion of assignment shall be till the award of work to Transmission Service Provider by PFCCL.

4.0 BASIS OF PRICE OFFER

The price offer shall be for the assignment and shall remain firm throughout the period of contract. Quoted price will be on lump sum basis inclusive of taxes and duties, all travel, and 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. However, the applicable Goods and Services Tax shall be paid over and above the quoted price at applicable rates on the date(s) of payment(s). 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.

All related travel expenses incurred by the Consultant’s personnel for journeys to site or Owner’s Office or anywhere in connection with the consultancy services/study under Scope

of this Specification will be borne by the Consultant and the Owner will not take any responsibility whatsoever on this account.

5.0 SUBMISSION OF BID

5.1 Bid shall consist of two parts "**Technical Proposal**" and "**Financial Proposal**" and should be duly submitted online using the e-Procurement Portal <https://mstcecommerce.com/eprochome/pfcccl> online on or before **February 21, 2020 till 1200 hrs (IST).**

Note:

The following documents shall be necessarily enclosed/ attached along with the Technical Proposal. A bid shall not be considered as complete/ responsive without any of these documents.

- a) Details of Past experience of the firm as per format provided at **Annexure- I to Schedule -2** of Bid Proposal sheets.
- b) Documentary evidence in support of past experience.
- c) The proposed methodology and work plan in responding to the Scope of Work as per format provided at **Annexure- II to Schedule - 2** of Bid Proposal sheets.
- d) The curriculum vitae of each team member proposed to be deployed for the assignment as per format provided at **Annexure- III of schedule-2** of Bid proposal sheets.
- e) Name and contact information of one team member who shall be the Team Leader for the assignment.
- f) Details / information as per **Schedule-3** of Bid Proposal Sheets.
- g) Authorization Letter in favor of the authorized signatory as per format provided at **Schedule-4** of Bid proposal sheets.

PFCCCL may call for any clarifications/ information if required.

- 5.2** The Financial Proposal should contain the lump sum price for the consultancy services. PFCCCL may call for any clarifications/ information if required.
- 5.3** Bidders are instructed not to approach via e-mail, fax, and telephone or contact any official in PFCCCL as regards to this bid after the submission of the bids, apart from communications by PFCCCL in writing, and bid of a bidder doing so shall be summarily rejected.

6.0 BID OPENING AND EVALUATION OF PROPOSALS

6.1 Opening of Technical Proposal

The "**Technical Proposal**" will be opened online on **February 21, 2020 at 1230 hrs (IST)** in the presence of the authorized representatives of the bidders, who wish to be present.

6.1.1 Technical Proposal Evaluation

The Technical evaluation would be in two parts:

A. Completeness of bid with respect to the bidding document

- i) The Bidder should be empanelled with PFCCCL under Area Code '3(E)(i)' or '3(E)(ii)'
- ii) The Technical Proposal should contain all documents mentioned at Para 5.1 above, duly filled and signed by authorized signatory.
- iii) The Bidder should agree to the entire scope of work and deliverables. No proposal for part scope of work will be considered.
- iv) The Bidder should submit Authorization Letter in favor of the authorized signatory signing and submitting the Bid as per Schedule-4.
- v) There should be no deviations from any or all the contents of the bidding documents or conditional or alternate bids.
- vi) Adequacy of the proposed Methodology and work Plan in responding to the Scope of Work as per Annexure-II to Schedule-2 of Bid Proposal Sheet (Volume-I).
- vii) Details of past experience are to be provided in Technical Bid as per format provided at Annexure-I to Schedule-2 of Bid Proposal Sheet (Volume-I).
- viii) Documentary evidence (e.g. Client's certificate for successful completion of the assignment and Copy of work Order/Letter of Award/Lol/Purchase Order etc.) to be provided in support of past experience.
- ix) Details of composition of Team and Team Leader proposed to be deployed are to be provided in Technical bid as per format provided at Annexure-III to Schedule-2 of Bid Proposal Sheet (Volume-I).

PFCCCL may call for any clarifications/ information if required.

Bid of any firm not meeting any or all the above criteria, the technical evaluation of the firm will not be carried out and the bid shall be rejected outrightly.

B. Evaluation of experience of the firm: Maximum 100 Marks

The bidder's relevant experience in the past five years has been considered. For this purpose, the relevant experience of the firm has been considered (7) days prior to the last date of bid submission deadline. Experience of the bidders would be evaluated on the following basis:

- i) No. of assignments completed for Survey & Preparation of Report for 400 kV and/or higher voltage level of minimum 164 km transmission line length during the period from Indian FY 2014-2015 onwards till 7 days prior to bid submission date. **Max marks 70** (The marks will be allocated as follows: One assignment = 60 marks, Two assignments = 65 marks, Three assignments or more = 70 marks)
- ii) Adequacy of the proposed methodology and work plan in responding to scope of work and deliverables : **Max marks 30**

PFCCL reserves the right to seek clarifications during the evaluation process of the Technical proposal.

The Bidder obtaining 75 marks or more would be regarded as technically qualified Bidder and considered for opening of "Financial Proposal". Financial Proposal of non-qualified Bidders will not be opened online.

6.2 Opening of Financial Proposal

The "Financial Proposal" would be opened online only for the technically qualified bidders. The date and time of opening of the "Financial Proposal" of the technically qualified bidders will be intimated to all technically qualified bidders. The Financial Proposal will be opened online.

6.3 Financial Proposal Evaluation

Financial Proposals of only such bidders will be opened online who have been declared Technically Qualified. Financial Proposal of other Bidders will not be opened.

The assignment will be awarded to the technically qualified bidder who has quoted lowest Lump Sum price, in Indian Rupees, without condition(s) or alternate price bid. Conditional Financial Proposals will be rejected outright. The applicable Goods and Services Tax shall be paid over and above the quoted price at applicable rates on the date(s) of payment(s).

In case of more than one bidder at L1 price, the Assignment will be offered to the bidder quoting L1 price and obtaining the highest marks in the technical evaluation.

Though bids for five (05) different packages are invited by PFCCL simultaneously for different transmission schemes, maximum of three (03) packages will only be awarded to a single Agency.

7.0 VALIDITY OF BID

Bidders shall keep their Bids /Quotations valid up to 120 (One Hundred and Twenty) days from the date of submission of bid. Bidders may be required to further extend the validity of Bid as per the requirement of PFCCL.

8.0 CONTRACT PERFORMANCE GUARANTEE (CPG)

In the event of an award, the successful bidder, within fifteen (15) days of receipt of Letter of Award (LoA) 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 value. The CPG/BG should be as per Performa (will be given to the successful bidder) and should be kept valid up to twelve (12) months from the date of issue of Letter of Award (LoA).

9.0 CONTRACT AGREEMENT

- 9.1 In the event of award, the selected bidder ("**Consultant**") will be required to enter in to a Contract Agreement with the PFCCL within 10 (ten) working days from the date of the Letter of Award (LoA) or within such extended time, as may be granted by the PFCCL. PFCCL shall provide the pro-forma of the Contract Agreement.
- 9.2 Formal Contract Agreement will be executed on Non-judicial stamp paper of Rs. 100/- (Rs. one hundred only) as per the format provided by PFCCL. Two sets of Non-Judicial Stamp papers of Rs.100/- each and water mark papers to be purchased by the Consultant from Delhi State.
- 9.3 The Agreement will be signed in two originals and the consultant shall be provided with one signed original Agreement
- 9.4 The date of execution of the contract agreement in no case shall alter the date of start or completion period of the work.
- 9.5 Till the time a 'Contract Agreement' is prepared and executed, the Letter of Award shall be read in conjunction with the Bidding Documents and will constitute a binding contract.
- 9.6 The executed Contract Agreement may only be amended or supplemented by a written agreement between the parties.

10.0 TERMS OF PAYMENT:

- 10.1 Forty (40%) Percent of the contract value shall be paid after submission and acceptance of Draft Project Report.

- 10.2 Thirty (30%) Percent of contract value shall be paid after submission & acceptance of the Final Report.
- 10.3 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.

11.0 DELIVERABLES:

The firm is required to submit the following deliverables in line with the time schedule indicated against each deliverables.

- 11.1 The consultant shall submit progress report for all the works/ studies/ survey every week as per the format mutually agreed upon.
- 11.2 Submission of alternative Route Alignment for Transmission Line and finalization of Route Alignment for Transmission Line and Estimation of land requirement and identification of alternative sites for substation as per Annexure-A & Annexure-B in consultation with the Owner within one (1) weeks from the date of LoA.
- 11.3 Walk over survey of the optimized route and submission of Draft Reports (three copies) including the details of the substations and incorporating details as per Annexure-A & Annexure-B within two (2) weeks from the date of LoA.
- 11.4 The consultant shall submit ten (10) copies of final report, both in soft and hard copies, in English language within four (4) weeks from the date of the Letter of Award (LoA).

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.

All raw data for all the studies/ reports/ surveys shall also be submitted.

All reports shall be submitted in A4 size sheets and all drawings on A0 size sheets. All drawings shall be properly bound and printed on good quality paper.

- 11.5 Preparation & filing of application for obtaining forest clearance, if any, from the concerned authorities.
- 11.6 Initiation of land acquisition for substation including preparation & filing of application and follow-up/co-ordination with the concerned Authorities.
- 11.7 There may be any other deliverables, which are not specifically mentioned above but may be required for successful completion of the assignment. The consultant shall have to provide such deliverables, as may be desired by PFCCCL during the course of the assignment for the successful completion of the assignment to its satisfaction.

12.0 OTHER TERMS & CONDITIONS:

- a) The financial proposal by the bidders shall be in Indian Rupees as per format enclosed with no escalation at any stage during or after the completion of the assignment for any reason whatsoever.
- b) The Consultant shall make available the services of the identified personnel as may be required for successful execution of the assignment and or as may be required by PFCCL on specified dates, venues and time in order to meet the obligations of PFCCL.
- c) All claims shall be raised by the Consultant as per the terms of payment after being due, and would be accepted for payment based on satisfactory progress and quality of the work at the sole discretion of the competent authority.
- d) In case there is a delay by the Consultant in accomplishing the deliverables which in the opinion of PFCCL is attributable to the Consultant, PFCCL reserves the right to get such specific work(s) done through any other Agency(ies) at the risk and cost of the Consultant for timely completion of the deliverables.
- e) In case the performance of the proposed team member(s) is not satisfactory, the Consultant will be asked to change/replace the team member(s) within three days of receipt of such request from PFCCL with a member acceptable to PFCCL.
- f) Any change in the list of key personnel submitted with the bid shall be made only with the prior approval of CEO, PFCCL or as may be requested by CEO, PFCCL.
- g) PFCCL with the approval of CEO, can cancel the contract at any stage of the work, in case it is found that the knowledge of a team/team member(s) and or his/her performance is not satisfactory, any information given at the time of submission of the bid is found to be incorrect.
- h) Given the nature of the work being entrusted, the selected organization would have to give an undertaking to the effect that the contents/ essence of any reference/ documents given would not be disclosed to any third person without the express approval of PFCCL, failing which the engagement of the organization would be terminated.
- i) If due to any reason or decision of the Govt/Client, the Assignment is dropped and the Consultant is directed to discontinue work, the "Drop Dead Fee" would be limited to the payments received by the Consultant and the claims already raised, as per the payment terms relating to the Assignment, till the point of calling off the Assignment or as mutually agreed.
- j) **Conflict of Interest:** Consulting organization or their Partners / any other Employee or Associate would not be hired for any work whose interests are that in conflict with their prior or current obligations to the other organizations, or that may place them in

a position of being unable to carry out the work assigned to them at any point of time during the currency of engagement by PFCCL or above all enable them to pose a threat to PFCCL's consulting business in future. Without limitation on the generality of the foregoing, Consulting organizations would not be hired, under the circumstances set forth below:

Consulting organizations that have business or family relationship with member(s) of PFC's and/or PFCCL's employees or persons positioned in or on the Board of these two organizations by whatever process would not be engaged. A declaration to this effect would be given by the organization when being engaged, and if found incorrect, the Consulting organizations would be debarred from any further engagement by PFCCL ever.

- k) The Consultant shall keep PFCCL, both during and after the term of this Contract, fully and effectively indemnified against all losses, damage, injuries, deaths, expenses, actions, proceedings, demands, costs and claims, including, but not limited to, legal fees and expenses, suffered by PFCCL or any Third Party, where such loss, damage, injury or death is the result of a wrongful action, negligence or breach of contract by the Consultant, or the Consultant's personnel, including the use or violation of any copyright work or literary property or patented invention, article or appliance
- l) Offers received in the designated office after the due time and date mentioned above shall not be considered.
- m) PFCCL reserve the right to accept or reject any or all Proposals/Offer or annul the bid Process or modify/ change the content of the bid document without assigning any reason.
- n) PFCCL shall not entertain any claim of any nature, whatsoever, including without limitations, any claim of expenses in relation to the preparation, submission or any other activity relating to bidding or any other expense till award of contract.

The complete bid document can be downloaded from our website: www.pfcclindia.com. For submission of bid it is necessary that Bidders may download complete Bid document from the e-Procurement Portal <https://mstcecommerce.com/eprochome/pfccl> on or before **February 21, 2020 at 1200 hrs (IST)**.

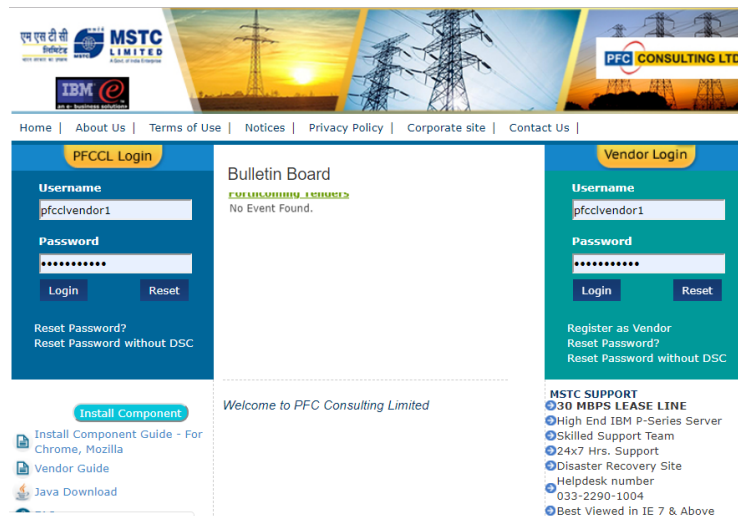
Yours sincerely,

For and on behalf of PFC CONSULTING LTD
Executive Vice President

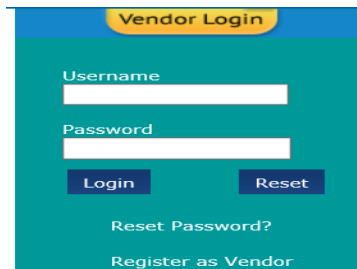
Encl: as above

SPECIAL INSTRUCTIONS TO BIDDERS FOR E- TENDERING

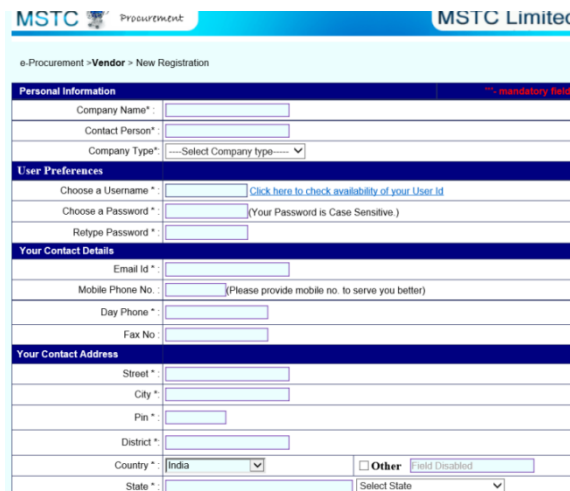
1. Use Internet Explorer to go to <https://www.mstcecommerce.com/eprochome/pfccl>



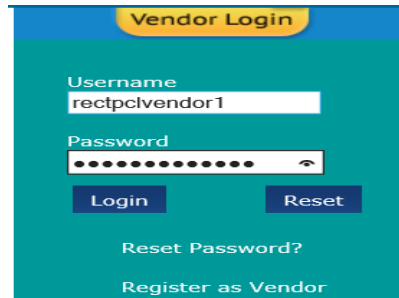
2. On the right side of the page click on Register as a Vendor:



3. Fill the form that appears to create username and password.

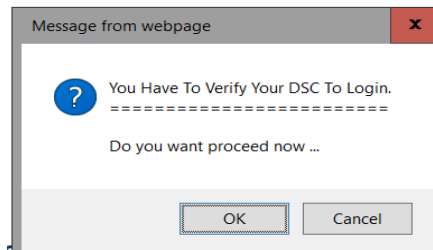


4. Once the registration is done, login with your user name and password:

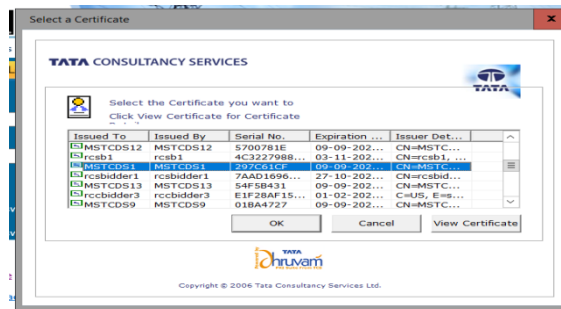


The image shows a 'Vendor Login' form with a teal background. It includes fields for 'Username' (containing 'rectpclvendor1') and 'Password' (masked with dots). There are 'Login' and 'Reset' buttons, a 'Reset Password?' link, and a 'Register as Vendor' link at the bottom.

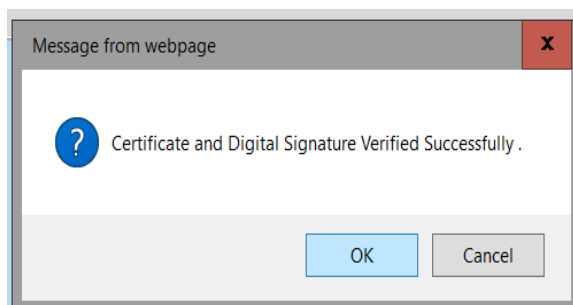
5. System will ask you to verify your digital signature



6. Press Ok and select your digital signature from the List:

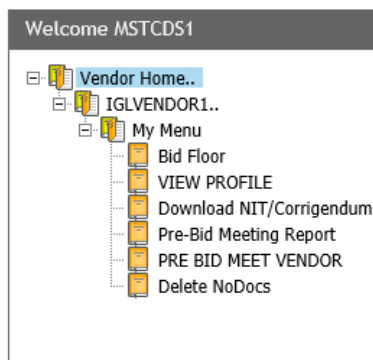


7. Your digital signature will be verified



8. Once login is complete, a bidder can access My Menu through the left side of the page:

Bid Document for Survey & Preparation Report for Package - E "Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G"



- Here click on Download NIT/Corrigendum button to download the NIT/Corrigendum's. Select Event number and click on download to download the files:

Download NIT/Corrigendum

SELECT EVENT NO : RECTPCL/17-18/ET/3[3605] ▼

SELECT NIT/CORR./Other Docs : Select File ▼

Download

- To submit the bid a bidder can proceed to Bid Floor through the left side My menu. In Bid Floor click on live events to view a list of Live events. In live events select the tender number where you wish to submit a bid.

Hi MSTCDS1

e-Procurement Event Info Server Time : 2019/3/18 16:42:31

Select Buyer : Indraprastha Gas Limited ▼

Live e-Procurement Events : Live Events

Forthcoming e-Procurement Events : Forthcoming

e-Procurement Event Listing For Future e-Procurement Events ▼

e-Procurement Event No.	e-Procurement Event Start Date	e-Procurement Event Close Date
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- On clicking the event number, if the bidder has not paid transaction fee, system will prompt them to pay the transaction fee. They can pay the transaction fee by going to Transaction Fee payment link in their login, and pay the same through online payment (debit card, credit card, net banking etc) or RTGS/NEFT (Challan).

Welcome MSTCDS1

Vendor Home..

- Bidder Company Name
- My Menu
 - Download NIT/Compendum
 - Pre-Bid Meeting
 - Pre-Bid Meeting Report
 - Bid Floor
 - VIEW PROFILE
 - Technical CST Vendor
 - Transaction Fee Payment
 - Delete NoDocs

Select a Event :

Select Event Number :

Transaction fee : 1180.0

Select Payment Type: ☒ NEFT/RTGS ☐ Online Payment

Proceed To Payment

Note:

1. Payment should be made within 3 days after generating the Challan for NEFT/RTGS otherwise the challan shall become invalid.
2. For making payment through Online Payment option, please make sure that your website address has https and you have enabled "access data sources across domains" under Miscellaneous tab. (Tools --> Internet Options --> Security --> Custom Level --> Miscellaneous).
3. Bidders are advised not to combine different challans (in NEFT/RTGS option) while making payment towards transaction fee for different e-tenders. For every challan generated from the system, separate payment should be made; else such combined payment for two or more e-tenders won't be considered.
4. Online Payment option can be used in IE version 9 and above only.

12. Tender can be of multiple types with price bid uploading in Excel or Technical-Price type. The bid floor for each type of event will change automatically. On clicking the tender number one of the following screens will appear:
For 2 part with price bid in excel

Hi MSTCDS1

EVENT INFO

Events Details

Current Server Time: 18.3.2019 16:48:59 IST

Event No	Event Type	Event Start Time	Event Close Time
IGL/11/18-19/ET/30	2Cover_Price_Bid_Upload_in_Excel	05.02.2019 12:55:00	18.03.2019 18:00:00

Technical Bid

Upload Docs

ITEM NO	ITEM Name	Price Bid	Final Submission	Withdraw Bid	Delete Bid	Bid Status
1	BUILDING	Download Upload Price	Final Submission	Withdraw Bid Submit regret letter with	Delete Bid	No Bid Saved

E-Tender Technical Cum Price Bid

Hi MSTCDS1

EVENT INFO

Events Details

Current Server Time: 18.3.2019 16:50:6 IST

Event No	Event Type	Event Start Time	Event Close Time
IGL/abc/18-19/ET/77	E-Tender Technical Cum Price Bid	16.03.2019 13:36:00	19.03.2019 00:00:00

Common Terms

Upload Documents

Lot No	Lot Name	Cover 1	Cover 2	Final Submission	Withdraw Bid	Delete Bid	Bid Status
1	test 1	Techno-Commercial	Price	Final Submission	Withdraw Bid	Delete Bid	Price Saved
2	test 2	Techno-Commercial	Price	Final Submission	Withdraw Bid	Delete Bid	No Bid Saved

13. For each type of event the event details including start time and close time the details will be given on the top of the page.
14. To submit the tender the bidder has to start from top left and submit the details one by one.
15. For 2 part with price bid in excel, the bidder has to submit technical bid, by filling the details and clicking the save button.

(PLEASE ENTER ALL VALUES AND CLICK ON SAVE BUTTON TO SAVE YOUR OPINIONS)		
Purchaser's Specification		Agree
1 Technical Terms		
1.1	a	Agree with remarks
1.2	a	Remarks
1.3	a	AGREE
1.4	a	Agree
1.5	a	AGREE

- a) After the technical bid is saved, a bidder can proceed to uploading documents through the link upload docs:

UPLOAD DOCUMENTS

Select Cover :

Tecnical Bid

spec

Browse...

Upload

Back To Floor

- b) Please note that under no circumstance the price bid excel has to be uploaded here.
- c) After the documents have been uploaded, the bidder can click on download excel to download the excel format.
- d) Fill up the excel sheet as per the details given therein and tender document.
- e) To upload the filled up excel click on Upload Price Button, click on browse to select the file and then click on Upload and Save encrypt file.

Upload Price Bid File :17-18-ET-19-5312-38840-Book2.xls

Browse File :

Browse...

Uploaded File Details

File Name :

File Size[bytes] :

Encrypted File Size[bytes] :

File Size % Increase After Encryption :

Uploaded And Encrypted Bid File:

Upload And Save Encrypt File

- f) The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-commercial and price bids and resubmit the same. Please note that at the end the bid must be final submit, otherwise the same will not be considered.

16. For E-Tender Technical Cum Price Bid:

- a. In the manner similar to above the bidder has to fill up Common terms, then press save button to submit.
- b. Then the bidder has to upload documents as per the list shown therein.
- c. Once the documents are uploaded the bidder has to submit the Technical and Price bids.
- d. The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-commercial and price bids and resubmit the same. **Please note that at the end the bid must be final submit, otherwise the same will not be considered.**

Bidder's may note that in each case using the Delete bid button will only delete the bids and then the bidder can resubmit upload tender closing time.

Using the withdraw button the bid will be withdrawn and the bidder will not be allowed to submit any further bid in that event.

For any assistance regarding the Tender Document and/or term and conditions the bidders may contact at PFCCL:

Contact Person	Mr. Sanjay Nayak, VP Ms. Ina Gupta, Chief Manager
Telephone	011-23443996 011-23443906 [between 900 hrs to 1730 hrs on working days]

For any assistance during bid submission, system settings etc. bidders may contact at MSTC:

<i>Phone Number</i> 03322901004, 01123212357, 01123215163, 01123217850 <i>Email</i> mstcnro@mstcindia.co.in Please mention "Helpdesk" as subject while sending emails <i>Availability</i> 1000 hrs to 1730 hrs on all working days.
--

Offline Submissions:

No offline submission is required.

Note: The Bidder should upload the scanned copies of all the documents as Bid- Annexure during Online Bid-Submission.

PFC CONSULTING LIMITED

**(A wholly owned subsidiary of Power Finance Corporation Ltd. -
A Government of India Undertaking)**



VOLUME – I

BID PROPOSAL SHEETS

Survey & Preparation of Report for Transmission System for

Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”

Using Modern Survey Techniques

COVERING LETTER

(ON THE LETTER HEAD OF THE ORGANIZATION/FIRM)

Bidder's Proposal Ref. No. and Date

Person to be contacted

Designation

Telephone No.

FAX

To:

Executive Vice President

PFC Consulting Ltd.

(a subsidiary of PFC Ltd.)

9th Floor, A-Wing, Statesman House,

Connaught Place, New Delhi 110001.

Dear Sir,

- 1.0 We, _____ (Name of consulting organization), hereby propose to provide the Consultancy Services for Survey and Preparation of Report for transmission system for **Package - E "Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G"**.
- 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 herewith enclose Technical & Financial proposal for selection of our organization as consultant on lump sum basis for assisting PFCCCL on Consultancy Services for transmission system for **Package - E "Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G"**.
- 4.0 We are submitting our bid online consisting of:
 - i) **Technical Bid** as Part 1 consisting of:
 - a. Technical qualification of our firm (as per format provided at Annexure I to Schedule 2 of Bid Proposal Sheets)
 - b. Documentary evidence in support of past experience.
 - c. The proposed methodology and work plan in responding to the Scope of Work (as per Annexure II to Schedule 2 of Bid Proposal Sheets).

- d. The curriculum vitae of each team member (as per format provided at Annexure III to Schedule 2 of Bid Proposal Sheets)
- e. Bid Invitation Letter along with all other documents as issued by PFCL duly stamped and signed on each page.
- f. Details/information as per Schedule 2 and 3 of Bid Proposal Sheets.

Note: All the above formats including supporting documents shall be scanned and uploaded as a part of Technical Bid.

ii) **Price Offer** as Part 2 (submitted online)

- 5.0 _____ **[Name and contact information of one of the team member] shall be the Team Leader for the assignment.**
- 6.0 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 (excluding Goods and Services Tax), duties & levies etc. payable by us under this consultancy assignment.
- 7.0 We hereby confirm that if any Income Tax, Surcharge or any other Corporate Tax is attracted under the law, we agree to pay the same to the concerned authorities.
- 8.0 We confirm that the prices and other terms and conditions of this proposal are valid for a period of 120 days from the date of submission of bid.
- 9.0 We declare that the services will be rendered strictly in accordance with the specifications and we do not have any deviation to any of the terms and conditions of the bidding documents.
- 10.0 We confirm our acceptance/compliance to the `Deliverables` 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.
- 11.0 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.
- 12.0 We give our unconditional acceptance/compliance to the Bid Documents issued by PFCL. The proposal is unconditional.

- 13.0 Further, we confirm that we agree and seek no deviations from the 'Scope of Work', 'Time Schedule', 'Deliverables', 'Terms of payment` and all other terms and conditions as contained in the 'Bid Document'.
- 14.0 We confirm to execute the Contract Agreement as per the provisions of the Bid Document.
- 15.0 We understand that PFCCL will award the contract to the successful consultant whose offer is substantially responsive and to be the lowest evaluated offer.
- 16.0 We confirm and certify that all the information / details provided in our bid are true and correct.
- 17.0 We also declare that by taking this assignment we do not have any conflict of Interest with any of our prior or current obligations to other organizations/clients and also do not have business or family relationship with member(s) of PFC's and/or PFCCL's employees or persons positioned in or on the Board of these two organization by whatever process and if found incorrect, we may be debarred from any further engagements by PFCCL forever.
- 18.0 We certify that all the information provided in our bid, including the information regarding the team members, are true. We understand that any willful misstatement in the bid may lead to disqualification or cancellation of award if made or termination of contract. We also understand that in such a case we may be debarred for future assignments with PFCCL for a period of maximum three years from the date of such disqualification.
- 19.0 Further, we undertake that in the event of our appointment as sub consultant, given the nature of the work being entrusted, the contents/ essence of any reference/ documents given would not be disclosed to any third person without the express approval of PFCCL, failing which the engagement of the organization would be terminated.

Signature of Authorized Person
Name, Designation & Company seal

Date:

Place:

(ON THE LETTER HEAD OF THE ORGANIZATION/FIRM)

ADEQUACY WORK PLAN

Bidder's Name & Address

.....

To :

**Executive Vice President ,
 PFC Consulting Limited
 (a subsidiary of PFC Ltd.)
 9th Floor, A-Wing, Statesman House,
 Connaught Place, New Delhi – 110001**

Dear Sir,

We hereby enclose a brief write up on the proposed methodology to be adopted for Consultancy Services for Survey and Preparation of Report for transmission system for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”** using Modern Survey Technique as per the following Annexure to this schedule:

1. Organizational set up of the Company/ Institute
2. Past assignment completed with successful completion certificate should be submitted as per **Annexure I of Schedule 2**
3. Documentary evidence in support of past experience.
4. The proposed methodology and work plan in responding to the Scope of Work as per **Annexure II of Schedule 2.**
5. Composition of Team and the Team Leader to be deployed as per **Annexure III to Schedule 2 (Page 1 of 2)**
6. The curriculum vitae of each team member as per **Annexure III to Schedule 2 (Page 2 of 2).**
7. Assignments on hand

Signature of Authorized Person
 Name, Designation & Company seal

Date:

Place:

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

On Company's Letter Head
EXPERIENCE OF ORGANIZATION

1. Brief Description of the Organization:
2. Outline of experience on Assignments:

No. of Survey & Project Report for transmission lines (The bidder's relevant experience during the period from Indian FY 2014-15 onwards including the current Financial Year till 7 days prior to bid submission date.)

S. No.	Name of Assignment	Name(s) of member(s) associated with the assignment	Brief description/ Scope of the assignment	Name of the Client	Work Order No.& date	Date of		Details of Documentary evidence attached #
						Start	Finish	
01								
02								
03								

1. It is hereby certified that the above mentioned details are true and correct.
2. It is hereby certified that our company has actually carried out and completed the above mentioned work/assignments

Date:
Place

Signature of Authorized Person
Name, Designation & Company seal

- * If the Survey & Project Reports for Transmission System are done for more than one section/element of line in one Work Order, it shall be considered as one only.

- * Assignment of Survey & Project Reports for 400 kV and/or higher voltage level of minimum 164 km transmission line length shall only be considered for evaluation purpose.
- # Documentary evidence: e.g. Client's certificate for successful completion of the assignment and Copy of work Order/Letter of Award/Lol/Purchase Order etc.) to be provided in support of past experience.

THE PROPOSED METHODOLOGY AND WORK PLAN
(ON THE LETTER HEAD OF THE ORGANIZATION/FIRM)

Bidder's Name & Address

.....
.....
.....

To:

**Executive Vice President,
PFC Consulting Limited
(a subsidiary of PFC Ltd.)
9th Floor, A-Wing, Statesman House,
Connaught Place, New Delhi – 110001.**

Dear Sir,

We hereby enclose a brief write up on the proposed methodology to be adopted for Consultancy Services for Survey and Preparation of Report for transmission system for **Package - E "Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G"** using Modern Survey Technique indicating the following.

- i) Approach Methodology and Work Plan in responding to scope of work and deliverables
- ii) Key Personnel and their Task Assignment for Completing the Assignment

Signature of Authorized Person
Name, Designation & Company seal

Date:
Place:

On Company's Letter Head

COMPOSITION OF TEAM AND THE TEAM LEADER TO BE DEPLOYED

	Name
	<u>Team Members</u>
	Team Leader
1	
	Other Members
2	
3	
4	
5	
6	

Signature of Authorized Person
Name, Designation & Company seal

Date:
Place:

Note: Curriculum Vitae of the Personnel listed above should be enclosed as per the suggested format at Page 2 of 2 of Annexure III to Schedule 2.

SUGGESTED FORMAT OF CURRICULUM VITAE FOR EACH MEMBER OF CONSULTANTS TEAM

Name: _____

Profession/ Present Designation: _____

Total post qualification experience: _____

Years with organization: _____

Educational Qualification:

(Under this heading, summarize college/ university and other specialized education of staff member, giving names of colleges, etc. degrees obtained and Year of Passing/obtaining the qualification.)

Experience:

(Under this heading, list of positions held by staff member since graduation, giving dates, names of employing organization, title of positions held and location of assignments. For experience in last ten years also give types of activities performed and client references, where appropriate.)

Language:

(Indicate proficiency in speaking, reading and writing of each language by 'excellent', 'good' or 'poor').

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any willful mis-statement described herein may lead to disqualification of the firm.

.....

Signature of the Team Member

Name & Designation

.....

Signature of Authorized Person
Name, Designation & Company seal

Date:

Place:

On Company's Letter Head

Bidder's Name & Address

To,
Executive Vice President,
PFC Consulting Limited
(a subsidiary of PFC Ltd.)
9th Floor, A-Wing, Statesman House,
Connaught Place, New Delhi – 110001

Dear Sir,

We hereby declare that following equipment/instruments shall be used to carry out the scope of services as contained in the Technical specification and Bid Documents for Consultancy Service Package for Survey and Preparation of Report for transmission system for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”** as outlined in your tender documents. We also furnish the area wise deployment as well as the source of such equipment/instruments required to carry out 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. The Owner shall not have any liability in this regard.

S. No.	Name and Purpose of Equipment/ Instrument	Source of availability of Equipment/ Instrument	Remarks
--------	---	---	---------

Note: - The successful bidder must submit the calibration certificate of above proposed instruments/equipment from Appropriate Authority within 15 days of issuance of LoA.

Date:

Place:

Signature of Authorized Person
 Name, Designation & Company seal

AUTHORISATION LETTER

(ON THE LETTER HEAD OF THE ORGANIZATION/FIRM)

I _____ certify that I am _____ of the Organization, organized under the laws of _____ and that _____ who signed the above Proposal is authorized to bind the organization by authority of its governing body.

Signature:

Full Name:

Address:

(Company Seal)

PFC CONSULTING LIMITED

**(A wholly owned subsidiary of Power Finance Corporation Ltd. -
A Government of India Undertaking)**



VOLUME – II

CONDITION OF CONTRACT

Survey & Preparation of Report for Transmission System for Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”

Using Modern Survey Techniques

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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 “PFCCL” or Client” shall mean PFC Consulting Limited, New Delhi, India (a wholly owned subsidiary of Power Finance Corporation Ltd.) and shall include their legal representatives, successors and permitted assigns.
- 1.3 “Project-in-Charge” 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.
- 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” or “Report” will mean the final report or document prepared by the successful Bidder as per Owner’s Specification.
- 1.12 “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.

- 1.13 “Month” shall mean calendar month.
- 1.14 “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 Project-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 the Owner and acceptance of the reports by the concerned statutory Authorities, Government of India and upon certification by the Project-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 120 days from the date of submission of bid.

3.0 CURRENCY OF BID

The price quoted should be in Indian Rupees and all payments shall be made in Indian Rupees.

4.0 BID DOCUMENT

- 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 PFCCL does not bind themselves to accept the lowest or any offer or to give reasons for their decision. PFCCL reserves the right to reject any or all offers without assigning any reason.

5.0 CONTRACT PERFORMANCE GUARANTEE

The successful bidder, within fifteen (15) days of from the date of Letter of Award, 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 provided by the Owner and should be kept valid up to nine (9) months from the date of Letter of Award.

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, Owner 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 and 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 SIGNATURE 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 Bidder's name stated on the proposal shall be the exact legal name of the firm.
- 8.6 Erasures or other changes in the offer shall be over the initials of the person signing the bid.
- 8.7 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. 13.0 (Terms of Payment) of the Bid Invitation, on stage-wise completion of the services including submission of the Deliverables and subject to acceptance, approval and certification by the Project-in-Charge.

9.1 PROCEDURE OF PAYMENT

All the invoices of payment shall be supported by necessary documents and submitted in triplicate for the certification of Project-in-Charge of which he will require a maximum time of seven (7) days before the same are submitted for processing the payment within thirty (30) days of certification of the Project-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 Project-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 Project-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 Project-in-Charge. The invoice for the balance amount under question shall be separately submitted for future consideration of the Owner.

10.0 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 Owner, 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.

11.0 TAXES, DUTIES AND INSURANCE

All taxes (including professional tax, etc. as applicable but excluding Goods and Services Tax), 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. Owner 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.

12.0 PATENT

- 12.1 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.
- 12.2 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.
- 12.3 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.

13.0 SETTLEMENT OF DISPUTE

- 13.1 Except as otherwise specifically provided in the Contract all disputes concerning questions of fact arising under the Contract shall be decided by the Project-in-Charge subject to a written appeal by the Consultant to the Project-in-Charge, whose decision shall be final to the parties hereto.
- 13.2 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.
- 13.3 If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration as provided in **ARBITRATION** clause.

14.0 ARBITRATION

- 14.1 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.

- 14.2 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.
- 14.3 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 the Owner.

15.0 TERMINATION ON DEFAULT:

- 15.1 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.
- 15.2 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.

16.0 TERMINATION FOR CONVENIENCE

- 16.1 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.
- 16.2 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.

17.0 TERMINATION FOR INSOLVENCY

- 17.1 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.

- 17.2** Upon termination of the contract at any time for whatever reason by the Owner 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 the Owner.
- 17.3** Following issuance by the Owner 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 the Owner in the manner, at the times and to the extent, if any, as directed by the Owner, 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 the Owner.

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.

18.0 SIGNING OF AGREEMENT

The authorized signatory of the Consultant shall be required to sign the contract agreement within ten (10) working days of issue of Letter of Award or within such extended time, as may be granted by the Owner as per the pro-forma provided by the Owner. The Agreement will be signed in two originals and the Consultant shall be provided with one signed original Agreement.

19.0 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.

20.0 SUSPENSION OF THE OBLIGATION

- 20.1** 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 21.0 or as the result of an agreement between the parties.
- 20.2** In the event of Force Majeure, neither of the parties may be considered in default of its obligations under the terms of the Specifications.

21.0 FORCE MAJEURE

- 21.1** Force Majeure is hereby defined as any cause which is beyond the control of the Consultant or Owner 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.

22.0 HANDLING OF DOCUMENTS

- 22.1** 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.
- 22.2** 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 the Owner under terms of the Contract or in performance thereof.
- 22.3** 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.
- 22.4** 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.

23.0 ABANDONMENT OF WORK

- 23.1 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.

24.0 SUB-CONTRACT

The consultant cannot assign or sub-contract any of this work without the prior written consent of the Owner.

25.0 LIMITATION OF LIABILITES

- 25.1 The Owner 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.
- 25.2 The Consultant and the Owner 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.

26.0 CHANGES/ADDITIONS/DELETIONS

- 26.1 The Owner 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, Owner 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.
- 26.2 The Owner 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 the Owner shall give to the Consultant a notice in writing on receipt of which the Consultant shall take necessary steps as may be directed by the Owner and shall stop incurring any expenditure and performing services in connection with the item/s of work so deleted.
- 26.3 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.

27.0 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.

28.0 INSTRUCTIONS AND NOTICES

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

29.0 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, the Owner shall be at liberty:

- a) 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.
- b) 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 the Owner.

30.0 PROGRESS REPORT

30.1 The Consultant shall prepare and submit to the Owner 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 the Owner. Draft formats of progress reports shall be enclosed by the Consultant with the offer.

30.2 It is understood that submission of such reports and reviews thereof by the Owner shall not be deemed to absolve the Consultant of his responsibility of timely completion of the Assignment as per the time schedule indicated herein.

31.0 METHODOLOGY OF EXECUTION OF ASSIGNMENT

- 31.1 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.
- 31.2 Regular review meetings will be held one in two (2) weeks either in the Owner's Office or Consultant's office in India 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.

32.0 CORRESPONDENCE AND CONTRACT COORDINATION ROCEDURE

- 32.2 All correspondence during the pre-award stage and during execution of the contract shall be made as per following procedure:-
- 32.3 On all technical matters pertaining to execution of the contract as per specification in the consultant shall directly interact with the Project-in-Charge.
- 32.4 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.

33.0 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.

34.0 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 the Owner 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.

35.0 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-3 the list of equipment proposed to be deployed for the study.

The Owner shall not make any additional payment for any type of equipment / accessories required by the consultant for this package or for any other purpose.

36.0 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.

37.0 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.

38.0 ASSOCIATION OF THE OWNER

The Owner may depute its representative to be present during the entire course of studies or any part thereof. The Project-in-Charge 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 the Owner's Project-in-Charge / Representatives to have fruitful participation in the work. The Consultant will submit all study results draft sections / documents to the Project-in-Charge for his approval and the final document will be prepared after incorporating changes / modifications / additions / alterations suggested by the Project-in-Charge.

39.0 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.

40.0 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.

41.0 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 asks 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.

42.0 TRAVEL EXPENSES

The travel expenses incurred by the Consultant's personnel for journeys to site or Owner's 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

43.0 ACCESS TO CONSULTANT'S OFFICE / WORK SITE

The authorized representative (s) of the Owner 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.

PFC CONSULTING LIMITED

**(A wholly owned subsidiary of Power Finance Corporation Ltd. -
A Government of India Undertaking)**



VOLUME – III

TECHNICAL SPECIFICATION

Survey & Preparation of Report for Transmission System for Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G” Using Modern Survey Techniques

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

1. General Information & Scope Of Work

- 1.1.** The technical specification covers survey including route alignment of transmission lines, identification of substation sites and preparation of report for transmission system for **Package - E “Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G”** comprising the following:

Sl. No.	Scope of the Transmission Scheme	Capacity/ Km
A.	Transmission System Strengthening Scheme for Evacuation of Power from Solar Energy Zones in Rajasthan (8.1 GW) under Phase-II Part-G	
1.	Establishment of 765/400 kV, 3X1500 MVA GIS substation at Narela with 765 kV (2x330 MVAR) bus reactor and 400 kV (1x125 MVAR) bus reactor Future provisions: Space for i. 765/400kV ICTs along with bays: 1 ii. 765 kV line bays along with switchable line reactor: 6 iii. 400 kV line bays: 6+4 iv. 765kV reactor along with bays: 2 v. 400/220 kV ICTs along with bays: 8 vi. 220 kV line bays: 12 vii. 400 kV bus reactor along with bays: 2	765/400 kV, 1500 MVA ICT - 3 765/400 kV, 500 MVA spare ICT (1-phase) - 1 765 kV ICT bays - 3 400 kV ICT bays - 3 765 kV line bays- 4 (GIS) 330MVAR, 765 kV bus reactor - 2 765 kV bus reactor bay -2 110 MVAR, 765 kV, 1- Ph Bus Reactor (spare unit) -1 125 MVAR, 420 kV bus reactor - 1 420 kV bus reactor bay -1 330 MVAR, 765 kV line reactor-2 Switching equipment for 765 kV reactor - 2 (1x110MVAR spare reactor at Khetri to be used as spare for Khetri - Narela 765 kV D/c line)
2.	Khetri - Narela 765 kV D/c line 1x330MVAR Switchable line reactor for each circuit at Narela end of Khetri – Narela 765kV D/c line	Length - 180 KM
3.	2 nos. of 765 kV line bays at Khetri for Khetri – Narela 765 kV D/c line	765 kV line bays -2 (AIS)
4.	LILO of 765 kV Meerut – Bhiwani S/c line at Narela	Length – 25 KM
	Note: <i>(i) Developer of Khetri substation to provide space for 2 no of 765 kV bays at Khetri substation along with the space for 2 no of line reactors.</i>	

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

- a. Route Alignment using satellite imageries of NRSA and Survey of India maps (to be arranged by the Consultant) to the extent required, inter-alia including :-
 - i. Identification of three alternative route alignments & selection of optimized 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 digitized 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 route alignment (finalized in consultation with the Owner).
 - iv. Preparation of Survey Report including 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, various clearances required in the final route alignment, etc.
- b. The scope shall also include three dimensional perspectives for terrain characteristics for the purpose of selection of appropriate route alignment.
- c. Preparation of Survey Report incorporating the details as per **Annexure-A**
- d. Initiation of any forest clearance based on walk over survey of final route alignment, including filing of application and follow-up/co-ordination with the concerned Authorities.
- e. Estimation of the land required for substation in Narela considering the scope of the substations specified at Clause 1.1 above including provision of staff quarter and other substation auxiliaries. Identification of three alternative of sites for the substation as detailed in Clause 4.0 hereinafter and assist in Land acquisition including filing of application and follow-up/co-ordination with the concerned Authorities
- f. Initiation of land acquisition for substation including preparation & filing of application and follow-up/co-ordination with the concerned Authorities.
- g. Preparation of alternative site identification Report incorporating the details as per **Annexure-B**
- h. The scope of the survey consultant also includes preparation of tower schedule, tower location & cost of land and details of line passing through agriculture, semi urban and urban area in-order to have a fair estimation of compensation as per the guidelines "Payment of compensation towards damages in regard to Right of Way

for transmission lines” issued by Ministry of Power, Govt. of India vide dated 15.10.2015.

- 1.2.** The quantities indicated in the scope of work are provisional. The final quantities for route alignment & survey (quantities in “km” unit) shall be the route length along the optimized route alignment. The route alignment shall be carried out by the Consultant as per the technical specifications stipulated herein.
- 1.3.** The Consultant must note that the Owner shall not be responsible for loss or damage to properties, trees etc. due to Consultant’s work during survey. The Consultant shall indemnify the Owner for any loss or damage to properties, trees etc. during the survey work.
- 1.4.** The Consultant 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 Consultant 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 software 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 for successful completion of the scope of work shall be deemed to be included in the scope of the Consultant, 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 clarification, they may contact PFCCL at the following address:

**Vice President,
PFC Consulting Limited,
9th Floor, A-Wing, Statesman House,
Connaught Place, New Delhi-110001
Email: sanjaynayak@pfcindia.com
Ph.: (011) 23443996, Fax: (011) 23443990**

2.0 Route Alignment

- 2.1** 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 Consultant. The Consultant 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 problem 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 Nallah 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 is 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 Consultant shall also carryout reconnaissance/preliminary survey as may be required for verification & collection of additional information /data /details.
- 2.2.18 The Consultant shall submit his preliminary observations & suggestions along with 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 Consultant and optimal route alignment shall be proposed by the Consultant.
- 2.2.19 Digital terrain modelling using contour data from topographical maps as well as processed satellite data shall be done by the Consultant 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 Consultant for the proposed route alignment.
- 2.2.20 Final digitized route alignment drawing with latest topographical and other details/features including all rivers, railway lines, canals, roads etc. up to 8 kms on both sides of selected route alignment shall be submitted by the Consultant for Owner's approval along with report containing other information/details as mentioned above.
- 2.2.21 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 PFC markings.

3.0 Tower Scheduling

- 3.1 The following shall be borne in mind

a) Span

The maximum length of a section shall not exceed 5 km in plain terrain and 3 km 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 350m for 220kV lines, 400m for 400kV lines and 450m for 765kV lines.

b) Right of way

The Right of way corridor shall be considered as 35m for 220kV lines, 46m for 400kV lines and 70m for 765kV lines.

c) 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.

d) Railway Crossings

All the railway crossings coming-enroute the transmission line shall be identified by the Consultant.

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

e) 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).

f) 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 up to 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:

S. 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 towers shall be provided on either side of DA/A type tower to act as temporary dead end towers with proper guying.

g) Telecommunication Line Crossings

The angle of crossing shall be as near to 90 degree 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 up to date

- 3.2.1 The Consultant 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 locations 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 Consultant 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 Consultant 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.

4.0 Sub Stations

- 4.1 Estimation of the land required for the substation in Narela considering the scope of the substations specified at Clause 1.1 above including provision of staff quarter and other substation auxiliaries. Identification of three alternative of sites for the substation as detailed in Clause 4.0 hereinafter and assist in Land acquisition including filing of application and follow-up/co-ordination with the concerned Authorities. 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. The details as per Annexure-B shall be furnished for the proposed alternative sites of the sub-station.

5.0 Statutory Regulations and Standards

5.1 Statutory Regulations

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

regulations referred in this Specification.

6.0 Completion Period

The work as detailed in this specification shall be completed in all respects as per schedules detailed below:

- a. Submission of alternative Route Alignment for Transmission Line and finalization of Route Alignment for Transmission Line and Estimation of land requirement and identification of alternative sites for substation as per Annexure-A & Annexure-B in consultation with the Owner within **one (1) week** from the date of LoA.
- b. Walk over survey of the optimized route and submission of Draft Reports (three copies) including the details of the substations and incorporating details as per Annexure-A & Annexure-B within **two (2) weeks** from the date of LoA.
- c. The consultant shall submit ten (10) copies of final report, both in soft and hard copies, in English language within **four (4) weeks** from the date of the Letter of Award (LoA).
- d. following activities till the award of work to Transmission Service Provider
 - i. Initiation of forest clearances, including preparation & filing of application and follow-up/co-ordination with the concerned Authorities.
 - ii. Initiation of land acquisition for substation including preparation & filing of application and follow-up/co-ordination with the concerned Authorities.

Content of Work for Report

Description
<ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 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. Defense installation e. Railway Crossings f. Power Line / Telecom Line Crossings g. Land Availability (if required for acquisition) <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> i. Forest Involvement / Clearance ii. Social Issue / R&R Measure 7. DETAILS RELATED TO THE SUBSTATION <ol style="list-style-type: none"> a. Location Details <ol style="list-style-type: none"> i. State/District/Village ii. Longitude & Latitude iii. Nearest town & distance, nearby industries (cement, power etc) b. Approach to Site <ol style="list-style-type: none"> 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

Information Required for Substation Sites

S.N.	Criterion	Site-I	Site-II	Site-III	Remarks
1.0	Land				
1.1	Size (Acre) (Mtr x Mtr)				
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				