



आईआरईएल (इंडिया) लिमिटेड IREL (India) Ltd

(पूर्व में इंडियन रेअर अर्थ्स लिमिटेड Formerly Indian Rare Earths Ltd.)

रेअर अर्थ्स प्रभाग Rare Earths Division,

उद्योगमंडल Udyogamandal, कोची Kochi-683501

CIN: U15100MH1950GOI8187

(ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 certified Company)

Phones: +91 484 2545062 - 65 Fax: +91 484 2545269,

email: purchase-red@irel.co.in



ISO 9001:2015,

ISO 14001:2015 &
OHSAS 18001:2007

NOTICE INVITING TO TENDER

**Public Tender Document for Supply, installation and
commissioning of 60 Kwp Solar Power Plant at IREL (India)
Ltd, RED, Udyogamandal**

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| E-Tender No. | IREL/Udyogamandal/20-21/ET/8 | Dated: 28/05/2020 |
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SCHEDULE OF TENDER (SOT)

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| a. | E-Tender No. / Date | IREL/Udyogamandal/20-21/ET/8 Dated:28/05/2020 |
| b. | MODE OF TENDER | e-Procurement System Online Part I - Techno-Commercial Bid and Part II - Price Bid through http://www.mstcecommerce.com/eprochome/irel of MSTC Ltd. |
| c. | Date of NIT available to parties to download | 28/05/2020 |
| d. | Transaction Fee to MSTC: <i>Note: Please note that Bidders should make On-line payment for Transaction fee by Net banking/Credit card/Debit card in favour of MSTC Limited, Kolkata, through a link "Transaction Fee Payment" and select the e-tender to make the payment. System will display the transaction fee for the selected e- tender.</i> | Rs.2250/- (Plus 18% GST Extra) Payment of Transaction fee by NEFT in favour of MSTC LIMITED (refer clause. No. 4 of Annexure-I) Transaction fee remitted by the bidder will be refunded by IREL after opening bid. Bank details of bidder shall be uploaded for refund. |
| e. | TDC to IREL | Rs.560/- (Details as per Annexure - II) |
| f. | EMD to IREL | Rs.45,000/- (Details as per Annexure - II) |
| g. | Date of Starting of e-Tender for submission of on line Techno-Commercial Bid and price Bid at www.mstcecommerce.com/eprochome/irel | 28/05/2020 - 15.00 HRS |
| h. | Date of closing of online e-tender for submission of Techno-Commercial Bid & Price Bid. | 22/06/2020 - 17.00 HRS |
| i. | Date & time of opening of Part-I : (i.e. Techno-Commercial Bid) Part-II Price Bid: Date of opening of Part II i.e. price bid shall be informed separately | 23/06/2020 - 10.00 HRS |
| j. | Validity of Tender | 90 days from the date of opening of Techno-Commercial bid. |

List of Annexures

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| 1 | Important Instructions | Annexure - I |
| 2 | Instructions to Tenderers | Annexure - II |
| 3 | PRE QUALIFICATION CRITERIA | Annexure - III |
| 4 | General Conditions of Contract & Undertaking | Annexure -IV |
| 5 | Special conditions of contract (Scope, Technical Specification, Payment terms, etc.,) | Annexure - V |
| 6 | Bill of Quantities | Annexure - VI |
| 7 | Techno- Commercial Terms For Tenderer's Response | Annexure - VII |
| 8 | IREL (India) Ltd Bank Details | Annexure - VIII |

Important instructions

This is an e-procurement event of IREL, Udyogamandal. The e-procurement service provider is MSTC Ltd., 225C, A.J.C. Bose Road, Kolkata-700 020.

You are requested to read the terms & conditions of this tender before submitting your online tender. Tenderers who do not comply with the conditions with documentary proof (wherever required) will not qualify in the Tender for opening of price bid.

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| 1. | <p>Process of E-tender :</p> <p>A) Registration: The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type digital certificate. Vendors are to make their own arrangement for bidding from a P.C. connected with Internet. MSTC/ IREL is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature).</p> <p>SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT www.mstcecommerce.com/eprochome/irel</p> <p>1). Vendors are required to register themselves online with www.mstcecommerce.com → e-Procurement → PSU/ Govt depts. → IREL → Register as Vendor Filling up details and creating own user id and password → Submit.</p> <p>2). Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form.</p> <p>In case of any clarification, please contact MSTC/IREL, (before the scheduled time of the e-tender).</p> <p style="text-align: center;">Contact person (MSTC):</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">1. Shri. Arnab Sarkar</td><td style="width: 50%;">2) Shri. Ravindranath KB</td></tr> <tr> <td>Mobile no: 09986036012</td><td>Mobile no : 07676456095</td></tr> <tr> <td>080-22260054 ext 208</td><td>080-22260054 ext 205</td></tr> <tr> <td>Email: asarkar@mstcindia.co.in</td><td>email: ravindranathkb@mstcindia.co.in</td></tr> </table> <p style="text-align: center;">Contact person (IREL (India) Ltd):</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">For Commercial clarification</td><td style="width: 50%;">For Technical Clarification</td></tr> <tr> <td>Mr. C.R MOHANTY</td><td>K A JOSHY</td></tr> <tr> <td>CM (PURCHASE)</td><td>DM (ELECTRICAL)</td></tr> <tr> <td>Tel No. 0484- 2545199</td><td>Mob No:7593880813</td></tr> <tr> <td>Email : purchase-red@irel.co.in</td><td>Email: maintred@gmail.com</td></tr> </table> | 1. Shri. Arnab Sarkar | 2) Shri. Ravindranath KB | Mobile no: 09986036012 | Mobile no : 07676456095 | 080-22260054 ext 208 | 080-22260054 ext 205 | Email: asarkar@mstcindia.co.in | email: ravindranathkb@mstcindia.co.in | For Commercial clarification | For Technical Clarification | Mr. C.R MOHANTY | K A JOSHY | CM (PURCHASE) | DM (ELECTRICAL) | Tel No. 0484- 2545199 | Mob No:7593880813 | Email : purchase-red@irel.co.in | Email: maintred@gmail.com |
| 1. Shri. Arnab Sarkar | 2) Shri. Ravindranath KB | | | | | | | | | | | | | | | | | | |
| Mobile no: 09986036012 | Mobile no : 07676456095 | | | | | | | | | | | | | | | | | | |
| 080-22260054 ext 208 | 080-22260054 ext 205 | | | | | | | | | | | | | | | | | | |
| Email: asarkar@mstcindia.co.in | email: ravindranathkb@mstcindia.co.in | | | | | | | | | | | | | | | | | | |
| For Commercial clarification | For Technical Clarification | | | | | | | | | | | | | | | | | | |
| Mr. C.R MOHANTY | K A JOSHY | | | | | | | | | | | | | | | | | | |
| CM (PURCHASE) | DM (ELECTRICAL) | | | | | | | | | | | | | | | | | | |
| Tel No. 0484- 2545199 | Mob No:7593880813 | | | | | | | | | | | | | | | | | | |
| Email : purchase-red@irel.co.in | Email: maintred@gmail.com | | | | | | | | | | | | | | | | | | |

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| | <p>B) System Requirement:</p> <ul style="list-style-type: none"> i) Windows 98 /XP-SP3 & above/Windows 7 Operating System ii) IE-7 and above Internet browser. iii) class 3 Signing type digital signature iv) JRE 7 update 79 and above software to be downloaded and installed in the system. <p>To enable ALL active X controls and disable 'use pop up blocker' under Tools→Internet Options→ custom level</p> |
| 2. | <p>(A) Part I Techno-Commercial bid will be opened electronically on specified date and time as given in the NIT. Bidder(s) can witness electronic opening of bid.</p> <p>(B) Part II Price bid will be opened electronically of only those bidder(s) whose Part I Techno-Commercial Bid is found to be Techno-Commercially acceptable by IREL, UDL. Such bidder(s) will be intimated date of opening of Part II Price bid, through valid email confirmed by them.</p> <p><u>Note:</u></p> <p>The tenderers are advised to offer their best possible rates. There would generally be no negotiations hence please submit your most competitive prices while submitting the price bid. However in case the lowest rate appears to be reasonable taking into account the prevailing market conditions, the order may be awarded to the lowest bidder and if the rate is still considered high, action as per prevailing instruction/guideline shall be taken.</p> |
| 3. | <p>All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.</p> |
| 4. | <p><u>Special Note towards Transaction fee:</u></p> <p><i>Bidders should make On-line payment for Transaction fee by Net banking/ Credit card/Debit card in favourof MSTC Limited, Kolkata, through a link "Transaction Fee Payment" and select the e-tender to make the payment. System will display the transaction fee for the selected e tender.</i></p> <p>Transaction fee remitted by the bidder will be refunded by IREL after opening bid.</p> <p>Contact Details :</p> <p>Fax No. : 033- 22831002</p> <p>Email ids: sanjibpoddar@mstcindia.co.in, arindam@mstcindia.co.in, rpradhan@mstcindia.co.in, smukherjee@mstcindia.co.in.</p> <p>Bidders may please note that the transaction fee should be deposited by debiting the account of the bidder only; transaction fee deposited from or by debiting any other party's account will not be accepted.</p> <p>In case of failure to make payment towards Transaction fee for any reason, the vendor, in term, will not have the access to online e-tender.</p> |

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| 5. | <p>Vendors are instructed to use Upload Documents link in My menu to upload documents in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB.</p> <p>Once documents are uploaded in the library, vendors need to attach documents through Attach Document link against the particular tender. For further assistance please follow instructions of vendor guide.</p> |
| 6. | <p>All notices and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by IREL as well as by MSTC (e-procurement service provider). Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with MSTC (i.e. Service Provider). Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).</p> |
| 7. | <p>(i) Please note that there is no provision to take out the list of parties downloading the tender document from the web site mentioned in NIT. As such, bidders are requested to see the web site once again before the due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related corrigenda, if any, will be that of the Bidders.</p> <p>(ii) No separate intimation in respect of corrigendum to this NIT (if any) will be sent to tenderer (s) who have downloaded the documents from web site. Please see website www.mstcecommerce.com/eprohome/irel of MSTC Ltd.</p> |
| 8 | <p>E-tender cannot be accessed after the due date and time mentioned in NIT.</p> |
| 9. | <p><u>Bidding in e-tender & Reverse auction:</u></p> <ol style="list-style-type: none"> Bidder(s) need to submit necessary EMD (or necessary certificate for exemption of EMD as described in NIT) and Transaction fees to be eligible to bid online in the e-tender. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by IREL. The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid. The bidder(s) who have submitted the above fees (or necessary certificate for exemption of EMD as described in NIT) can only submit their Techno Commercial Bids and Price Bid through internet in MSTC website www.mstcecommerce.com → e-procurement → PSU/GovtDepts → IREL Login → My menu → Auction Floor Manager → live event → Selection of the live event → The bidder should allow to run an application namely enApple by accepting the risk and clicking on run. This exercise has to be done twice immediately after clicking on the Techno-Commercial bid. If this application is not run then the bidder will not be able to save/submit his bid. After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to filled up and then bidder should click on "save" to record their price bid. Then once both the Techno-Commercial bid & price bid has been saved, the bidder can click on the "Submit" button to register their bid In all cases, bidder should use their own ID and Password along with Digital Signature |

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| | <p>at the time of submission of their bid.</p> <p>7. During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.</p> <p>8. The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.</p> <p>9. All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter SUPPLIER.</p> <p>10. It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system.</p> <p>11. Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.</p> <p>12. No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the tender.</p> <p>13. Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.</p> |
| 10. | Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein. |
| 11. | No deviation to the technical and commercial terms & conditions are allowed. |
| 12. | After submitting online bid, the bidder cannot access the tender, once it has been submitted with digital signature |
| 13. | IREL, UDL has the right to cancel this e-tender or extend the due date of receipt of bid(s) without assigning any reason thereof. |
| 14. | The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website www.mstcecommerce.com/eprochome/irel of MSTC Ltd. |
| 15. | The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered. |
| 16. | The bid will be evaluated based on the filled-in technical & commercial formats. |
| 17. | The documents uploaded by bidder(s) will be scrutinized. In case any of the information furnished by the bidder is found to be false during scrutiny, EMD of defaulting bidder(s) will be forfeited. Punitive action including suspension and banning of business can also be taken against defaulting bidders. |

INSTRUCTIONS TO TENDERERS.

1. TECHNO COMMERCIAL BID: All the tender terms & conditions to be agreed. Bidder should not display the price in the Techno-Commercial bid
2. PRICE BID: shall contain only the **Price**.
3. LAST DATE FOR SUBMISSION OF TENDER: 22/06/2020 17:00hrs. (IST).
IREL (India) Ltd may at its sole discretion reserves the right to extend the date for receipt of Bid. Bid received after the aforesaid time and date or the extended time and date, if any, shall not be Considered for evaluation.
4. VALIDITY OF BID: 90 days from the date of opening of techno-commercial bid
5. ACCEPTANCE OF TENDER:
IREL (India) Ltd reserves the right to accept or reject the tender without assigning any reasons and does not bind themselves to accept the lowest offer.
6. AMENDMENTS
 - i) At any time, prior to the last date for submission of tenders, IREL (India) Ltd reserves the right to amend and modify the tender document and the same may be intimated by issuing corrigendum.
 - ii) The amendment so carried out shall form part of the main tender and shall be binding upon the Tenderers. IREL (India) Ltd may at their discretion, extend the last date for submission of the Bid, to enable the Bidders to have reasonable time to submit their Bid after taking into consideration such amendments.
7. CONTRACT PRICE:
The Tenderer shall fill up the appropriate price Schedules against Price schedule as detailed below included herein, stating the Deliverables to be supplied under the contract. Prices quoted by the Tenderer shall be firm, fixed and valid till completion of the contract and will not be subject to variation on any account. In case of any discrepancy between the rate and amount, the arte will be govern and between figures and words, word will prevail. The decision of Competent Authority in this regard shall be final and binding on all parties.
8. **EVALUATION AND AWARD OF CONTRACT**
Contract will be awarded to technically and commercially qualified bidder with lowest price (L1). Cost net of tax benefits to IREL (India) Ltd will be considered for evaluation of L1.
9. **TENDER DOCUMENT COST (TDC)**
Bidders have to remit Rs.560/- (Rupees Five Hundred and Sixty only) towards Tender Document Cost by NEFT/DD/BC/BG in favour of M/s. IREL (India) Ltd drawn on any Scheduled / Nationalised Bank payable at Udyogamandal. IREL Bank details is attached in Annexure-IX. Necessary proof for the remittance shall be uploaded along with submission of offers. Tender Document Cost is non refundable and no exemption will be entertained for the payment of TDC except those bidders who downloaded the tender document from published portal.

In case of Govt. body/Public Sector Undertakings tender documents may be issued free of cost subject to approval of competent authority.

Tender document cost shall be exempted to MSEs as per prevailing guidelines in this regard subject to production of valid registration certificate. Parties eligible for exemption from paying TDC may submit scanned copy of relevant document during submission of tender.

10. EARNEST MONEY DEPOSIT (EMD):

You have to remit Rs.45,000/- (Rupees Forty Five Thousand only) towards Earnest Money Deposit by NEFT/DD/BC in favour of M/s IREL (India) Ltd. drawn on any Scheduled / Nationalised Bank payable at Udyogamandal. NEFT Details as per Annexure-IX. EMD if remitted by NEFT, provide UTR No. with bank details. If payment is not through RTGS /NEFT, scanned copy of DD/BG/BC shall be attached during submission of tender and original shall be sent to IREL so as the same reaches IREL before the due date of opening of Tender, or else Offer shall not be considered for evaluation. No interest is payable on EMD.

In case where the EMD provided in form of BG in the prescribed format attached with the tender, the BG shall be obtained from a scheduled Bank.
The EMD will be forfeited if

- (1) the tenderer changes the terms and conditions or prices or withdraws his quotation subsequent to the date of opening or
- (2) the tenderer fails to accept the order when placed or fails to commence supplies/works after accepting the order.

EMD shall be refunded to unsuccessful tenderers, within 30 days of placement of order on the successful tenderer. EMD shall be refunded to the successful tenderer on remittance of full Security Deposit amount. The EMD may be adjusted against security deposit of the successful bidder.

PRE QUALIFICATION CRITERIA

1. Bidders should meet the following pre-qualification criteria:

1.1 TECHNICAL:

Bidder should have experience of similar supplies means supply, installation and commissioning of Solar power plant to any Govt. organization/PSU/reputed Private organization/Public entity during last seven years ending 30.04.2020. Bidders shall submit documentary evidence like copy of PO/WO and completion certificate/invoices any one of the followings.

1. Three similar completed supply each should have at least 24kWp capacity.
2. Two similar completed supply each should have at least 30kWp capacity.
3. One similar completed supply should have 48kWp capacity.

1.2 FINANCIAL:

Bidder should submit Average annual financial turn over during the last 3 years, ending 31st March 2019 should be at least Rs.16.5 Lakhs. Submit financial standing through latest audited Annual report containing balance sheet and statement of P/L account.

1.3 OTHER ELIGIBILITY CRITERIA:

- a. The bidder must be manufacturer or their authorized dealer approved by MNRE.
- b. The bidder must be in possession of the valid test certificates of Solar PV module and Power Conditioning Unit/Inverter from MNRE/IEC authorized test laboratory.
- c. The bidder must not have been debarred / blacklisted by any Govt.Dept., agency, PSUs / institution /agencies / autonomous organisations. The bidder shall submit a self-certification by an authorized person duly notarized to this effect. Documents against the Pre-qualification criteria as above complete in all respect must be uploaded. Failure to compliance of above shall make the bid incomplete and as such it shall be rejected.

The offers of the bidders who have defaulted in the past in execution of the contracts or in complying with the obligations as per the contract shall not be considered.

GENERAL CONDITIONS OF THE CONTRACT (GCOC)

This document shall accompany and be a part of the tender. General conditions of procurement shall include the following clauses:

- 1 **Definition of Terms:** In the contract (as hereinafter defined) the following words, definitions and expressions shall have the meanings hereby assigned to them. Except where the context otherwise requires.
 - 1.1 **Purchaser/Company/contractee/IREL (India) Ltd**
The 'Purchaser/Company/contractee/IREL' shall mean IREL (India) Limited, Rare Earths Division Unit incorporated under the companies act, 1913 and having its registered office at Plot No. 1207, opposite to Siddhi Vinayak Temple, Veer Savarkarmarg, Prabhadevi, Mumbai-400028.
 - 1.2 **Contractor/Supplier/tenderer/bidder**
The 'Contractor/Supplier/tenderer/bidder' shall mean the person or company whose tender is accepted by the Purchaser and shall be deemed to include the Contractor's successors, legal heirs, executors, administrators, representatives and permitted assignees.
 - 1.3 **Sub Contractor**
The 'Sub-contractor' shall mean the person or company named in the contract for any part of the work or any person to whom any part of the contract has been sub-let by the Contractor with the consent in writing of the Purchaser and shall include his legal heirs, executors, administrators, representatives and assignees approved by the Purchaser.
 - 1.4 **Contract:** **Contract shall** mean and include the Invitation to Tender, Instructions to Tenderers, General Conditions of Contract, Special Conditions of Contract, drawing specifications, Scope of Work, tender submitted by the Tenderer, including his price offer, Performance Guarantee Bond and other Bonds, Letter of Acceptance, Work/purchase/service/consultancy Order and the Contract and any communication having the effect of amendment of the contract, and the contract agreement.
 - 1.5 **Contract price** means the sum mentioned in the tender that has been accepted, subject to such additions thereto or deductions there from as may be made under the provisions of the contract.
 - 1.6 **Duration of Contract** means the period stipulated in the contract or work order and includes any extended period thereof, if any made by a written communication.
 - 1.7 **Officer-in-Charge (OIC)/ Engineer-in-Charge (EIC):** The term "Officer-in-Charge (OIC)/ Engineer-in-Charge (EIC)" as used herein shall mean officer or engineer as designated by IREL (India) Ltd.
 - 1.8 **Representative** of Officer-in-Charge (OIC)/ Engineer-in-Charge (EIC) means any assistant of the officer /Engineer appointed from time to time by IREL (India) Ltd to perform the duties of OIC/EIC.
 - 1.9 **Terms & Conditions** means the Special Conditions of Contract and General Conditions of Contract herein mentioned and other stipulations incorporated in any part of Tender Document and /or Agreement.
 - 1.10 **Tender Specification**
The term "Tender Specification" shall mean the design data, drawing schedules, broad equipment characteristics and other technical details furnished with the invitation to tender for the purpose of submitting the offer by the tenderer.

- 1.11 **Contract Specification:** The term "Contract Specification" shall mean the schedules, detailed designs, statements of technical data, performance characteristics and all such particulars mentioned as such in the contract.
- 1.12 **Letter of Intent (LOI):** The term "Letter of Intent (LOI)" shall mean intimation by a letter to successful tenderer that the tender has been accepted in accordance with the provisions contained in that letter.
- 1.13 **Site:** The term "Site" shall mean the place or places envisaged by IREL(India) Ltd at which the plant and equipment supplied under the contract are to be erected and/or services/works/consultancy are to be performed under the contract.

2 **OFFICER-IN-CHARGE(OIC)/ENGINEER-IN-CHARGE(EIC):**

The Officer/ Engineer-in-charge shall have authority for

- General supervision, Follow up of supply and direction of the work
- direction to stop the work whenever such stoppage may be necessary to ensure the proper execution of the Contract
- to reject all works and materials which do not conform to the contract

The OIC/EIC shall have neither any authority to relieve the contractor of any of his duties / obligations under the contract nor ordering any work involving delay or any extra payment by IREL (India) Ltd or making any variation of or in the work except otherwise expressly provided here-in-under or elsewhere in the contract.

3 **CONFLICT AND INTERPRETATION OF DOCUMENTS:**

- 3.1 Words imparting the singular only also include the plural and vice versa where the context requires; words imparting persons include firms or corporations and vice versa where the context requires.
- 3.2 Word imparting masculine gender includes the feminine gender and vice versa where the context so requires.
- 3.3 The several documents forming the contract are to be taken as mutually explanatory of one another.
- 3.4 In case conflicting statements or directives should occur among the contract documents, it shall be the responsibility of the successful bidder to notify IREL (India) Ltd, with a copy sent concurrently to the OIC/EIC, immediately in writing and obtain instructions from IREL (India) Ltd to eliminate the conflict.
- 3.5 The successful bidder shall notify IREL (India) Ltd, with a copy sent concurrently to the EIC/OIC, promptly of any discrepancies, omissions or doubts it may have, regarding drawings, specifications or other documents. Noted or calculated dimensions shall always be followed
- 3.6 In the event of conflict between various documents forming the contract, the relevant terms and conditions of the work/purchase/service/consultancy order shall prevail over those of all such other documents forming the contract and binding on the contractor and IREL (India) Ltd.
- 3.7 In case of conflict between the General Conditions of contract and the Special Conditions of the contract, the Special Conditions of contract shall prevail.

4 **Standards**

The Machinery, Material, works, Services, etc. supplied under this Contract shall conform to the standards mentioned in the Technical Specifications and, when no applicable standard is mentioned, the latest current edition or revision of the relevant Indian Standards and Codes shall be considered.

- 5 **Scope of Order and Specifications**
Contractor shall supply the material or execute the work according to the specifications enclosed and in accordance with all conditions both general and specific enclosed with work / purchase/service/consultancy order, unless any or all of them have been modified or cancelled in writing either as a whole or in part by IREL (India) Ltd.
- 6 **Inspection of site**
The bidders are advised to inspect the site before submitting their offers. Interested bidders can inspect the site on any working days at our specified visiting hours with the permission of Engineer concerned of Maintenance Section. The bidders are also advised to study the labour supply/availability, trade union practices and labour rates prevailing at Udyogamandal.
- 7 **Assignment and Subletting**
7.1 The contractor shall not assign, sublet or transfer the contract or any part thereof or any benefit or interest therein or there under without the written consent of IREL(India) Ltd.
7.2 The contractor shall not sublet the whole or any part of the work without the written consent of IREL (India) Ltd and such consent, if given, shall not establish any contractual relationship between the sub-contractor(s) and IREL (India) Ltd and shall not relieve the contractor of any responsibility, liability, or obligations under the contract and the contractor shall be responsible for the acts, defaults or neglects of any sub-contractor or his agent or workmen.
- 8 **Prices**
Unless otherwise agreed to specifically in order, the price payable by IREL (India) Ltd to the contractor under the order shall remain firm throughout the period of contract. The Bidder shall include in his tender all items of equipment/system etc. as stated in the Technical specifications of the tender. The prices shall be itemized in accordance with the Price bid Schedule attached with the tender and the Bidder quoted for all items as per Price bid format will only be considered for opening the price bid. The Contractor is responsible and liable for remitting all statutory dues collected / included in the Price schedule of the contract to the statutory authorities without fail. IREL (India) Ltd is not responsible for remittance of such statutory liabilities of the contractor.
- 9 **Taxes, duties & levies**
Bidders must clearly mention their Tax Registrations, wherever applicable in their offers and invoices. Tax shall be clearly mentioned in the offer indicating the applicable rates, otherwise it shall be considered to be inclusive of tax, as applicable. In order to enable IREL (India) Ltd to avail tax benefits, the contractor shall ensure submission of Tax invoice as per the prescribed formats by the statutory authorities. In case the Supplier fails to submit the requisite documents, the amount on account of duties/ taxes, levies as indicated in his quotation/invoice / Work order/Contract shall not be paid.
- 10 **Security Deposit (SD):**
The successful tenderer is required to furnish Demand Draft (DD) / Banker's Cheque (BC) / Bank Guarantee/NEFT in favour of IREL (India) Ltd., RED for an amount equivalent to five (5) per cent of the contract value towards Security Deposit (SD) towards the satisfactory performance of the contract, within 15 (fifteen) days of the receipt of the letter of acceptance or before commencement of work at site whichever is earlier. The Security Deposit (SD) shall not bear any interest.
- 11 **The SD** shall stand forfeited in favour of IREL (India) Ltd, without any further notice to the contractor in the following circumstances:
i. In case of any failure whatsoever on the part of the contractor at any time during performance of his part of the contract including the extended periods of contract, where notice is given and time for rectification allowed.
ii. If the contractor indulges at any time in any subletting/ sub-contracting of any portion of the work without approval of IREL (India) Ltd.

12. **Liquidated Damages (LD)**
- 12.1 Liquidated Damages (LD) shall be levied where reasons are attributable to supplier /contractors for delays in execution of purchase order/ contract. LD shall be levied @0.5% per week or part thereof on the value of unfinished supply/work order for each week of delay subject to a maximum of 5% of the total value of contract.
- 12.2 Wherever the supply/work is on turnkey or having a bearing in commissioning and performance of the system in total, LD is to be imposed on total value, in such cases.
- 12.3 If separate period of completion is specified for certain item of work or group of items of work, at the time of issuing the order, the LD can be levied on the total value of item of work or group of items of work which are completed beyond the agreed contract period.
- 13 **FORCE MAJEURE:**
- 13.1 Force majeure is an event beyond the control of supplier/contractor and not involving the supplier's/contractor's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to acts of the purchaser/contractor either in its sovereign or contractual capacity, wars or revolution, hostility, acts of public enemy, civil commotion, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts and freight embargoes or any other event which IREL (India) Ltd may deem fit to consider so. The decision about force majeure shall rest with IREL (India) Ltd which shall be final and binding. Force Majeure clause has to be compulsorily embedded in the order.
- 13.2 If there is delay in performance or other failures by the supplier/contractor to perform obligations under its contract due to event of a Force Majeure, the supplier/contractor shall not be held responsible for such delays/failures.
- 13.3 If a Force Majeure situation arises, the supplier/contractor shall promptly notify the purchaser in writing of such conditions and the cause thereof within fifteen days of occurrence of such event. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonable/practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
- 13.4 If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period of exceeding sixty days, IREL (India) Ltd may at its option terminate the contract without any financial repercussion on either side.
- 14 **Performance test**
- 14.1 The Contractor shall be responsible for carrying out performance tests on all equipment supplied by him and/or procured by the Purchaser as indicated in the Technical specifications covered in the Tender document, in the presence of the Purchaser's representative. This responsibility shall rest with the Contractor regardless of whether the erection has been carried out by him or any other agency.
- 14.2 On the satisfactory completion of the performance test, the Purchaser will issue an Acceptance certificate on written request from the Supplier.
- 14.3 The date of the acceptance certificate shall be considered to be the date of satisfactory completion of the performance test.
- 15 **Correspondence**
- All correspondence shall be in English and addressed to IREL (India) Ltd drawn to the attention of the officer issuing the order, unless otherwise specifically authorised.
- 16 **Accident or Injury to Workmen**
- The Contractor shall be solely liable for any accident or injury that may happen to any of his personnel engaged in the Contract. IREL (India) Ltd shall not be liable for, or in respect of, any damage or compensation payable at law in respect of, or in consequence of, any accident or injury to any personnel in the employment of the Contractor and the Contractor shall indemnify and keep indemnified IREL (India) Ltd against all such claims, damages, compensations and proceedings. The Contractor shall forthwith report to IREL (India) Ltd all

cases of accidents to any of his personnel and shall make every arrangement to render all possible assistance and aid to the victims of the accident.

17. Compliance with Statutory and Other Regulations

The Contractor shall, in all matters arising in the performance of the Contract, conform at his own expense to the provisions of all Central or State statutes, ordinances or laws and the rules, regulations, or bye-laws of any local or other duly constituted authority and shall keep the Purchaser indemnified against all penalties and liabilities of every kind for breach of any such statute, ordinance, law, rule regulations or bye-law. The Contractor shall give all notices and pay all fees and taxes required to be given or paid under any Central or State statutes, ordinances or other laws or any regulations or bye-laws of any local or other duly constituted authority in relation to the contract.

18 Security regulations

The Contractor shall abide by all the security regulations at site promulgated by IREL (India) Ltd from time to time. The Contractor shall provide identity badges for all his personnel, which must be properly displayed by them at site.

19 Method of black listing vendors

19.1 Any failure by the vendor to supply/execute the contract as per order may result in black listing of vendors by the authority competent to conclude the contract. The black listed vendor shall not be considered for a minimum period of one year from the date of black listing.

19.2 Further the competent authority may blacklist the bidder, if the bidder changes bid either techno-commercial and / or price or withdraw his bid after receipt of the same and during the validity period of bid.

19.3 Further, the vendor shall be banned from doing any business with IREL (India) Ltd in case of :

- a. If security considerations including question of loyalty to the state so warrant.
- b. If the proprietor of the firm, its partner or representative is convicted by a court of law following prosecution for offences relating to business dealings.
- c. If there is strong justification for believing that the proprietor or employee or representative of the firm has been guilty of malpractice such as bribery, corruption, fraud, substitution of tenders, interpolation, misrepresentation, evasion or habitual default in payment of any tax levied by law, etc.

19.4 An order for ban/ suspension passed for a certain specified period shall be deemed to have been automatically revoked on expiry of that specified period and it will not be necessary to issue a specific formal order of revocation, except that an order of suspension/ban passed on account of doubtful loyalty or security consideration shall continue to remain in force until it is specifically revoked.

19.5 An order of ban on grounds of conviction by Court of Law may be revoked if, in respect of the same facts, the accused has been wholly acquitted by a court of law.

20 Secrecy

The Contractor shall not at any time during the pendency of the contract or there after disclose any information furnished to them by IREL (India) Ltd or any drawings, designs, reports and other documents and information prepared by the Contractor for this contract, without the prior written approval of IREL (India) Ltd except in so far as such disclosure is necessary for the performance of the Contractor's work and service hereunder.

21 Indemnity

The contractor shall indemnify IREL (India) Ltd and keep IREL (India) Ltd indemnified to the extent of the value of free issue materials to be issued till such time the entire contract is executed and proper account for the free issue materials is rendered and the left over/surplus and scrap items are returned to IREL (India) Ltd. The contractor shall not utilize IREL (India)

Ltd's free issue materials for any job other than the one contracted out in this case and also not indulge in any act, commission or negligence which will cause/result in any loss/damage to IREL (India) Ltd and in which case, the Contractor shall be liable to IREL (India) Ltd to pay compensation to the full extent of damage/loss and undertake to pay the same.

22 Death, Bankruptcy, etc.

If the Contractor dies or dissolve or go into bankruptcy, or being a corporation cause to be wound up except for reconstruction purposes or carry on its business under a receiver, the executors, successors or other representatives in law of the estate of the Contractor or any such receiver, liquidator, or any person in whom the contract may become vested, shall forthwith give notice thereof in writing to IREL (India) Ltd and shall remain liable for the successful performance of the contract, and nothing aforesaid shall be deemed to relieve the Contractor or his successors of his or their obligations under the contract under any circumstances. IREL (India) Ltd may terminate the Contract by notice in writing to the Contractor.

23 Arbitration

All disputes and differences of any kind what so ever arising out of or in connection with the contract or carrying out of the works (whether during the course of works or after their completion and whether before or after determination, abandonment or breach of contract) shall be referred to and settled by the person authorized and notified in writing by IREL (India) Ltd who shall state his decision in writing. Such a decision may be in the form of a final certificate or otherwise, within a period of 30 days from the date of receipt of such reference to them. If the Bidder is dissatisfied with the decision of such authorized person, then he may within 30 days of receipt of such decision send a written appeal to IREL, represented by the Chairman and Managing Director at the registered office, Mumbai for Arbitration, in accordance with the provisions of the Arbitration and Conciliation Act and the Rules framed there under from time to time, and for the time being in force. Such written appeals should however specify only those matters in dispute, which have been referred to such authorized person but not satisfied with the decision and the reasons leading to his dissatisfaction.

If the period of 30 days has expired at any stage, stipulated in the preceding paras without any response from the Bidder before such expiry, the Bidder is deemed to have communicated his satisfaction to the decision of IREL (India) Ltd at the relevant stage and all his rights of further appeal or as the case may be, adjudication are deemed to have been waived once and for all. The seat of arbitration will be at Mumbai and only the appropriate Court coming under High Court of Mumbai will have jurisdiction to entertain all matters of litigation to the exclusion of all other courts. The Bidder shall not in any way delay or default or cause to delay or default the carrying out of the works by reason of the fact that any matter has been agreed to be referred to and / or referred to Arbitration. For Global tender this clause may be modified by the competent authority on case to case basis.

24 Jurisdiction

The courts within the local limits of whose jurisdiction the place from which the order is issued is situated only shall, subject to Arbitration Clause, have jurisdiction to deal with and decide any matter arising out of this contract.

25 NO CLAIM FOR COMPENSATION FOR SUBMISSION OF TENDER:

The tenderer whose tender is not accepted shall not be entitled to claim any costs, charges, expenses of and incidental to or incurred by him through or in connection with his submission of tender, even though IREL (India) Ltd may elect to withdraw the invitation to tender.

26 **RISK PURCHASE CLAUSE**

After award of the contract, if the tenderer fails to execute the work as per tender or at any time repudiates the order, IREL (India) Ltd has the right to forfeit and invoke the security deposit and execute the order from other agencies at the risk and cost of the tenderer. The cost difference between the alternative arrangements and total contract value will be recovered from the tenderer along with other incidental charges. In case of execution of order through alternative sources and if price is lower, no benefit on this account will be passed on to the tenderer.

27 **RELATED PARTY:**

Bids submitted by related parties in which there seems to be collusion are liable to be rejected. Parties are considered to be related if one party has the ability to control the other party or

exercise significant influence over the other party in making financial and /or operating decision.

28 **PATENT INFRINGEMENT AND INDEMNITY:**

The Supplier shall protect, indemnify and save harmless to IREL (India) Ltd, its successors, assigns, customers and users of its products, against all liability, including costs, expenses, claims, suits or proceedings at law, in equity or otherwise, growing out of, or in connection with, any actual or alleged patent infringement (including process patents, if any), or violation of any licence with respect thereto, by reason of the manufacture and/or sale by, or on behalf of Supplier of the plant or any part thereof, or the purchase thereof by IREL (India) Ltd or the use thereof in India for the purchase for which it is furnished, or the sale by IREL (India) Ltd, its successors or assigns or products made, manufactured, fabricated, processed or produced with the said plant or any part thereof, and will defend or settle at Supplier's own expense, any such claims suits, or proceedings. IREL (India) Ltd will promptly notify the Supplier in writing of any such claim, suit, action or proceeding coming to its attention, giving authority and all available information and assistance for the Suppliers defence of the same. If at any time the installation of the plant or any part thereof, or the use thereof in India for the purpose for which it is furnished or the sale of products produced therewith, is prevented or enjoyed because of patent infringement or claimed infringement, the Supplier shall promptly at his own expense, either procure for IREL (India) Ltd the rights to use and continue to use such plant or replace the same at his own expense with equally efficient non-infringing plant satisfactory under all requirements of the contract, so that the operation of IREL (India) Ltd's plant will not be unduly delayed or interrupted. If shipment of the plant, or any part thereof is prevented by attachment, injunction or otherwise, or in the course of transit from the Suppliers factory or other point of origin to the site of IREL (India) Ltd, as a result of any claim of patent infringement the Supplier shall, at his own cost and expense, promptly furnish and post the necessary bond or take such other steps as may be necessary to enable shipment to be made without delay. IREL (India) Ltd will have the right to retain counsel of its own choice to collaborate in the defence of any such claim, suit action or proceeding..

29 **CANCELLATION**

IREL (India) Ltd reserves the right to cancel the Purchase/work/service/consultancy Order or any part thereof and shall be entitled to rescind the contract wholly or in part in a written notice to successful tenderer if;

- Successful tenderer fails to comply with the terms of the work/service order
- Successful tenderer fails to convey written acceptance of the Order within 15 days of receipt at their end.
- Successful tenderer fails to deliver goods on time and / or to replace the rejected goods promptly.
- Successful tenderer becomes bankrupt or goes into liquidation.
- Successful tenderer make a general assignment for the benefit of creditors and a receiver is appointed for any of the property owned by successful tenderer fails.

Upon receipt of the said cancellation notice the successful tenderer shall discontinue all work on the work/service order and matters connected with it. IREL (India) Ltd in that event will be entitled to procure the requirements in the open market and recover excess payment over Successful tenderer's agreed price, if any, from reserving to itself the right to forfeit the EMD and/or security deposit, if any, submitted by the successful tenderer against the contract.

30 EVALUATION OF BIDS / PLACEMENT OF ORDER

Contract will be awarded to technically and commercially qualified bidder with the lowest price (L1). The L1 is arrived by combining the cost of all the items as per the Price Schedule and by considering the benefits to IREL (India) Ltd.

31. PRICE PREFERENCE FOR MICRO AND SMALL ENTERPRISES

- 31.1 Micro and Small Enterprises quoting price within price band of L1+15 per cent shall be awarded 20 per cent of the quantity of works by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be awarded works up to 20 percent of total tendered value.
- 31.2 In case of more than one such Micro and Small Enterprise, works shall be shared proportionately (to tendered quantity).

32 OTHER TERMS & CONDITIONS

32.1 Reporting Accidents to Labour

You shall be responsible at your expense for the safety of all employees and / or workmen employed or engaged by you on and in connection with the work in accordance with the laws framed from time to time and shall report to you all cases of serious accidents howsoever caused and wherever occurring on the works and small make adequate arrangements for rendering all possible aid to the victims of the accidents.

32.2 Workmen's Compensation

You shall at all times indemnify IREL (India) Ltd against all claims against Workmen's Compensation Act, 1923 or any other law for the time being in force in respect of any workmen employed by you in carrying out the contract and against all costs and expenses or penalties incurred by IREL (India) Ltd in connection therewith and (without prejudice to any other means of recovery) IREL (India) Ltd shall be entitled to deduct from any money due or to become due to you all moneys paid or payable by IREL (India) Ltd by way of compensation aforesaid or for costs or expenses in connection with any claim thereto and you shall abide by the decision of IREL (India) Ltd as to the sum payable by you under the provision of this clause.

- 32.3 IREL (India) Ltd shall not be responsible for any expenses towards compensation for workmen on any account. You shall before commencing the work to cover liability for the workmen employed by him as per the Workmen's Compensation Act, 1923 and shall produce the same to IREL (India) Ltd.

- 32.4 Contractor shall submit a copy of latest PF& ESI returns and inspection reports from statutory authorities along with a copy of challans for having deposited PF & ESI contributions every month.

32.5 Medical care in case of accident

It is the responsibility of contractor to undertake necessary care and make arrangement for transportation and treatment of his employee at ESI Hospital or any tie up hospitals of ESIC. Contractor should assist and guide his employees for claiming lawful benefits from ESI.

32.6 Records & information to be furnished by contractor

- 32.6.1 Contractor shall maintain neatly, completely and legibly registers, records, reports and returns for workers employed etc. inspection by various authorities at short notice.
- 32.6.2 Contractor shall provide information as required in respect of all of his employees employed by him to enable the Contract operating division to monitor compliance of P.F/ESI and also to enable him to furnish information to Ministry and Labour department as may be required.
- 32.6.3 Contractor shall provide full particulars of each employee employed by him before start of the work and from time to time. He will also endorse a copy of returns furnished by him to the Labour Department under the Contract Labour (Regulation and Abolition) Act 1970.
- 32.6.4 Contractor shall arrange police verification report for the employed workmen for the work and submit the copy to IREL (India) Ltd Security I/C.
- 32.6.5 Contractor shall submit medical certificate obtain from any Govt. medicals for the workman employed for the work.

32.6.6 EMPLOYMENT LIABILITY:

You are solely and exclusively being responsible for engaging or employing persons for the execution of this work. All employees engaged by you shall be in its pay roll and be paid by you. IREL (India) Ltd will have no liability whatsoever concerning the workmen engaged for this service by you. You shall indemnify IREL (India) Ltd against any loss/damage/liability arising out of in the course of its employing persons or out of relations with its employees. You shall make regular and full payment of wages along with statutory dues to the workmen within 5th of the following month irrespective of whether you are raised the bill or not and furnish necessary documents whenever required by the competent authority. You shall comply with all Acts, Laws and Regulations applicable to the area with regard to performance of the work and including, Minimum Wages Act, 1948, Contract Labour (R&A) Act, 1970, Workmen's Compensation Act, 1923 Industrial Dispute Act, 1947 and take such steps as may be deemed necessary in this regard. It shall be directly responsible for any dispute arising between them and their personnel and keep IREL (India) Ltd, RED indemnified against losses, damages or claims arising thereof. ii. In case of complaint of non-fulfilment of any obligation under the contract, IREL (India) Ltd reserves the right to withhold the payments due to them and out of such amount or amount of security held, if any or amounts likely to fall due to them (but without obligation to do so) to make such payment as it may consider necessary for smooth and unhindered working. There will be no relations of employer and employee between our IREL (India) Ltd and the personnel so engaged by you under the contract and no claims for any employment in IREL (India) Ltd will be entertained or tenable. It shall be the sole responsibility of yours to regulate and effect any terms of employment with the engaged persons without any liability whatsoever to the IREL (India) Ltd.

33. निविदा और अन्य व्यावसायिक लेनदेन में- नैतिकता ETHICS IN TENDERING & OTHER BUSINESS DEALINGS

प्रिय महोदय Dear Sir,

आईआरईएल (इंडिया लिमिटेड), परमाणु ऊर्जा विभाग के प्रशासनिक नियंत्रण के अधीन एक भारत सरकार उपक्रम, सरकारी नियमों और सार्वजनिक क्षेत्र के उपक्रम के नियम और अन्य वैधानिक एजेंसियों के विनियम के अनुसार अपना कारोबार कर रही है। व्यापार अच्छा कॉर्पोरेट प्रशासन के साथ एक नैतिक, तर्कसंगत और निष्पक्ष तरीके से किया जाता है।

IREL (India) Ltd, a Government of India undertaking under the administrative control of Department of Atomic Energy is doing its business as per the rules and regulation of the Public Sector Undertaking and other statutory agencies. The business is done in an ethical, rational & impartial manner with good corporate governance.

हमारे व्यवहार में अधिक पारदर्शी होने और हमारी विचारधारा का समर्थन करने के हमारे प्रयास में, सभी विक्रेताओं, ग्राहकों और व्यावसायिक भागीदारों से अनुरोध है कि वे हमारी कंपनी के साथ व्यवहार करने के पक्ष में किसी भी कर्मचारी को कोई उपहार और या प्रलोभन न दें। उपर्युक्त के प्रति आपकी प्रतिबद्धता के आश्वासन में, यदि आप संलग्न वचन पत्र-को भरें, हस्ताक्षर करें और उनका पालन करें, तो इसकी बहुत सराहना की जाएगी।

In our endeavor to be more transparent in our dealings and to support our ideology, all Vendors, Customers and Business Partners are requested not to provide any gift and / or inducement to any of our employees for securing / being granted favor in dealings with our Company. In assurance of your commitment to the aforesaid, it will be highly appreciated if you fill up, sign and abide by the attached undertakings.

कंपनी के किसी भी कर्मचारी द्वारा मांगे गए किसी भी उपहार और मन्लिखित में से किसीया प्रलोभन की रिपोर्ट तुरंत नि / :एक को दी जानी चाहिए

Report of any gifts and / or inducements sought by any employee of the company should be immediately reported to any one of the following:

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| अध्यक्ष एवं प्रबंध निदेशक आईआरईएल लिमिटेड (इंडिया) 1207, वीमार्ग.सा., प्रभादेवी मुंबई 400028 दूर 24225778-022 .भा. ई मेल : cmd@irel.co.in Chairman & Managing Director IREL (India) Ltd., 1207, V.S. Marg, Prabhadevi Mumbai 400 028. Ph: 022-24225778, Email:cmd@irel.co.in | मुख्य सतर्कता अधिकारी आईआरईएल लिमिटेड (इंडिया) 1207, वीमार्ग.सा., प्रभादेवी मुंबई 400028 दूर 24225778-022 .भा. ई मेल : cvo@irel.co.in Chief Vigilance Officer, IREL (India) Ltd., 1207, V.S. Marg, Prabhadevi, Mumbai 400 028 Ph:022-24221068, Email:cvo@irel.co.in |
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हम आपको विश्वास दिलाते हैं कि आपके द्वारा इस विषय पर की गई शिकायतों को, यदि है तो, गोपनीय रखा जाएगा और निष्पक्ष जांच की जाएगी और उचित कार्रवाई की जाएगी। इसी तरह, वचनबद्धता के प्रति आपकी प्रतिबद्धता को छोड़कर, इसके उल्लंघन होने पर हम कंपनी के प्रचलित नियम के अनुसार परिणाम देंगे।

We assure you that complaints if any made by you on the subject will be kept confidential and fair investigation will be conducted and appropriate action will be taken. Similarly, we expect your commitment to the undertaking and its violation will have consequences as per prevailing rule of the Company.

धन्यवाद Thanking you,

कृते आईआरईएल लिमिटेड (इंडिया) For IREL (India) Ltd

ह 0Sd/-

नाम Name: ए. वीरमणि A. VEERAMANI

पदनाम Designation: महाप्रबंधक एवं प्रधान (आरईडी) GM & HEAD (RED)

वचन पत्र UNDERTAKING

तारीख Date:

सेवा में To,

आईआरईएल लिमिटेड (इंडिया) IREL (India) Ltd.,

1207, वी .एस. मार्ग V.S. Marg,

प्रभादेवी Prabhadevi

मुंबई Mumbai 400 028.

मैं हम /..... आईआरईएल (इंडिया लिमिटेड (ग्राहक हैं । / का एक विक्रेता (किया जाएगा अब कंपनी के रूप में संदर्भित)

I / We am / are a Vendor / Customer of IREL (India) Ltd (now onwards to be referred as Company).

मैं हम सहमत हैं और वचन / देते हैं I / We agree and undertake:

कंपनी के कॉर्पोरेट कार्यालय और या इसके किसी भी क्षेत्र इकाइयों यानी एमके /, चवरा, ऑस्कॉम, आरईडी एवं आईआरईआरसी के साथ मेरे हासिल करने के / हमारे व्यवहार पाने / प्रदान नहीं या प्रलोभन / संबंध में कंपनी के किसी भी कर्मचारी को कोई उपहार और किया जाएगा

Not to provide any gift and / or inducement to any employee of the Company in connection with securing / being granted favour (s) in my / our dealings with the Corporate office of the company and / or its any field units namely MK, Chavara, OSCOM, RED & IRERC.

कंपनी के किसी भी कर्मचारी द्वारा कंपनी और हमारे / या उसके क्षेत्र इकाइयों के साथ मेरे / या / हमारे पक्ष में देने के लिए किसी भी उपहार और / व्यवहार में मेरे प्रलोभन की तत्काल रिपोर्ट किया जाएगा

To immediately report any gift and / or inducement sought by any employee of the Company granting favor (s) to me / us in my / our dealings with the Company and / or its field units.

हस्ताक्षर Signature.....

नाम Name.....

विषय Title.....

कंपनी का नाम एवं पता (मुहर सहित))

Name of the Company and Address (with Seal).....

SPECIAL CONDITIONS OF CONTRACT (SCOC)

1.0 SCOPE OF THE WORK

- 1.1 The broad scope of the work includes Design, Obtaining No Objection Certificate (NOC)/Permission/Approval from Distribution Company (KSEB) for grid connectivity ,Supply, storage, civil works, Installation, Commissioning of Grid Connected 60 kWp Solar PV System with net metering facility at the Administrative Building roof top of IREL, RED, Udyogamandal)
- 1.2 On grid 60Kwp Solar power plant project includes design, testing, inspection, packing and forwarding, transportation up to project site, loading & unloading, storage in safe custody, erection, carrying out preliminary tests at site, Installation of necessary meters, obtaining necessary permits/approval from KSEB, performance testing and commissioning.
- 1.3 The successful bidder shall take all permits, approval, license etc. as applicable from the concerned authorities before commissioning of the projects.
- 1.4 The successful bidder shall carry out the operation and maintenance of the systems including supply of spares and consumables required if any during for a period of 5 years after commissioning, i.e during the warranty period. The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective SPV modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 5 years. SPV modules shall be surface cleaned once in every two month without charging extra cost. During the period the bidder shall undertake scheduled maintenance as well as breakdown maintenance without fail.
- 1.5 The successful bidder shall take AMC for the 5 years (i.e after completing warranty period and from 6th year to 10th year) on chargeable basis. Spares for the maintenance work during the AMC period shall be provided either by IREL, RED on free of cost shall be supplied by the bidder on chargeable basis. During the period the bidder shall undertake scheduled maintenance as well as corrective maintenance without fail. Scheduled maintenance shall be carried once in three month, irrespective of the no. of breakdown maintenance.
- 1.6 Bidders are advised for site visit before submitting the quote. The bidder should carry out Shadow Analysis at the site and accordingly design string & array layout considering the optimal utilization of space, material and labour.
- 1.7 Successful bidder shall submit single line diagram for the plant indicating all wiring details, connecting details, array layout drawings along with shadow analysis report to IREL, RED before commencement of installation work.
- 1.8 The successful bidder shall, on behalf of IREL, take necessary action through IREL for obtaining the required approval/permissions for the installation of solar power plant including Net metering from respective distribution utility department. The successful bidder should facilitate submission of applications by IREL and follow up and Liaoning for obtaining NOC for the Net metering and getting the project connected to utility end through Net meter.
- 1.9 On Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches. PV

Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

- 1.10 The Bidder should ensure installation of Net Meter in coordination with Division/Sub Divisional offices of respective Distribution Utility. The testing and synchronization of Net Meter shall be ensured by the Bidder in coordination with TMR & Divisional office of respective Distribution Utility before Commissioning of the system. Net-meter must be tested & approved by respective Distribution Utility or other agencies as applicable.
- 1.11 Solar PV system shall mainly consist of following equipment/components:
 - 1.11.1 Solar PV modules consisting of required number of Mono Crystalline PV modules.
 - 1.11.2 Grid interactive Power Conditioning Unit/String inverters consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches, Remote Monitoring System etc.
 - 1.11.3 Mounting structures
 - 1.11.4 Junction Boxes.
 - 1.11.5 Earthing and lightening protections.
 - 1.11.6 IR/UV protected PVC Cables, pipes, Hardware and accessories, etc.
 - 1.11.7 Tool Kit.
- 1.12 Any accessories/components/materials etc. which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project in all respect shall be provided by the Bidder without any extra cost and within the time schedule and for efficient and smooth operation and maintenance of the SPV plant.

2.0 SOLAR PHOTOVOLTAIC MODULES

- 2.1 The Modules convert the light reaching the sun into DC Power. The amount of power they produce is roughly proportional to the intensity and the angle of the light reaching them. Vendor has to ensure the proper positioning of the Modules to take maximum advantage of available sunlight within site constraints with the Sun's movements during the day.
- 2.2 The PV modules used should be of the approved make of MNRE.
- 2.3 The solar PV modules shall consist of required number of Mono crystalline PV Modules (IREL reserves the right to have the modules tested in its presence prior to dispatch). The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-2- requirements for construction & Part 2 - requirements for testing, for safety qualification or equivalent IS.
- 2.4 Supplier shall follow the latest Engineering practices, ensure long-term compatibility requirements and continuity of equipment supply and the Safety of the Operating Staff.
- 2.5 Vendor is required to optimize generation of electricity in terms of kWh generated with available Solar Radiation at the site (may be obtained through use of efficient electronics,

lower cable losses, maximization of power transfer from PV Modules to Converter and the Grid etc).

- 2.6 The PV System shall support Remote Monitoring of important Parameters. The system shall be designed such that personnel without any back ground knowledge in Microprocessor-based Technology are able to operate the System. The operator interface shall be such that operating personnel shall be able to operate the system easily after having received some basic training.
- 2.7 The Manufacturer shall arrange Certification on Qualification of PV Modules.
- 2.8 The SPV Cells shall be manufactured using unique highly efficient diffusion process or any other technology so as to ensure uniform diffusion profiler to achieve close spread and higher efficiency for each cell.
- 2.9 Stabilized net output of the Solar PV Array for the Solar Power System should not be less than the Nominal design level for the System under Standard Test Condition.
- 2.10 Each Solar PV Module shall be warranted by the Manufacturer for at least 90% of its rated power for 10 Years from the date of System acceptance.
- 2.11 The Bidder shall provide the sample Solar PV Module electrical characteristics including current-voltage (I-V) performance curves and temperature co-efficient of power, voltage and current. However, the tabulated document with all the relevant data like voltage, current, power output for all the modules also to be provided.
- 2.12 The PV Modules shall be suitable for continuous outdoor use.
- 2.13 The PV Module shall be made of high quality laminated in ultraviolet stabilized polymer material such as Ethyl Vinyl Accelerate (EVA), Tedlar, and toughened glass. The size of single crystalline silicon PV Cells shall be so chosen so as to maximize energy density and align with economies of scale.
- 2.14 PV Module shall be provided with frame of anodized channels for size and simplicity in installation offered as a single module or series parallel combination of modules. The PV Module shall be provided with screen-less frame with Solar Cable and Connector.
- 2.15 Since the PV modules is erected in a corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701. The PV modules shall also be capable of resisting heavy wind load of 150-200 km/Hr.
- 2.16 The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 300 Wp and above wattage.
- 2.17 Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- 2.18 PV modules must be with test certificate from the manufacturer and approval certificate from MNRE/IEC authorized test centers.
- 2.19 The module frame shall be made of corrosion resistant materials, preferably having 4 dip anodized aluminum.
- 2.20 The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
- 2.21 Other general requirement for the PV modules and subsystems shall be the Following:
 - 2.21.1 The rated output power of any supplied module shall have tolerance of +/-3% max

- 2.21.2 The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2% from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
- 2.21.3 The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall be weather proof having hinged, lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
- 2.21.4 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).
 - i. Name of the manufacturer of the PV module
 - ii. Name of the manufacturer of Solar Cells.
 - iii. Month & year of the manufacture (separate for solar cells and modules)
 - iv. Country of origin (separately for solar cells and module)
 - v. I-V curve for the module Wattage, I_m , V_m and FF for the module
 - vi. Unique Serial No and Model No of the module
 - vii. Date and year of obtaining IEC PV module qualification certificate.
 - viii. Name of the test lab issuing IEC certificate.
 - ix. Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

3.0 **ARRAY/MODULE MOUNTING STRUCTURE**

Module mounting structures shall meet the following specification:

- 3.1 Hot dip galvanized (70 microns and above) MS mounting structures may be used for mounting the modules/ panels/arrays. (Test certificate for the 70Micron thickness shall be provided by the party at the time of supply of structural materials for the clearing the payment part.)
- 3.2 The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.
- 3.3 Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, and nuts & bolts. Necessary protection towards rusting need to be provided either by coating or anodization. The structural materials shall be painted with 2 coat corrosion resistant paint.
- 3.4 Special care should be taken while designing all structures for modules to cater to heavy rainfall.
- 3.5 Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- 3.6 The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (150-200km/ Hr).
- 3.7 PV modules shall be secured to support structure using screw fasteners and/or metal clamps. Screw fasteners shall use existing mounting holes provided by module manufacturer. No additional holes shall be drilled on module frames
- 3.7 Adequate spacing shall be provided between any two modules secured on PV array for improved wind resistance.

- 3.8 The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- 3.9 Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- 3.10 The structures should be laid on the rooftop and proper drainage of rain water over terrace through the installation area should be maintained.
- 3.11 The structures (lugs) should be suitably loaded with reinforced concrete blocks of appropriate size 300mm x 300mm x 300mm cubical shape with M25 concrete mixture. Waterproofing shall be provided in the areas where RCC blocks are placed on the terrace
- 3.12 The minimum clearance of the structure from the roof level should be sufficient to allow ventilation for cooling, also ease of cleaning and maintenance of panels as well as cleaning of terrace.
- 3.13 The array shall be located sufficiently inside the boundary wall of the terrace (parapet wall) and should not be projecting out. PV array shall be installed in the terrace space free from any obstruction and/or shadow. PV array shall be installed utilizing optimum terrace space to minimize effects of shadows due to adjacent PV panel rows.
- 3.14 Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection, ease of installation, replacement, cleaning of panels and electrical maintenance.
- 3.15 Each array may be provided with two bird repellents spikes at a level higher than the upper edge of the array. The location of the spike should be selected for minimum shadow effect.
4. **ARRAY/ MAIN JUNCTION BOXES (JBs)**
- 4.1 The Junction Boxes (JBs) made of GRP/FRP/with full dust, water & vermin proof arrangement shall be provided. All wires/cables shall be terminated through Copper cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- 4.2 Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands.
- 4.3 Fuse/MCB protection should be provided for each string for +ve cables.
- 4.4 Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- 4.5 Suitable markings should be provided on the bus bar for easy identification and suitable cable glands with ferrules must be fitted at the cable termination points for identification.
- 4.6 Array Junction Box should be IP 65(for outdoor& indoor) as per IEC 60529 and should be provided with fuses and Isolators of suitable ratings.
- 4.7 ACDB should have surge protection device of class 2 as per IEC 60947/60364-5-53, to protect inverters from surges in the AC line.

- 4.8 AJBs/MJB may be kept below the modules. In case of need this can be installed on wall or rooftop. ACDB should be put at safe distance from DCDB/AJBs/MJBs to avoid Eddy current interference.

5.0 **DC DISTRIBUTION BOARD**

- 5.1 Dust & vermin proof Enclosures of Polycarbonate/GRP/FRP/Powder coated Aluminium/ Cast Aluminium Alloy & should have IP 65(outdoor & indoor) compliant to IEC 60529.
- 5.2 The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.
- 5.3 Suitable cable entry points with cable glands and ferrules should be provided.
- 5.4 DC SPD of type 2 compliant to IEC 60497 with fuse should be provided.
- 5.5 Design ambient temperature should be 0-60 degC.

6.0 **AC DISTRIBUTION PANEL BOARD**

- 6.1 AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and should have necessary over current & surge protection.
- 6.2 All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.
- 6.3 All the Panel's should be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz.
- 6.4 The changeover switches, cabling work should be undertaken by the bidder as part of the project.
- 6.5 Suitable cable entry points with cable glands and ferrules should be provided.
- 6.6 DC SPD of type 2 compliant to IEC 60497 with fuse should be provided.
- 6.7 Design ambient temperature should be 0-60°C. 95 percent humidity and dusty weather.
- 6.8 All panel boards shall be of IP 65 protection.
- 6.9 Should confirm to Indian Electricity Act & rules (till last amendment)
- 6.10 All the 415 V or 240 V devices/ equipment like bus support insulators, circuit breakers, SPDs, VTs, etc. mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions
- i. Variation in Supply Voltage +/- 5% max
 - ii. Variation in Supply frequency +/- 2 Hz max

7.0 **GRID TIED POWER CONDITIONING UNIT/INVERTER**

- 7.1 The DC power produced is fed to String Inverter for conversion into AC. In a grid inter active system, AC power shall be fed to the grid at three phase 415/400V AC bus. Power generated from the solar system during the day time is utilized fully by powering to the grid as long as grid is available.

- 7.2 The output of the inverter must synchronize automatically its AC output to the exact AC voltage and frequency of the grid.
- 7.3 Inverter shall continuously monitor the condition of the grid and in the event of grid failure, the inverter automatically switches to off-grid supply within a cycle. The solar system is resynchronized with the grid within two minutes after the restoration of grid or DG set.
- 7.4 Grid voltage shall also be continuously monitored and in the event of voltage going below a preset value and above a preset value, the solar system shall be disconnected from the grid within these time.
- 7.5 Metal Oxide Varistors (MOVs) shall also be provided on DC and AC side of the inverter.
- 7.6 The inverter control unit shall be so designed so as to operate the PV system near its Maximum Power Point (MPP), the operating point where the combined values of the current and voltage of the solar modules result in a maximum power output.
- 7.7 The inverter shall be at pure sine wave inverter for grid interactive PV system.
- 7.8 Following shall also be displayed Protective function limits (AC over voltage, AC undervoltage, Overfrequency, underfrequency, ground fault, PV starting voltage, PV stopping voltage, over voltage delay, under voltage delay over frequency, ground fault delay, PV starting delay, PV stopping delay.)
- 7.9 Nuts & bolts and the inverter enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.
- 7.10 All doors, covers, panels and cable exit shall be provide with gasket or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks.
- 7.11 The system should automatically WAKEUP" during day time and "SLEEP" during night.
- 7.12 An energy meter shall be installed in between the solar grid inverter and the building distribution board to measure gross solar AC energy production ("the solar generation mater").
- 7.13 **Operation Mode:**
- i) Night or Sleep Mode: where the Inverter is almost completely turned off, with just the timer and control systems till in operation, losses shall be less than 2 W per 5kW
 - ii) Stand by Mode: where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 10W).
 - iii) **MPP tracking mode:** The control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner shall automatically re-enter standby mode as input power reduces below the standby mode threshold .Front panel shall provided is play of status of the inverter.
- 7.14 The Power-Conditioning Unit (PCU) should contain a Maximum Power Point Tracker (MPPT), Grid side Converter and Grid side Filter e) The PCU must automatically synchronize with the grid and should shut down in case of faults and very low power generation, and wake-up automatically from shutdown. The power conditioning unit/inverter should also be DG set interactive. Inverter output should be compatible with the grid frequency.
- 7.15 Typical technical features of the String inverter shall be as follows:
- i. Switching devices: IGBT/MOSFET

- ii. Control : Microprocessor :DSP
 - iii. Nominal AC output voltage and frequency:: 415V, 3 Phase, 50 Hz
 - iv. Grid Frequency Synchronization range : +/- 2 Hz
 - v. Ambient temperature considered: 0°C to 60 °C
 - vi. Humidity: 95% non-condensing
 - vii. Protection of enclosure IP 20(Min) for indoor & IP 65 for Out door.
 - viii. Grid frequency tolerance range: within +/- 3Hz
 - ix. Grid voltage tolerance: -20 % ,+15%
 - x. No load losses: less than 1% of rated power
 - xi. Inverter efficiency: 98% or above
 - xii. MPPT efficiency: 98 or above
 - xvi. THD: < 3%
 - xviii. PF: >0.98 at normal power
- 7.16 PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- 7.17 The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- 7.18 Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- 7.19 The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.
- 7.20 The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS standard. The junction boxes/ enclosures should be IP 65(for outdoor & indoor) and as per IEC 529 specifications.
- 8.0. **INTEGRATION OF PV POWER WITH GRID**
- The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the DG set comes into service PV system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided

9.0 **PROTECTION**

The SPV power plant should be provided with Lightning and over voltage protection, connected with proper earth pits. The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components. The source of over voltage can be lightning or other atmospheric disturbance.

i) **LIGHTNING PROTECTION**

- a. The lightning Conductors shall be made of 25 mm diameter 4000 mm long GI spike as per provisions of IS 2309-1969. Necessary concrete foundation for holding the lightning conductor in position should be made after giving due consideration to maximum wind speed and maintenance requirement at site in future. The lightning conductor should be earthed through 25 mm X 3 mm thick copper flat earth pits/earth bus with proper Insulation. Height of Lightning Conductors from Array Structure should be minimum 4 metres.
- b. Most areas of the State being prone to lightning, Type-II SPDs shall be included as a mandatory requirement.
- c. Similarly Type I+II SPD should also be provided on the grid side in ACDB or PCU to protect the PCU from damage

ii) **EARTHING PROTECTION**

- a. Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of IREL as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- b. Earth resistance shall not be more than 1 Ohm. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

iii) **SURGE PROTECTION**

- a. Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)
- b. Surge protection device should be provided on both the DC side and the AC side of the solar PV system. It should have protection voltage of 2.5 kV & Nominal Discharge current of 5 kA (8/20) μ sec.
- c. The DC surge protection devices (SPDs) should be installed in the DC distribution box adjacent to the solar inverter.
- d. The AC SPDs shall be installed in the AC distribution box adjacent to the solar inverter.
- e. The SPD's earthing terminal should be connected to earth through the abovementioned dedicated earthing system.

iv) **GRID ISLANDING:**

- a. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing

to feed power into small sections of the grid, known as “islands.” Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

- b. A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel

10.0 **CABLES & WIRINGS**

- 10.1 The Cable & Wires should comply to IEC60227 or IS694 & IEC60502 or IS1554 BSEL50618 (for DC cables for PV systems).
- 10.2 All copper flexible cables should comply to IS651 and make should be Lapp, Polycab.
- 10.3 Colour code should be followed for over all wiring i.e, red for positive, black for negative, green for earth.
- 10.4 All cable should run in suitable PVC Conduits. No cable should be directly exposed to sunlight.
- 10.5 Cable Sizes should be as per the given Current and Voltage ratings.
- 10.6 Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
- 10.7 Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
- 10.8 The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
- 10.9 The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

11.0 **TOOLS & TACKLES AND SPARES**

- 11.1 After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from IREL.
- 11.2 A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc. along with spare set of PV modules be indicated, which shall be supplied along with the equipment

12.0 **DISPLAY BOARD**

- 12.1 Display board of size 3 ft x 3 ft that gives detailed circuit diagram of the system with its description should be provided.

- 12.2 Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Text of the signage may be finalized in consultation with IREL.
- 13.0 **REMOTE MONITORING SYSTEM**
- 13.1 Data Acquisition System shall be provided for the solar PV plant.
- 13.2 Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis. Metering and Instrumentation for display of systems parameters and status indication to be provided.
- 13.3 Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.
- 13.4 Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system
- 13.5 The following parameters are accessible via the operating interface display in real time separately for solar power plant:
1. AC Voltage.
 2. AC Output current.
 3. Output Power
 4. Power factor.
 5. DC Input Voltage.
 6. DC Input Current.
 7. Time Active.
 8. Time disabled.
 9. Times Idle.
 10. Power produced
 11. Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.
- 13.6 All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.
- 13.7. PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.
- 13.8 Computerized DC String/ Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.
- 13.9 String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.
- 13.10 Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
- 13.11 The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.
- 13.12 All instantaneous data shall be shown on the computer screen.

- 13.13 Software shall be provided for USB download and analysis of DC and AC parametric data for plant.
- 13.14 Provision for Internet monitoring and download of data shall be also incorporated.
- 13.15 Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
- 13.16 Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
- 13.17 Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided. Remote Monitoring and data acquisition through Remote Monitoring System software at IREL with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on IREL server and portal in future shall be kept

14.0 **DRAWINGS & MANUALS**

- 14.1 Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
- 14.2 Approved ISI and reputed makes for equipment be used.
- 14.3 For complete electro-mechanical works, bidders shall supply complete design, details and drawings to be submitted to IREL

15.0 **NET METER**

- 15.1 The bidirectional electronic energy meter (HT NET meter, 0.5Sec. class) shall be installed for the measurement of import/Export of energy.
- 15.2 The bidder must take approval / NOC from the Concerned KSEB for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to IREL before commissioning of SPV plant.
- 15.3 Reverse power relay shall be provided by bidder (if necessary), as per the local KSEB requirement. The On-grid solar power plant will be connected to the grid through a net meter as per the single line diagram indicated in this document. The indicative specification of the Net-meter is as follows:

16.0 **GENERATION METER**

As suggested by the KSEB, Three Phase Four wire, 3 x 240VAC, 20-100Amps ISI marked Direct current operated Energy Meter, DLMS Cat C having calibration LED, AMR compliance & front sealing facility to be used as generation meter up to 20KW with Accuracy :1.0.GPRS/GSM Modem with connecting cable & antenna for running smoothly up to 10 year for AMR facility.

17.0 **WARRANTY**

Solar panel : 10 years

| | |
|---------------------------------------|-----------|
| PCU and electronic components/systems | : 5 years |
| Electrical components/systems | : 2 Years |

The complete 60Kwp solar power plant shall be under warranty for 5 years from the date of Commissioning and Acceptance of the solar power plant and it should be covered all the Manufacturing defects, Spare Parts, Worn out Parts, Electrical & Electronic Equipments / Components and Service charges, etc. during the period, apart from the specific unit warranty.

The complete 60Kwp solar plant shall be having performance warranty for 5 Years for its trouble free operation to the desired output.

18.0 **PERNALT**

As per MNRE standards, solar power plant shall generate 4Kwh/KW/Hr. The performance ratio (PR) of the plant during the operation and maintenance period shall be evaluated on annual basis. If the plant fails to achieve the minimum requirement of 75% performance ration, pro rata reduction in the bills shall be done using the following formula.

$PR = \text{Actual reading of plant output in Kwh} / \text{Calculated nominal plant output in Kwh.}$

Nominal plant output = Solar irradiation at the generating surface * relative efficiency.

Kerala State Electricity Board industrial tariff shall be taken as base for calculating penalty.

If the plant continue to underperform for two consecutive years, IREL (India) Ltd reserve the right to terminate the contract and forfeit the operation and maintenance security & performance warranty submitted by the bidder.

19.0 **PAYMENT TERMS**

19.1 **PART - A: SUPPLY.**

70% of the payment for the supply part shall be released after the complete supply of materials in connected with the solar power plant as spelled in the price scheduled within 30 days of receipt of clean and clear bill duly certified by EIC. Balance 20 % will be released after the completion of the installation and commissioning of the solar power plant. Remaining 10% will be released after the performance warranty period of five years or against bank guarantee for five years.

19.2 **PART - B: INSTALLATION AND COMMISSIONING**

90% of the payment for the erection part shall be released after the completion of installation and commissioning of the solar power plant in all respect as specified in the work order. Remaining 10% will be released after the performance warranty period of five years or against bank guarantee for five years.

19.3 **PART- C: NET METERING CHARGES AND ELECTRICAL INSPECTORATE CHARGES.**

100% of the payment shall be released on the basis of request letter from the successful bidder. However the bidder shall provide necessary documentary evidence/copy of bills for the expenditure towards the electrical inspectorate charges and Net metering charges etc.

19.4 **PART - D AMC CHARGES.**

AMC charges for each year shall be released on half yearly basis, on submission service reports and Tax invoice, after completion of each half year from sixth year onwards.

The following shall be submitted to EIC along with the final bill for the certification and recommendation of bill submitted.

1. Single Line Diagram for the plant indicating all wiring details, connecting details.
2. Array layout drawings along with shadow analysis report.
3. Commissioning report
4. Catalogues of critical components
5. JCC
6. Warranty certificate/Warrantee certificates issued for major components by OEMs
7. I-V Curves of Solar modules
8. Operation manual
9. Dos & Don'ts in the form of a booklet
10. Agreement to undertake Operation and Maintenance for a period of 10 years (First five years under performance warranty period and remaining five years under the AMC period).

20.0 COMMENCEMENT AND COMPLETION PERIOD:

- 20.1 Work shall be commenced with 15 days from the acceptance of the work order, or 15 days from the date of handing over the site whichever is later. The date of acceptance of the work order shall be defined as the date of signing the letter of acceptance of the work order or 7 days from the date of dispatching of the order whichever is earlier.
- 20.2 The entire as specified in the work order shall be completed within 5 months from the date of commencement of work. In case any stoppage of work due to the reason by IREL, after commencement of the work, the number of days stopped shall be extended for the completion of the work.
- 20.3 The work shall be carried out without effecting the normal functioning of the company. Qualified supervisor shall be present throughout the installation period of the solar power plant. Supervisor shall take necessary safety permit from the safety department and follows the safety norms of the company. Permitted work timings inside factory premises is from 0800 hrs to 1600 hrs. Any request for extension of working hours will be entertained only in case of exigencies under the sole discretion of EIC.

21.0 SITE INSPECTION

- 21.1 Interested bidders can inspect the site on any working days at our specified visiting hours with the permission of Engineer concerned.
- 21.2 The bidders are also advised to study the labour supply/availability, trade union practices and labour rates prevailing at Udyogamandal.

22.0 ENGINEER-IN-CHARGE (EIC)

Shri. K. A. Joshy, DM (Elec.) will be the Engineer-in-Charge for this work.

23.0 SCOPE OF IREL,RED

- 23.1 Water and electric power supply shall be given to contractor at single point. Contractor may take necessary arrangement for the safe and economical use of them.
- 23.2 IREL,RED will take necessary step for remitting KSEB application fee (Approx.Rs.1000/-) and registration fee (Approx.Rs.1000/Kw) to KSEB.

BILL OF QUANTITIES

| | | | |
|----------|--|-----|---------|
| A | PART - A: SUPPLY | | |
| Sl No. | Description | Qty | unit |
| 01 | Supply of 60Kwp Solar Power Plant including Solar PV modules, Solar string Inverter, Weather monitoring station, structural materials, JB's, cables, other electrical items as specified in the technical specification. | 01 | Nos |
| B | PART - B: INSTALLATION AND COMMISSIONING | | |
| 01 | Installation and commissioning including labour charges | 01 | Lumpsum |
| C | PART - C: NET METERING CHARGES AND ELECTRICAL INSPECTORATE CHARGES. | | |
| 01 | Supply of HT or LT Net meter (3 Phase Bidirectional TOD Meter, as per Electrical Inspectorate requirement) and Solar Energy meter (3 phase unidirectional TOD meter) as per KSEB specifications | 01 | Set |
| 02 | Supply of HT CTs and HT PTs as per KSEB specifications | 01 | Set |
| 03 | Supply of MCCBs, Isolators, MCBs, RPR etc. of the required capacity as per KSEB specifications | 01 | Set |
| 04 | Supply of required cables as per KSEB specifications and its laying charges. | 01 | Lumpsum |
| 05 | Electrical Inspectorate approval charges (scheme drawing preparation, scheme approval, energizing approval etc.) | 01 | Lumpsum |
| 06 | Inspection, Testing Fee, (Net meter Solar meters, CTs, PTs etc.) and Installation of the above as per KSEB guidelines. | 01 | Lumpsum |
| D | PART - D: AMC CHARGES | | |
| 01 | AMC Charges (6 th year) | 01 | Lumpsum |
| 02 | AMC Charges (7 th year) | 01 | Lumpsum |
| 03 | AMC Charges (8 th year) | 01 | Lumpsum |
| 04 | AMC Charges (9 th year) | 01 | Lumpsum |
| 05 | AMC Charges (10 th year) | 01 | Lumpsum |

Price bid formula**a= Basic price in Rs****b= GST in %****Grand Total = a+(a*b/100)**

Techno- Commercial Terms for Tenderer's Response

| Sl. No | Terms | Response |
|--------|---|-----------------------|
| 1 | Tenderer must carefully study the GCOC & SCOC and other terms and conditions before participation of tender. All terms and conditions of NIT and Corrigendum, if any, shall be applicable. | AGREE |
| 2 | EMD if remitted as given in schedule of Tender, provide UTR No. with bank details or upload copy of DD/BC/BG and original shall be sent to IREL(India) Ltd, Udyogamandal immediately. | AGREE |
| 3 | If exempted from paying EMD, upload scanned copy of certificates showing that bidders are MSME with current valid registration & PSU/State Govt Undertakings should be uploaded necessary documents for EMD Exemption(If applicable). | AGREE |
| 4 | PQ Criteria: Bidder shall submit Documents as per Annexure III | AGREE |
| 5 | The bidder shall agree to validity of 90 days from the date of opening of Techno-Commercial bid | AGREE |
| 6 | The bidder shall agree to our payment terms & Completion period as per tender | AGREE |
| 7 | Submit Bank details for Net Banking (A/c number /Branch name/IFSC code etc.) | AGREE WITH REMARKS |
| 8 | Copy of GST IN Certificate of Bidder shall be uploaded | AGREE WITH REMARKS |
| 9 | Name & full address/Telephone/Mobile/Fax No./e-mail id of bidder | AGREE WITH REMARKS |
| 10 | Any deviations by bidder shall be uploaded | AGREE WITH REMARKS |

BANK DETAILS

IREL(India) Ltd Bank Details.

1. Name of the Bank : State Bank of India
Udyogamandal Branch,
Udyogamandal
Kochi- 683 501
2. Account Type : Current Account
3. Account Number : 57017844321
4. IFSC Code : SBIN0070158

IREL (India) Ltd, RED, GST IN: ID No. 32AAACI2799F2ZM

Bidders (Pl. Provide the details):

1. Name of the Bank :
-
2. Account Type :
3. Account Number :
4. IFSC Code :

PROFORMA FOR BANK GUARANTEE FOR SECURITY DEPOSIT

WHEREAS on or about the _____ day of _____ M/s _____ (Tenderer's name & address), having its registered office situated at _____ (Postal address) (herein after referred to as 'The Tenderer') entered into a contract bearing reference no. _____ dtd. _____ with _____ RED unit of M/s IREL(India) Ltd, a company incorporated under Indian Companies Act having its registered office at Plot No.1207, ECIL building, Opp. to Siddhivinayak Temple, Veer Savarkar Marg, Prabhadevi, Mumbai – 400 028, India (herein after referred to as IREL(India) Ltd, for _____ (details of order) (herein after referred to as 'The Contract').

AND WHEREAS under the terms and conditions of the contract the tenderer is required to keep with IREL(India) Ltd a security deposit of Rs. _____ (Rupees _____ only) or submit a Bank Guarantee in lieu of cash deposit for the fulfillment of the terms and conditions of the contract, and whereas the supplier has chosen to submit a Bank Guarantee.

We _____ Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from IREL(India) Ltd stating that the amount claimed is due by way of loss or damage caused to or that would be caused to or suffered by IREL(India) Ltd by reason of breach of any of the terms and conditions of the said contract. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. The payment will be released within three working days from the date of demand for payment.

We undertake to pay to IREL(India) Ltd any money so demanded notwithstanding any dispute or disputes raised by the tenderer in any suit or proceeding pending before any court or tribunal relating thereto, our liability under these present being absolute and unequivocal.

The payment so made by us under this guarantees shall be valid discharge of our liability for payment thereunder and the tenderer shall have no claim against us for making such payment.

We _____ Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of IREL(India) Ltd under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till IREL(India) Ltd certifies that the terms and conditions of the said Agreement have

been fully and properly carried out by the said tenderer and accordingly discharges this Guarantee. Our Guarantee shall remain in force until _____ and unless a demand or claim under this guarantee is made on us in writing within three months from the expiry of the Guarantee period, we shall be discharged from all liability under this Guarantee thereafter.

We _____ Bank, further agree that IREL(India) Ltd shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extent time of performance by the said tenderer from time to time or to postpone for any time or from time to time any of the powers exercisable by IREL(India) Ltd against the said tenderer and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contract or for any forbearance, act or omission on the part of IREL(India) Ltd or any indulgence by IREL(India) Ltd to the said tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Consultant.

We _____ Bank lastly undertakes not to revoke this guarantee during its currency except with the previous consent of IREL(India) Ltd in writing.

Dated the _____ day of _____ 2011

_____ Bank

(Signature with name in Block letters with designation,
Attorney as per power of Attorney No. _____ dt. _____)

Bank's Common seal

PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(To be issued by approved Scheduled Banks)

In accordance with Notice Inviting Tender (NIT) No. _____ Dated _____ for the work of _____ (herein after referred to as "the said Works") for Rs. _____ (Rupees _____ only), under _____ RED unit of M/s IREL(India) Ltd, a company incorporated under Indian Companies Act, having its registered office at Plot No.1207, ECIL building, Opp. to Siddhivinayak Temple, Veer Savarkar Marg, Prabhadevi, Mumbai-400028, India (herein after referred to as IREL(India) Ltd), M/s _____ Address _____ [Herein after referred to as Contractor (s)] wish /wishes to participate in the said tender and a Bank Guarantee for the sum of Rs. _____ (in words) valid for a period of _____ days (in words) is required to be submitted by the Bidder towards the Bid Security.

We the _____ Bank (hereinafter called the said Bank) do hereby undertake to pay to IREL(India) Ltd, the sum of Rs. _____ (Rupees _____ only) by reason of the said tenderer's failure to enter into an agreement of contract on intimation of acceptance of his tender and/or to commence the contract works and/or failure to deposit the security deposit within the stipulated period as per the terms and conditions relating to and/or governing the contract and/or specified in the Notice Inviting Tender (NIT). We also agree that any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. We also agree that notwithstanding any dispute or difference or any litigation in respect of or arising from the said contract and/or the acceptance of the tender of the tenderer afore stated by IREL(India) Ltd including the question as to the tenability of the claim of the IREL(India) Ltd for forfeiting the Earnest Money being the Bank Guarantee herein, we shall forthwith pay the said amount to IREL(India) Ltd on demand being made as aforesaid.

We _____ Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for entering into an Agreement of contract and that it shall continue to be enforceable till all the dues of the IREL(India) Ltd under the terms and conditions of the NIT for the work have been fully paid and its claims satisfied or discharged or till IREL(India) Ltd certifies, that the terms and conditions of the NIT have been fully and properly carried out by the said tenderer and accordingly discharges the guarantee.

We _____ Bank further agree with the IREL(India) Ltd that the IREL(India) Ltd shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the NIT and/or terms and conditions governing the contract or to extend the time of validity of the offer from the said tenderer from time to time or to postpone for any time or from time to time any of the powers exercisable by the IREL against the said tenderer and to forbear or enforce any of

the terms and conditions of the NIT and we shall not be relieved from our liability hereunder by reason of any such variation, or extension being granted to the said tenderer or for any forbearance, act or omission on the part of the IREL(India) Ltd or any indulgence by the IREL(India) Ltd to the said tenderer or by any such matter or thing whatsoever which under the law relating to surety/guarantee would but for this provision have effect of so relieving us.

We _____ Bank do hereby further agree that any change in the Constitution of the said tenderer or the Bank will not affect the validity of this guarantee.

We _____ Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the IREL(India) Ltd in writing.

Dated the _____ day of _____ 20--

_____ Bank

(Signature with name in Block letters with designation,
Attorney as per power of Attorney No. _____ dt. _____)

Bank's Common seal

PROFORMA FOR BANK GUARANTEE AGAINST PERFORMANCE GUARANTEE

WHEREAS on or about the _____ day of _____ M/s _____ (Tenderer's name & address), having its registered office situated at _____ (Postal address) (herein after referred to as 'The Tenderer') entered into a contract bearing reference no. _____ dtd. _____ with _____ RED unit of M/s IREL(India) Ltd, a company incorporated under Indian Companies Act having its registered office at Plot No.1207, ECIL building, Opp. to Siddhivinayak Temple, Veer Savarkar Marg, Prabhadevi, Mumbai – 400 028, India (herein after referred to as IREL(India) Ltd), for _____ (details of order) (herein after referred to as 'The Contract').

AND WHEREAS the Agreement provides that the tenderer shall furnish a Bank Guarantee for Rs. _____ (Rupees _____ only) being ____% (_____ percent) of the total agreement value as Guarantee for the due fulfillment by the tenderer of the terms and conditions contained in the Agreement, the guarantee remaining valid till the completion of the guarantee period.

We _____ Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from IREL(India) Ltd stating that the amount claimed is due by way of loss or damage caused to or that would be caused to or suffered by IREL(India) Ltd by reason of breach by the said tenderer of any of the terms or conditions contained in the said Agreement or by reason of the Bidder's failure to perform the said agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees _____ only).

We undertake to pay to IREL(India) Ltd any money so demanded notwithstanding any dispute or disputes raised by the tenderer in any suit or proceeding pending before any court or tribunal relating thereto, our liability under these present being absolute and unequivocal. The payment so made by us under this guarantees shall be valid discharge of our liability for payment thereunder and the tenderer shall have no claim against us for making such payment.

We _____ Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of IREL(India) Ltd under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till IREL(India) Ltd certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said bidder and accordingly discharges this Guarantee. We also agree that the amount will be paid by us to the IREL(India) Ltd within three working days from the date of demand for payment till the actual date of payment made by us. Our Guarantee shall remain in force until and unless a

demand or claim under this guarantee is made on us in writing within six months from the expiry of the Guarantee period, we shall be discharged from all liability under this Guarantee thereafter.

We _____ Bank, further agree that IREL(India) Ltd shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extent time of performance by the said tenderer from time to time or to postpone for any time or from time to time any of the distributions exercisable by IREL(India) Ltd against the said tenderer and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relived from our liability by reason of any such variation, or extension being granted to the said tenderer or for any forbearance, act or omission on the part of IREL(India) Ltd or any indulgence by IREL(India) Ltd to the said tenderer or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

This guarantee will not be discharged due to the change in the constitution of the Bank or the bidder.

We _____ Bank lastly undertakes not to revoke this guarantee during its currency except with the previous consent of IREL(India) Ltd in writing.

Dated the _____ day of _____ 201_

_____ Bank

(Signature with name in Block letters with designation,
Attorney as per distribution of Attorney No. _____ dt. _____)

Bank's Common seal