



LIFE INSURANCE CORPORATION OF INDIA
EAST CENTRAL ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
“JEEVAN DEEP”, EXHIBITION ROAD, PATNA – 800 001
PHONE: 0612-2501118/2503014/2501103,
E-mail: ecz_engg@licindia.com
AN ISO 9001:2015 CERTIFIED DEPARTMENT

BID – II

TECHNICAL BID

LIFE INSURANCE CORPORATION OF INDIA
ENGINEERING DEPARTMENT (4TH. FLOOR)
EAST CENTRAL ZONAL OFFICE,
“JEEVAN DEEP BUILDING”,
EXHIBITION ROAD, PATNA-800 001
PHONE: 0612-2501118/2503014/2501103,
e-mail: ecz_engg@licindia.com
AN ISO: 9001:2015 CERTIFIED DEPARTMENT

NAME OF WORK: SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170KWp(50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).

CONDITIONS OF CONTRACT AND TECHNICAL SPECIFICATIONS (THIS DOCUMENT IS TO BE STAMPED & SIGNED OF EACH PAGES BY LOWEST TENDERER ONLY AS & WHEN ASK FOR).

This document is a part of BID-II. The Earnest Money Deposit and Tender Document Fees is to be physically submit if the Tenderers are avail the option of Demand Draft/Pay Order/Banker's Cheque/Bank Guarantee at the following address

Life Insurance Corporation of India, East Central Zonal office.
Engineering Department. “JEEVAN DEEP BUILDING”
4TH floor, Exhibition Road. Patna: 800001



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GENERAL INSTRUCTIONS

Name and Location of the proposed work:

NAME OF WORK: SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170KWp(50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).

LOCATION: 1. LIC OF INDIA, HAZARIBAGH DIVISIONAL OFFICE BUILDING, HAZARIBAGH.
 2. LIC OF INDIA, MUZAFFARPUR DIVISIONAL OFFICE BUILDING, MUZAFFARPUR, BIHAR
 3. LIC OF INDIA, BHAGALPUR DIVISIONAL OFFICE BUILDING, BHAGALPUR, BIHAR

INSTRUCTIONS :

LIC of India invites sealed Tenders in THREE-BID SYSTEM consisting of 1) **Pre-qualification Bid** 2) **Technical & EMD Bid** 3) **Commercial Bid** for **S.I.T.C. OF 170(50+50+70)KWp GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).**

The **Pre-qualification Bid** (BID-I) should contain all the related documents and scanned copy of the EMD shall be submitted.

The **Technical Bid** (BID-II) should contain all the Technical Specifications of the SPV plant, Test Certificate of the Product obtained from authorized Agencies Guarantee Terms and all the terms and conditions. All the forms formats and undertakings have to be filled up and signed by appropriate person as mentioned in the BID. All the pages of this BID shall be signed and submitted by the lowest tenderer in physical form when required. No price should be mentioned in the technical Bid. The Earnest Money Deposit and Tender Document Fees is to be physically submit if the Tenderers are avail the option of Demand Draft/Pay Order/Banker's Cheque/Bank Guarantee at Life Insurance Corporation of India, East Central Zonal office. Engineering Department. "JEEVAN DEEP BUILDING" 4TH floor, Exhibition Road. Patna: 800001.

The Commercial Bid (BID-III) should contain the prices quoted as per bill of quantities.

A **Pre-Bid meeting** has been arranged for the benefits of the prospective tenderers for any clarification regarding the tender. The tenderers / authorized representatives of tenderers are advised to attend the same at LIC of India, East Central Zonal Office, Jeevan Deep Building, 4th Floor, Engineering Department, Exhibition Road, Patna 800001.

The technical offers of the firms will be verified and those firms whose technical specifications are meeting the requirement of LIC and as satisfying the selection criteria are qualified for participating in the opening of commercial bids.



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GENERAL TERMS & CONDITIONS

1. LIC of India may accept or reject, in full or in part, any or all the offers, without assigning any reason whatsoever.
2. **The Chief Engineer**, LIC of India, East Central Zonal Office, Patna reserves the right **(a)** to technically qualify any tender and **(b)** to accept any tender among the tenderers, not necessarily be the lowest and (c) to reject any or all tenders without assigning any reasons thereof.
3. The tenders not withstanding to our requirements, terms & conditions are liable to be rejected.
4. The tenders submitted shall be valid for a period of **three months** from the last date of submission of tenders.
5. The accepted rates of the successful tender shall be valid for **three months** from the date of acceptance.
6. In case of revised price bids is warranted in view of technical specification variations, the validity of offer will be considered from the day of last date of revised date of submission.
7. The tender would be accepted at the Zonal Office – LIC, Patna.



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LETTER TO CONTRACTOR FROM CHIEF ENGINEER

To,

Dear Sir / Sirs,

SUB: e-TENDER FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170KWp (50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).

1) We hereby publish the TENDER on e-Tendering Portal (Website) through www.tenderwizard.com/LIC in **Electronic Mode** hereinafter referred as "e-Tendering" and consisting of following :

(a) **BID I : PREQUALIFYING BID**

(b) **BID II : CONDITIONS OF CONTRACT AND TECHNICAL SPECIFICATIONS, EMD AND TENDER DOCUMENT FEES.** (This BID i.e. EMD & Tender Fee's has to be physically submitted if the tenderers are avail the option in form of DD/PO/BG and Conditions of contract and Technical Specifications is to be stamped & signed of each pages by Lowest Tenderer only as & when ask for).

(c) **BID III : FINANCIAL BID**

Please note that copy of above e-Tender can be downloaded from above portal (website) and should be mandatorily submitted in **Online Electronic Mode** hereinafter referred as "Online Offer". The submission of Online offer duly Encrypted & Digitally Signed on above portal should be in prescribed Electronic Forms (Online) available on above portal for respective tender in Online Envelope(s) on or before **As per the Key Dates mentioned in the tender document and online portal for above tender.**

2) The bidders should submit required Tender document Fee and Earnest Money Deposit in a manner/mode as mentioned in e-Tender process (ref: Pre-Qualification Notice). Tender document fee of **Rs 2,000/- +@ 18% GST i.e. Rs.360.00 = Rs. 2,360.00** (Rupees two thousand three hundred sixty only) and **Earnest Money Deposit of Rs.37,000/-** (Rupees Thirty Seven Thousand only) shall be submitted separately .

a) Tender document fee of **Rs 2,000/- +@ 18% GST i.e. Rs.360.00 = Rs. 2,360.00** (Rupees two thousand three hundred sixty only) in the form of Crossed Demand Draft/ Pay order/ Bankers Cheque /RTGS/NEFT of any Nationalized/ Scheduled Bank drawn in favour of "Life Insurance Corporation of India" payable at "Patna"

b) Earnest Money Deposit shall be submitted in the following form:-

i) The total amount of **Rs.37,000/-** (Rupees Thirty seven thousand) only in the form of Crossed Demand Draft/ Pay order/ Bankers Cheque/RTGS/NEFT of any Nationalized/ Scheduled Bank drawn in favour of "Life Insurance Corporation of India" payable at "Patna"

OR

ii) 50% of the total amount i.e. **Rs.18,500/-** (Rupees Eighteen thousand Five hundred) only in the form of Bank Guarantee (as per enclosed proforma) of any Nationalised/Scheduled Bank & another 50% i.e. **Rs.18,500/-** (Rupees Eighteen thousand five hundred) only in the form of Demand Draft/Pay Order/Banker's Cheque/RTGS/NEFT drawn in favour of "Life Insurance Corporation of India"



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payable at "**Patna**". The Bank guarantee shall be from any Nationalised /Scheduled Bank preferably at Patna or where a Branch/Division of LIC of India exists..

OR

- III) The total amount of **Rs.37,000/-** (Rupees Thirty seven Thousand) only in the form of Bank Guarantee (**as per enclosed proforma**) of any Nationalised/Scheduled Bank. The Bank guarantee shall be from any Nationalised /Scheduled Bank preferably at Patna or where a Branch/Division of LIC of India exists.
- 3) BIDs will be received at the office of Chief Engineer at above address **on or before As per the Key Dates** and the e-Tenders will be opened at **As per the Key Dates** in the presence of contractors or accredited representatives, who wish to attend the online Tender Opening process. The bidders can view the Tender Opening details through their respective Login IDs on the above mentioned e-Tender portal (Website). The Tenderer should ensure that their tender is received **Online Electronically** on or before the due date and time as specified in "**Key Dates**" in the Tender Document and above mentioned Portal (website). **Please note that above e-Tendering System is an automatically time locked system which will be locked immediately as soon as due date and time is over and will not accept any offer after that. So, the tenderers are strictly advised to do their process well before the due date and time to avoid any such instances.**
- 4) The Guidelines to Submit tenders on Electronic Tendering System (ETS) is part of **BID -I** of the Tender document. The tenderers are advised to carefully read the above document for understanding of e-Tendering System. The above Annexure will supersede all the terms & conditions mentioned for submission of tender in document.
- 5) The Life Insurance Corporation of India does not bind itself to accept the lowest or any tender.

Yours faithfully,

CHIEF ENGINEER



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LETTER FROM CONTRACTOR TO CHIEF ENGINEER

TO BE SUBMITTED ONLINE ON OR BEFORE ON As per the Key Dates

Date:

From:

.....

To
 The Chief Engineer,
 Life Insurance Corporation of India
 East Central Zonal Office
 Jeevan Deep, Exhibition Road,
Patna - 800001

SUB: e-TENDER FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170KWp (50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).

Dear Sir,

1) Having examined the Enrolment Form, Selection Criteria , Technical Specifications, schedule of Quantities, Detailed Drawings, Specifications, Conditions of Contract etc. included in the tender document for the percentage Rate Contract relating to the above work, having visited/examined the site of the existing premises, having acquired the requisite information relating thereto as effecting the tender invited by you on behalf of the Life Insurance Corporation of India, I/We, the undersigned hereby offer to carry out the above mentioned work on **Item Rate** basis in strict accordance with the Contract Conditions and Specifications.

I/We, undertake to complete and deliver the whole of the works within a period as specified in Appendix to the Conditions of Contract from the date of issue of intimation from you that the tender has been accepted and upon receiving possession of the site. I/We shall be under the obligation to complete the entire work within the period of completion failing which to pay the sum as stated in the Appendix to the Conditions of Contract for every week that the works shall remain incomplete, damages as compensation subject to the conditions of contract relating to extension of time.

2) I/We enclose herewith my/our tender with an Earnest money remittance of **Rs 37,000/- (Rupees Thirty seven thousand)** in the appropriate format as specified in BID-I (Prequalifying Bid). I/We, hereby agree that part of this sum shall be forfeited by the Life Insurance Corporation of India in the event of my/our tender being accepted and I/We fail to execute Contract when called upon to do so.



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3) In the event of the tender being accepted, I/We, agree to the retention of my/our EMD as a part of Security Deposit and the balance amount of Security Deposit to be recovered at 7.5% of Gross Value of work done from my / our Running Account Bills. If the total amount / 50% of EMD is submitted by me/us in the form of Bank Guarantee and I/We want to avail cash option i.e. deduction of security deposit in the from the bills, then I/We have to deposit a Demand draft/Pay order in the name of Life Insurance Corporation of India payable at Patna amounting to total amount / 50% EMD in lieu of Bank Guarantee submitted towards EMD. Once this amount is deposited then I/We can avail cash option for Security deposit and the Bank Guarantee submitted towards EMD shall be returned to me/us.

OR

I/We, agree to furnish a lump sum Bank Guarantee for total Security Deposit of 5% of accepted Tender value or two Bank Guarantees each with 50% value from any Nationalized/Scheduled Bank at Patna as per specimen given in **ANNEXURE "B"** to Conditions of Contract, within 21 (twenty-one) days of acceptance of tender. The Bank guarantee shall be from any Nationalised /Scheduled Bank preferably at Patna or where a Branch/Division of LIC of India exists.

4) I/We, agree to furnish a lump sum Performance Guarantee amounting to 10% of **contract amount** in the form of Bank Guarantee from any Nationalized/Scheduled Bank at **Patna** as per specimen given in **ANNEXURE "C"** to Conditions of Contract, within 21 (twenty-one) days of acceptance letter. The Bank guarantee shall be from any Nationalized /Scheduled Bank preferably at Patna or where a Branch/Division of LIC of India exists.

5) I/We, note that the Earnest Money Deposit of **Rs. 37,000/-** (Rupees Thirty seven thousand) only would be refunded to me/us.

- a) On expiry of the validity of the tender or earlier at the discretion of Chief Engineer in case my/our tender is not accepted and
- b) In case my/our tender is accepted, after I/We, furnish Bank Guarantee as mentioned above.

6) I/We, agree,

a) in case my/our tender is withdrawn before expiry of the validity period or before the issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Department, in such case 25% of the EMD will be forfeited by the department.

b) in case my/our tender is accepted and the Performance Guarantee is not submitted within the prescribed period or approved extended period, 50% of the EMD will be forfeited automatically without any notice.

c) in case of forfeiture of Earnest money as prescribed above [6(a) and 6(b)], the tender shall not be allowed to participate in the retendering process of the work.

Yours faithfully,

(SIGNATURE OF THE CONTRACTOR)

Name and Seal

NAME OF THE PARTNER OF THE FIRM

OR

NAME OF THE PERSON HAVING POWER OF

ATTORNEY TO SIGN THE CONTRACT

(CERTIFIED TRUE COPY OF THE POWER

OF ATTORNEY SHOULD BE ATTACHED)



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CONDITIONS OF CONTRACT

1. INTERPRETATIONS:

- 1.1 In construing these Conditions, the Specifications, the Priced Schedule of Quantities, Tender and Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:
- 1.2 "Employer" shall mean THE LIFE INSURANCE CORPORATION OF INDIA and his (their) heirs, legal representatives, assignees and successors.
- 1.3 "Chief Engineer" shall mean the person occupying the post of head of the Zonal Engineering Department of the Corporation.
- 1.4 "Corporation's Engineers" shall mean such Deputy Chief Engineers, Superintending Engineers and/or Executive Engineers of the Corporation, who shall from time to time be appointed by the Chief Engineer for supervising the work carried out by the Contractor or for any purpose in connection therewith:
- 1.5 The term "Site Engineer" shall mean the person appointed and paid by the Employer, acting under the order of the Corporation's Engineer to superintend the work.
- 1.6 The Contractor shall mean the individual, firm or company whether incorporated or not, who is awarded the contract & shall include the legal representative of such individual or the persons composing such firm or company or the successors of such individual, firm or company & the permitted assignees of such individual, firm or company.
- 1.7 The "Site" shall mean the lands/buildings and/or other places on, in, into or through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
- 1.8 "This Contract" shall mean the Articles of Agreement, these Conditions, the General Instructions to Contractor, the General Preambles to Schedule of Quantities, Special Conditions, the priced Schedule of Quantities, the Specifications, the Appendices, the Drawings and other related correspondence.
- 1.9 "Act of Insolvency" shall mean any act of insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any amending Statute.



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- 1.10 "Notice in Writing" or written notice shall mean a notice in written, typed or printed characters, sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
- 1.11 Words importing persons include Firms and Corporations, words importing the singular only also include the plural and vice versa where the context so requires.
- 1.12 The titles of the Clauses shall not affect or alter the meaning of Clauses and are solely for the purpose of facilitating reference.
- 1.13 The following abbreviations shall be followed for the designations of various LIC Officers:

DESIGNATIONS

ABBREVIATIONS

Executive Director (Engineering)	E.D.(E)
Zonal Manager	Z.M.
Chief Engineer	C.E.
Chief Architect	C.A.
Deputy Chief Architect	D.C.A.
Deputy Chief Engineer	Dy.C.E.
Superintending Engineer	S.E.
Senior Architect	S.A.
Executive Engineer	E.E.
Deputy Senior Architect	D.S.A.
Asstt. Secretary	A.S.

- 1.14 Wherever the words "approved", "directed", "as required", "selected" or words of like effect are used, it is to be understood that the approval/direction, requirement or selection of the Corporation's Engineer are intended unless otherwise specified.
- 1.15 The words "as described" shall mean the description in the Special Conditions, Specifications, General Instructions, Drawings etc. of this tender.
- 1.16 The words "allow" shall mean that the Contractor shall include in his rates for the particular matter referred to.
- 1.17 "Day Work" shall mean items of labour and/or materials which in the opinion of the Corporation's Engineer are not capable of being evaluated by the accepted method of measurement and analysis.



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2. SCOPE OF CONTRACT:

- 2.1** The Contractor shall carry out and complete the works in every respect in accordance with this Contract and in accordance with the directions and to the satisfaction of the Corporation's Engineer. The Corporation's Engineer may issue further drawings and/or written instructions, details, directions and explanation in regard to:
- a. The variation or modification of the Design, quality of works or the addition or omission or substitution of any work;
 - b. Any discrepancy in the Drawings or between the Schedule of Quantities and/or Drawings and/or Specifications;
 - c. The removal from the site of any materials brought thereon by the Contractor and the substitution of any other material thereof;
 - d. The removal and/or re-execution of any work executed by the Contractor;
 - e. The dismissal from the work of any persons employed thereupon;
 - f. The opening up for inspection of any work covered thereupon;
 - g. The amending and making good of any defects under relevant Clause giving details of defects after completion.
- 2.2** The Contractor shall forthwith comply with and duly execute all works comprised in such Instructions subject to the provisions of relevant specific conditions of the Contract. In the event of any dispute or difference of opinion the contractor shall refer the matter within 7 (seven) days of the issue of such instruction to the Chief Engineer whose decision shall be final & binding.

3. DISCREPANCIES:

- 3.1** If there are varying or conflicting provisions made in any one document forming part of Contract, the Chief Engineer shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- 3.2** The several documents forming the Contract are to be taken as mutually explanatory of one another, and the order of precedence shall be as follows;
- a) Special conditions
 - b) General preambles to schedule of quantities
 - c) General instructions
 - d) Conditions of contract



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- 3.3 In case of discrepancies between the Schedule of Quantities, the specifications and/or drawings the following order of precedence shall be observed
- (a) Description in Schedule of Quantities
 - (b) Specifications of relevant Trade
 - (c) Drawings; detailed drawings shall be followed in preference to small scale drawings and figured dimension in preference to scale.
 - (d) Indian Standard Specifications of 'BIS'

4. DRAWINGS AND SCHEDULE OF QUANTITIES:

- 4.1 Two complete sets of the Drawings and Specifications and Schedule of Quantities shall be furnished by the employer to the contractor. Two copies of the additional Drawings, if any, shall be furnished within such time as the Chief Engineer may consider reasonable which may be necessary for execution of any part of the work. Such copies shall be kept on the work site and the CE and his representatives shall at all reasonable times have access to the same and they shall be returned to the EE by the Contractor on completion of the contract.

This Contract and the signed Drawings, Specifications and Schedule of Quantities shall remain in the custody of the Employer.

5. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY FOR EXECUTION OF WORK:

- 5.1 Contractor shall provide everything necessary for the proper execution of the work according to the intent & meaning of the Drawings, Priced Schedule of Quantities and Specifications taken together, whether the same may or may not be explicitly shown or described therein provided that the same can reasonably be inferred there from and if the Contractor finds any discrepancy therein he shall immediately and in writing refer the same to the CE whose decision shall be final and binding on the Contractor.
- 5.2 The Contractor shall supply, fix and maintain at his cost during the execution of any work all the necessary Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, Pumping, Fencing, Boarding, Watching and Lighting by night as well as by day, required not only for the proper execution and protection of the said work but also for the protection of the Public and the safety of any adjacent Roads, Streets, Cellars, Vaults, Ovens, Pavements, Walls, Houses, Buildings and all other erections, matters or things and the Contractors shall take down and remove any or all such Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, etc., as occasion shall require or when ordered to do so, and shall fully reinstate and make good all matters and things disturbed during the execution of the work to the satisfaction of the Corporation's Engineer.



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6. **AUTHORITIES NOTICES AND PATENTS:**

- 6.1 The Contractors shall conform to the provisions of any Acts of the Legislature relating to the work and to the Regulations and Bye-Laws of any Authority and or any Water, Lighting and other Companies and/or Authorities with whose system the structure is proposed to be connected and shall before making any variations from the Drawings or Specifications that may be necessitated by so conforming give to the CE written notice specifying the variations proposed to be made and the reasons for making them and apply for instructions thereon. In case the Contractor shall not within 7 (seven) days receive such instructions, he shall proceed with the work conforming with the Provisions, Regulations or Bye-Laws in question.
- 6.2 In particular, the Contractors shall be responsible to Register themselves under the Contract Labour (Regulation & Abolition) Act 1970 and Rules there under and any amendment thereto; they must comply with and carry out all the provisions and obligations under the said Act and Rules and furnish all information to Employer as may be required by it and shall indemnify the Employer against any penalties/claims arising from any default on their part.
- 6.3 The Contractor shall arrange to give all notices required by the said Acts, Regulations or Bye-Laws to be given to any Authority and to pay to such Authority or to any Public Office all fee that may be properly chargeable in respect of the work and lodge the receipts with the Employer.
- 6.4 The Contractors shall indemnify the Employer against all claims in respect of patent, rights, and shall defend all actions arising from such claims unless he has informed the Chief Engineer before any such infringement and received his permission to proceed and shall himself pay all royalties, licence fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof.
- 6.5 The Contractor should observe that his work shall not cause any nuisance to the Public in general and to the neighbouring occupants in particular.
- 6.6 Should the Contractor desire to work on Sundays, Holidays and during night hours, permission in writing from the Corporation's Engineer must be obtained in time. It shall be the responsibility of the Contractor to obtain permission from Civil Authorities, if necessary.



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7. **SETTING OUT WORK:**

- 7.1 The Contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the corrections of the positions, levels, dimensions and alignment of all parts thereof. If at any time any error shall appear during the progress of any part of the work, the Contractor shall at his own cost rectify such error, if called upon, to the satisfaction of the Corporation's Engineer. The Contractor must not commence work until the outlines of the building and Centre line layout have been pegged out and approved by the Corporation's Engineer.

8. **CONTRACTOR IMMEDIATELY TO REMOVE OFFENSIVE MATTER:**

- 8.1 All soil, filth or other matter of an offensive nature taken out of any trench, sewer, drain, cesspool or other place shall not be deposited on the surface, but shall be at once carted away by the Contractor to some pit or place provided by him.

9. **MATERIALS AND SAMPLES:**

- 9.1 All the materials stores and equipment required for the full performance of the Contract must be provided through normal trade channels and must include applicable import duties and all applicable taxes and other charges, if any. They shall be of approved quality and the best of their kind available and the Contractor must be entirely responsible for the proper and efficient carrying out of the work. The Contractor shall order all materials required for the execution of the work from local as well as from outside sources if situation warrants so as early as necessary to the satisfaction of the Corporation's Engineer and to ensure that such materials are on site well ahead of requirement for use in the work. Non – availability of materials in local market will not be an issue behind slow progress of work.
- 9.2 Before ordering such materials, the Contractor shall get samples of the materials approved well in time. Preference shall be given to ISI marked products and approved brands of requisite quality as mentioned in the tender. For materials, which are neither approved brands nor ISI marked, the same shall be got tested from approved laboratories at the Contractor's cost before approval. Approved brand and ISI marked product will also be tested if desired by the CE and if the test results are satisfactory, the cost of testing shall be borne by the Employer otherwise by the Contractor. No claim will be allowed for delay to the progress of work caused by test. If called upon by the Executive Engineer the Contractor shall produce proof for having arranged for the supply of materials well in time.



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- 9.3 The Contractor shall furnish well in time before work commences at his own cost, any samples of workmanship that may be called for by the Corporation's Engineer for his approval and any further samples in case of rejection until such samples are approved. Such samples when approved shall be the minimum standard for the work to which they apply. In case of items like suspended ceiling, partitions, etc. typical sample panels or proto-types shall be erected in position for approval before undertaking work. Rates quoted shall cover for such preliminary work.

10. ACCESS:

- 10.1 Any of the Corporation's Engineers or any persons authorized by any one of them shall at all reasonable time have free access to the work and/or the workshops, factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained and the Contractor shall give every facility to all of them necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Public Authorities, no person shall be allowed on the work at any time without the written permission of the Corporation's Engineer.

If any work is to be done at a place other than the site of the work, the Contractor shall obtain the written permission of the Corporation's Engineer for doing so.

11. CONTRACTOR'S SUPERVISION & MINIMUM REQUIREMENT OF TECHNICAL STAFF:

- 11.1 The Contractor shall either himself supervise the execution of the contract or may appoint a Competent Agent approved by the CE to act in his stead.
- 11.2 Where the contractor is not a qualified Engineer or even if he is so qualified, he cannot in the opinion of C.E., give his full personal attention to the works, he shall at his own expense employ person(s) possessing the qualification and experience as described hereunder as his accredited agent to supervise the works and to receive instructions from Corporation's Engineers. Any directions, instructions or notices given by the Corporation's Engineer to such supervisor(s) shall be deemed to be given to the contractors.

a. FOR WORKS COSTING UPTO Rs. 100 LAKHS :

A qualified resident Engineer having a Government recognized Diploma in relevant branch and minimum of 2 years experience on similar work.



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b. FOR WORKS COSTING MORE THAN Rs. 100 LAKHS & UPTO Rs. 200 LAKHS :

A qualified resident Engineer having a Recognised Degree in relevant branch or equivalent qualification and minimum of 2 years experience on similar work or a recognized Diploma in relevant branch with minimum 5 years experience on similar work.

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c. FOR WORKS COSTING MORE THAN Rs. 200 LAKHS :

i) A qualified resident Engineer having a Recognised Degree in relevant branch and minimum of 3 years experience of such major similar work or a recognized diploma in relevant branch with 8 years experience.

ii) In addition the contractor shall employ suitable number of supervisors with recognized degree / diploma in the relevant branches or recognized qualification & experience in the relevant trades for proper execution of the work as approved by the Chief Engineer.

d. The CE may vary any of the above qualification / experience at his discretion if so warranted by conditions prevailing and applicable to any particular work such as Air-conditioning, HT, and Interiors etc.

e. If the contractor fails to employ suitable person(s) to supervise the work or fails to appoint replacement(s) when necessitated, amount as stipulated in the Appendix to the conditions of contract shall be recovered from the contractor for each Engineer and each supervisor for the period of non-employment.

12. DISMISSAL OF WORKMEN:

12.1 The Contractor shall, on the instruction of the Corporation's Engineer, immediately dismiss from the work any person employed thereon, who may, in the opinion of the Corporation's Engineer, be unsuitable or incompetent or who may misconduct himself and such person shall not be again employed or allowed on the work without the permission of the Corporation's Engineer.

13. DATES OF COMMENCEMENT AND COMPLETION:

13.1 The "Date of Commencement" shall be as stated in the Work Order and the Contractor shall thereupon and forthwith begin the work and shall regularly proceed with and complete the same on or before the "Date of Completion" stated in the Work Order, subject to the provisions for extension of time hereinafter contained.



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14. ASSIGNMENT:

- 14.1 The whole of the work included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the Contract or any part, share of interest therein nor shall he take a new partner without the written consent of the CE and no subletting shall relieve the Contractor from the full and entire responsibility of the Contract or from the active superintendence of the work during its progress.

15. DEVIATION, VARIATION, EXTRA/DEVIATED ITEMS AND PRICING:

- 15.1 The Contractor should note that unless otherwise stated, the tender is strictly on percentage Rate basis and his attention is drawn to the fact that rates for each and every item should be correct, workable and self supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work and no variation i.e. additions, omissions or subtractions shall vitiate the Contract. No liability shall attach to the Employer for any error therein or variation there from.
- 15.2 The contractor may when authorized and shall when directed, in writing by the CE or the Corporation's Engineers, whom the CE may for that purpose appoint, add to, omit from, make alterations in, substitutions for, or vary the works shown upon the Drawings or described in Specifications or included in the priced Schedule of Quantities but the Contractor shall make no additions, omissions, alterations, substitutions or variations without such authorization or direction. A verbal authority or direction by the CE, if confirmed by the contractor in writing within 7 (seven) days, be deemed to have been given in writing.
- 15.3 The rates of such altered, additional or substituted works shall be determined in accordance with the following.
- The net rates or prices in the original tender shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.
 - The net price of the items in the original tender shall determine the value of the items omitted. However, if omissions vary the conditions under which any remaining items of the work are carried out or if the amount of any omission relative to the amount of the whole of the Contract works or to any part thereof shall be such that in the opinion of the Chief Engineer, the net rate or price contained in the Priced Schedule of Quantities or Tender or for any item of work involves loss or expenses beyond that reasonably contemplated by the Contractor and is by reason of such omission rendered unreasonable or inapplicable, the



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Chief Engineer shall fix another rate or price as in the circumstance he shall think reasonable and proper.

- c. If the rate for any altered, additional, or substituted item of work is not specified in the schedule of quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein.
- d. If the rate for altered, additional or substituted item of work cannot be determined in the manner specified above, then such items of work shall be priced on the basis of coefficients of labour and materials as given in the latest CPWD rate analysis handbook and rates for labour and materials wherever applicable shall be the market rate prevailing at the time of execution.
- e. Where such co-efficient are not available in C.P.W.D. rate analysis, the actual Labour/Materials involved and recorded by the Executive Engineer in executing the items shall be considered.
- f. Where extra work cannot be properly measured or valued, the Contractor shall be allowed "Day Work" prices at the net rates stated in the Tender or the Priced Schedule of Quantities or, if not so stated, then in accordance with the local "Day Work" rates and wages for the district, provided that in either case vouchers specifying the date and time (and if required by the EE the names of workmen employed) and materials incorporated be delivered for verification to the EE or his representative at or before the end of the week following that in which the work has been executed. The EE is not bound to recognize the cost of materials furnished in vouchers; the CE at his discretion will fix the price of such materials based upon market value.
- g. While fixing rates of extra items 15% (Fifteen percent only) shall be allowed over & above the basic rate of material (without GST), T & P, water charges and labour to cover all supervision, overheads, profits and all other applicable taxes/cess. GST on works contract will be paid separately.
- h. Where the quantities of any item in the schedule exceeds by 100% in foundation and in plinth, and 50% in super-structure (above plinth), these extra quantities over 100% & 50% respectively will be treated as extra items of work and priced accordingly as above. [Items such as roads, pavements etc. shall be considered as below plinth]. The decision of CE for terming items below or above plinth is final & binding on the contractor.



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- i. For all extra items of work, the contractor should submit to the concerned Corporation's Engineer the necessary particulars along with his analysis and the rate he proposes to claim for consideration within a period of 4 (four) weeks from the time of cropping up of any authorized extra / deviated item. He shall also ensure that all the authorized claims are included in the final bill. If the contractor fails to submit his claim within the stipulated period or the period duly extended by the Corporation's Engineer, then the CE shall proceed to fix the rate for the item(s) and the same shall be final and binding on the contractor.
 - j. The Contractor shall note that Extra/Deviated items claim and/or any other claim whatsoever if submitted after submission of his Final Bill, will not be entertained and considered by the Employer. The Contractor shall not be allowed to make any Additions/ Alterations/ Revisions / Changes/ Modifications/ Variations in the final bill, after the final bill is submitted by him.

16. SUB-CONTRACTORS:

- 16.1 All specialist Merchants, Tradesmen and others, executing any work or supplying, fixing any goods for which provisional sums are included in the Schedule of Quantities and/or Specifications, who may be nominated or selected by the CE, who shall be the final authority are hereby declared to be Sub-Contractors and are herein referred to as nominated Sub-Contractors.
- 16.2 No nominated Sub-contractor shall be employed on or in connection with the work against whom the Contractors shall make reasonable objection or (save where the CE and the Contractor shall otherwise agree) who will not enter into a Contract providing:-
 - a. That the nominated Sub-Contractor shall indemnify the Contractor against the same obligation in respect of the Sub-Contractor as the Contractor is under, in respect of this Contract;
 - b. That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor or his servants or agents or any misuse by him or them of any scaffolding or other plant or the property of the Contractor or under any Workmen's Compensation Act in force.

17. THIRD PARTY LIABILITY, DAMAGE TO NEIGHBOURING PROPERTY, LOSS OF MATERIAL AND WORKMEN'S COMPENSATION:

- 17.1 The Contractor shall be responsible for all injury to persons, animals or things, and for all damage to structural and/or decorative part of property which may arise from the operations or neglect of himself or of any Sub-contractor or any of his Sub-Contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected



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with the carrying out of his Contract. This Clause shall be held to include inter-alias, any damage to Building, whether immediately adjacent or otherwise and any damage to roads, streets, footpaths, bridges, or ways as well as all damage caused to the building, and the works forming the subject of this Contract by frost, rain, wind or other inclemency of the weather. The Contractor shall fully indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and also in respect of all and any claim made in respect of injury or damage under any acts of Government or otherwise and also in respect of any award or compensation or damages consequent upon such claim.

- 17.2 The Contractor shall fully indemnify the employer against any loss, damage or deterioration for whatever reason, of all materials brought at site and especially material supplied by or paid for partly or wholly by the employer.
- 17.3 The Contractor shall reinstate all damage and loss of every sort mentioned in this Clause so as to deliver up the whole of the Contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of the third parties.
- 17.4 The Contractor shall fully indemnify the Employer against all claims which may be made against the Employer by any member of the Public or other third party in respect of anything which may arise in respect of the works or in consequence thereof.
- 17.5 The contractor shall at his own expense arrange to effect from the date of commencement & maintain till the date of virtual completion of contract, with any licensed general insurance company, a **POLICY OF INSURANCE(Contractor's All Risk Policy)** to cover all such risks detailed above viz. loss, damage & third party liability etc. The policy shall be of an amount as mentioned in Appendix to Conditions of contract and in the joint names of the employer & contractor and shall be deposited with the employer and renewed as required from time to time during the currency of the contract.
- 17.6 The Contractor shall also fully indemnify the Employer against all claims which may be made upon the Employer, whether under the **WORKMEN'S COMPENSATION ACT** or any other **STATUTE** in force during the currency of this Contract or at Common law in respect of any Employee of the Contractor or any Sub-Contractor and shall at his own expense effect and maintain until the Virtual completion of the work, with "licensed General Insurance Company" a **POLICY OF INSURANCE** of adequate amount in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the employer & renew the same as required from time to time during the currency of the Contract.



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- 17.7 The Contractor shall be responsible for anything, which may be excluded from the Insurance Policies above referred to, and also for all other damage to any property arising out of or incidental to the negligence or defective carrying out of the Contract.
- 17.8 The amount of insurance to be taken for the above policies shall be for an amount mentioned in "Appendix to conditions of contract and in the joint name of employer and the contractor before issue of acceptance letter based on the tendered cost, nature of work, location of site, local hazards etc.
- 17.9 In case of default by the Contractor to submit insurance policies (Workmen' compensation and CAR) as provided above or having failed to renew the same as required in a timely manner then the employer may proceed to obtain/renew the above above policies on behalf of the contractor and apart from the financial expenses born to obtain/renew such policies employer shall deduct penalty amounting to Rs.10,000/- for each procurement/extension of such policies.
- 17.10 The Contractor shall also fully indemnify the Employer in respect of any costs, charges or expenses arising out of any claim or proceedings at law and also in respect of any award of compensation of damages arising there from.
- 17.11 The Employer shall be at liberty and is hereby empowered to deduct fully the amount of any damages, compensation costs, charges and expenses arising or accruing any such claim of damage from any sum or sums due or to become due to the Contractor.

18. DELAY AND EXTENSION OF TIME:

- 18.1 If the works be delayed due to any of the following:
- (a) by force majeure ,
 - (b) by reason of any exceptionally inclement weather,
 - (c) by reason of proceedings taken or threatened by, or disputes with, adjoining or neighbouring owners, or public authorities,
 - (d) by the work, or delays, of other Contractors or Tradesmen engaged by the Employer,
 - (e) by reason of any additional work or instruction ordered by the employer,
 - (f) by reason of Civil Commotion, local commotion of workmen or strike or lock-out affecting any of the building trades,
 - (g) in consequence of the Contractor not having received in due time necessary instructions from the CE for which he shall have specifically applied in writing,
 - (h) from other causes which the CE may certify as beyond the Control of the Contractor,
 - (i) by reason of non-payment of interim certificate at specified time,



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Then upon the happening of any such event causing delay, the contractor shall immediately, give notice thereof in writing to the Corporation's Engineer, but shall nevertheless use constantly his best endeavours to make good this delay.

- 18.2 Request for extension of time shall be made by the contractor **at the earliest** of the event causing delay.
- 18.3 In case of strike or lockout the Contractor shall give written notice thereof to the CE as soon as possible but he shall nevertheless constantly use his endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the CE to proceed with the work.
- 18.4 The CE shall make a fair and reasonable assessment of the delay and grant extension of time accordingly. Such extension shall be communicated to the contractor by the Corporation's Engineer immediately within **30 (Thirty) days of the date of receipt of request for extension**. Non-application by the contractor for extension shall however not be a bar for giving fair and reasonable extension which shall be as decided by the CE.
- 18.5 The decision of the CE as communicated by the Corporation's Engineer to the contractor on the extension of time shall be final & binding.
- 18.6 No claim in respect of compensation or otherwise, howsoever arising, as a result of extension granted under the above conditions shall be admissible.

19. DAMAGE FOR NON-COMPLETION:

- 19.1 If the Contractor fails to complete the work by the date of completion stated in the "Appendix to Condition of Contract" or within time properly extended under Clause (18) hereof and the CE certifies in writing that in his opinion the same ought, reasonably so, to have been completed, the Contractor shall pay or allow the Employer the sum named in the Appendix as "Liquidated Damages" for the period during which the said works shall so remain incomplete and the Employer may deduct such damages from any money CONTRACTOR due to the Contractor. In case liquidated damages in accordance with the above provision accrue to maximum limit as mentioned in the Appendix to the Conditions of the Contract, the Chief Engineer shall be at liberty to rescind the Contract and to get it completed entirely at the risk and cost of the Contractor through any other agency he decides to appoint. All extra expenses incurred shall be recoverable



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from the money due to Contractor or lying to his credit with the Employer against the present or any other Contract.

20. FAILURE BY CONTRACTOR TO COMPLY WITH CE'S INSTRUCTIONS :

- 20.1 If the Contractor after receipt of written notice from the CE, requiring compliance with such further Drawings and/or his instructions, fails within 7 (seven) days to comply with the same the CE may employ and pay other persons to execute any such work whatsoever as may be necessary to give effect thereto and all additional costs incurred in connection therewith shall be deducted from any money due or to become due to the Contractor.

21. PAYMENT OF BILLS :

a. MEASUREMENT OF WORKS

- 21.1 The EE may, from time to time, intimate the contractor that he requires the work to be measured and the contractor shall forthwith attend or send a qualified representative to assist the EE or his representative in taking such measurements and calculations and to furnish all particulars or to give all assistance required by either of them. All items having a financial value shall be entered in the Measurement Book. All measurements and levels shall be taken jointly by the Contractor or his authorized representative and Site Engineer or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by both the parties in token of their acceptance. If any of the measurements recorded are objected by any one of the party, a note shall be made to that effect with reason, signed by both parties and referred to Corporation's Engineer whose decision in the matter shall be final and binding. Measurements can also be recorded through electronic medium where specifically approved by Chief Engineer.
- 21.2 Should the contractor not attend or neglect or omit to send such representative, then the measurements taken by the EE or representative shall be taken to be correct measurements of the work. Wherever not specified in the "Schedule of Quantities or elsewhere" the mode of measurements shall be in accordance with the latest brochure issued by the Indian Standards Institutions (now renamed as Bureau of Indian Standards) on "Method of measurement of Building works".
- 21.3 The Contractor or his representative may, at the time of measurement, take such notes and measurements as he may require.



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- 21.4 All authorized extra work. Omissions and all variations made without the Chief Engineer's knowledge, if subsequently sanctioned by him in writing, shall be included in such measurement.
- 21.5 If the contractor or his authorised representative does not record the measurements periodically for the completed works, then the site Engineer shall take measurements after giving notice in writing of at least 3 (three) days. Measurements recorded in the absence of Contractor shall be intimated with a copy of such measurements to the contractor. If the contractor fails to countersign or record objections within a week from the date of measurement, then such measurement recorded in absence by the Site Engineer shall be deemed to be accepted by and binding on the Contractor.
- 21.6 The Contractor shall, without any extra charge provide all assistance with every appliance, labour and other things necessary for taking measurements (either by him or by site Engineer) and recording levels including test checking of such measurements by any person authorised by the Employer.
- 21.7 All work shall be measured net as fixed in its place. All measurements of 'cutting' shall be held to include for the consequent wastage on the materials used.
- 21.8 Except where any general or detail description of the works expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items for which procedure is not covered in the specification, measurement shall be taken in accordance with the relevant Standard Method of measurement issued by BIS and if for any item no such standard is available then a mutually agreed method shall be followed.
- 21.9 Measurements of all hidden/concealed items of work including extra items if any, such as, work in foundations including excavations, plinth filling, masonry, concrete etc. steel in all R.C.C. work, pipe to be encased etc. shall be jointly recorded by the contractor and Site Engineer or his authorised representative before they are covered up. Immediately after the work is ready for measurements, Contractor will give specific notice to the Site Engineer for recording the measurements. If the Site Engineer or his authorised representative fails to record the measurements, the Contractor will refer the matter to the Corporation's Engineer for instructions, but in no case shall cover up work without the latter's permission.



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22. PAYMENTS:

- 22.1 The contractor shall be paid by the Employer, from time to time, by installment under Interim Certificate to be issued by the EE to the Contractor on account of the work executed, when in the opinion of the EE, work to the approximate value named in the Appendix to the conditions of Contract as "Value of work for Interim certificate" (or less at the reasonable discretion of the Executive Engineer) has been executed in accordance with this contract, subject however to a retention of the percentage of such value mentioned in Appendix to the Conditions of Contract hereto as "Retention percentage on account of Security Deposit". The Interim Certificate shall be based upon interim Bills of Running Account Bills to be prepared by the Contractor and supported by the detailed measurements. The EE may include in the Interim Certificate such amount as he may consider proper on account of materials delivered upon the site by the contractor for use in the work, after satisfying price of materials on basis of vouchers/bills submitted by the contractor.

In case any material have been supplied by the Employer to the contractor in connection with the work, necessary recovery for the same shall be effected from the bills of the contractor by the CE at the issue rates of such materials as stipulated while calling for tenders and in other cases at a stock rate or market rates of such materials, whichever is higher. The contractor will, however, not be entitled to modify his rates for items of work requiring use of such materials and when the work has been virtually completed and the CE shall have certified in writing that it has been so completed on the basis of detailed measurements and after obtaining written endorsement by the CE that the CE/ Deputy Chief Engineer has made a final Scrutiny and that there are no disputed items, rates of quantities, the contractor shall be paid by the Employer in accordance with certificate to be issued by the CE the sum of money named in the Appendix as "Installment after Virtual Completion" and the contractor shall be entitled to the payment of the final bill in accordance with the final certificate to be issued in writing by the Deputy Chief Engineer with the approval of the CE with expiration of the period referred to as "Defects Liability Period", in the Appendix to Conditions of Contract hereto from the date of Virtual Completion or as soon after the expiration of such period as to work shall have been finally completed and all defects made good according to the true intent and meaning hereof, whichever shall last happen.

Provided always that the issue by the EE of any certificate during the progress of the works or at after their completion shall not relieve the contractor from his liability under Clause (2) in cases of fraud, dishonesty or fraudulent concealment relating to the work of materials or to nay matter dealt with in the certificate in case of all defects and insufficiencies in the work or materials which a reasonable examination would not have disclosed. No certificate of the Deputy Chief Engineer or Executive Engineer shall of itself be conclusive evidence that any work or materials to which it related are in accordance with the contract.



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The Chief Engineer may make any correction in previous certificate which shall have been issued by the Executive Engineer/Superintending Engineer.

Payment upon the EE's certificate shall be made within the periods named in the Appendix "Period for honouring Interim Certificate" after such a certificate has been delivered to the Employer.

The CE shall have power to withhold any certificate if the work or any parts thereof are not being carried out to his satisfaction.

22.2 Provided always that the issue by the Corporation's Engineer of any Certificate during the progress of the works or after their completion shall not relieve the Contractor from his liability in cases of fraud, dishonesty or fraudulent concealment relating to the work or materials or any matter dealt with in the Certificate in case of all defects and insufficiencies in the work or materials which a reasonable examination would not have disclosed. No Certificate of the Corporation's Engineer shall of itself be conclusive evidence that any work or materials to which it related are in accordance with the Contract.

22.3 Payment upon the Corporation's Engineer's Certificate shall be made within the periods named in the Appendix "Period for honouring Interim Certificate" after such a Certificate has been delivered to the Employer;

22.4 The CE shall have power to withhold any Certificate if the work or any parts thereof are not being carried out to his satisfaction. However, if the final certificate is not issued within the period as mentioned under Clause No.22.5, 26 due to Audit para by CTE etc., the amount involved for such items of deficient work as decided by Chief Engineer would be with held. The same would be allowed as agreed upon by the CTE & the Chief Engineer and the final certificate would accordingly be issued and final bill passed. For such withheld amount, a simple interest @ 6% per annum shall be paid to the contractor along with the said payment. Such interest will be calculated from the last date (as mentioned in Appendix to Conditions of Contract) for honoring final certificate till the date of payment.

22.5 The measurements and valuation in respect of the Contract shall be completed within the "period of Final Measurement" stated in the Appendix or if not so stated then within six months of the completion of the contract works as defined in Clause (26) hereof. No further claim shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

22.6 The final certificate shall be based on the submission of final measurements or overall measurements of the work (to be taken if so directed by Corporation's Engineer) with all relevant details similar to 22.1 above. The CE may direct the Contractor to resubmit details if the same are found incomplete to issue



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the final certificate and his decision to accept the details is final and binding on the Contractor. Final Certificate shall be issued by the CE after the conditions are met with as per 22.4, 22.5, 22.6 and 26 and contractor's submission of **No Claim certificate cum receipt** as per the Proforma given in Appendix to Conditions of Contract.

23. SECURED ADVANCE AGAINST MATERIALS

23.1 The Contractor shall be entitled to be paid advance along with interim bill against materials which are not perishable and which are in the opinion of Corporation's Engineer, required for the works and have been brought on site for incorporation in the work but have not been so incorporated and are safeguarded against loss due to any cause whatsoever, (refer clause no-17). The amount of such advance against materials shall be arrived at on the following basis:

a) 80% of the market value of materials required for the work and brought on site.

OR

80% of the cost of such materials (brought on site) as derived from the relevant accepted tender rate for the particular item involving such materials, whichever is lower.

b) Such advance payment made against materials shall be recovered from or adjusted from the interim bills as and when the materials are utilized in the work.

Examples of certain perishable materials on which no advance shall be paid are Sand, Paint, Bitumen, Hard Boards/Soft Boards and other paper products, Petroleum Products, Coal Tar, and Insulating Boards etc.

DELETED

23.2 In case of dispute, the decision of the Chief Engineer on whether advance payment can be made against specific materials shall be final and binding.

24. UNFIXED MATERIALS AND EQUIPMENTS:

24.1 All tools, plants and materials brought to the site by the Contractor shall vest in the Employer and shall not be removed from the site of works except by permission of the Corporation's Engineer in writing. The Employer shall have a lien on these materials and plants.

25. REMOVAL OF IMPROPER WORK:

25.1 The Corporation's Engineer shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or as may be specified in the order, of any materials, which in their opinion are not in accordance with the Specifications or instructions, the substitution of proper materials and the removal and proper re-execution of any



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work executed with materials or workmanship not in accordance with the Drawings and Specifications or Instructions and the Contractor shall forthwith carry out such an order at his own cost. In case of default on the part of the Contractor to carry out such an order, the CE shall have the power to employ other persons to carry out the same and all expenses consequent thereon or incidental thereto as certified by the EE shall be borne by the Contractor and may be deducted from any amounts due or that may become due to the Contractor.

26. VIRTUAL COMPLETION:

- 26.1 The work shall be completed in accordance with the Contract and to the entire satisfaction of Chief Engineer. All unused materials, tools, plants, scaffoldings, temporary structures, hutments and things belonging to the Contractor shall be removed and the site of works cleared of rubbish and all waste materials by the contractor at his own expenses and delivered up tidy to the employer. After completion of the work, the contractor will serve a written notice to the CE to this effect. The Chief Engineer after satisfying himself shall thereupon approve the virtual completion. The Defect Liability Period shall commence from the date of such certification.

27. DEFECTS AFTER COMPLETION:

- 27.1 The defects, shrinkage, settlements or other faults, which may appear within "the Defects Liability Period, stated in the "Appendix to the Conditions of Contract" or if not stated then, within 60 (six) months after virtual completion of the work, arising on account of materials or workmanship not in accordance with the Contract shall, upon the directions in writing of the Corporation's Engineer and within such reasonable time specified therein, be amended and made good by the Contractor at his own cost unless the CE shall decide that he ought to be paid for such amendment and for making good, and in case of default, the CE may employ and pay other persons to amend and make good such defects, shrinkage, settlement or other faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be recovered from any monies due or that may become due to the Contractor. The CE may in lieu of such amending and making good by the Contractors, deduct from any money due or that may become due to the Contractor, a sum to be determined by the CE equivalent to the cost of amending such work. Should any defective work have been done or materials supplied by any Sub-Contractor employed on the work, who has been nominated or approved by the CE as provided in Clause No.16 the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subjected to the provisions of this Clause and Clause No.2 hereof. The Contractor shall remain liable under the provision of this Clause notwithstanding the payment of any Certificate or the passing of any accounts.



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28. PROVISIONAL SUMS, APPLICATION OF:

- 28.1 For all the work listed under items for which provisional sums are provided in the tender, the CE reserves the right to invite separate tenders or select or order from any manufacturer or firms at his discretion and reserves to himself the right of paying direct to persons or firms for any such work. The Contractor will not have any claims over these items, but if tenders are invited for such items, he will also be invited to quote along with others.
- 28.2 If ordered by the CE, Contractor shall be required to carry out provisional sum items at the same conditions and rates as applicable for this Contract.

29. OTHER PERSONS ENGAGED BY THE EMPLOYER:

- 29.1 CE reserves the right to execute any work not included in this Contract, which he may desire to have carried out, by other persons and the Contractor shall allow all reasonable facilities and the use of his scaffolding and plant for the execution of such work, but is not required to provide any special plant or materials for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the work included in the Contract and the Contractor shall not be responsible for any damage or delay which may happen to or be occasioned by such work.

30. SUSPENSION BY THE CONTRACTOR:

- 30.1 If the Contractor except on account of any legal restraint upon the Employer preventing the continuance of the work, shall suspend the work or in the opinion of the CE shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall make default in respect of Clause No.2, the Employer shall have the power to give notice in writing to the Contractor requiring that the work be proceeded within a reasonable manner and with reasonable dispatch. Such Notice shall purport to be a notice under this clause. After such notice is given, the Contractor shall not be at liberty to remove from the site of the work or from any ground contiguous thereto any plant or materials belonging to him, which shall have been placed thereon for the work and the Employer shall have a lien upon all such plant and materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Contractor shall fail for 7 (seven) days after such notice given to proceed with the work as therein prescribed, the CE may proceed as provided in Clause No.31.

31. DETERMINATION OF CONTRACT BY EMPLOYER:

- 31.1 If the Contractor (being an individual or a firm) commit any "Act of Insolvency" or shall be adjudged as Insolvent or shall make an assignment or composition of the greater part in number or amount of



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his creditors or shall enter into a deed of assignment with his creditors, or being an Incorporated Company shall have an order made against him or pass an effective resolution for winding up either compulsorily or subject to the supervision of the Court or Voluntarily or if the official Assignee of the Contractor shall repudiate the Contract or if the official Assignee or the Liquidator in any such winding up shall be liable within 7 (seven) days after notice to him requiring him to do so, to show to the reasonable satisfaction of CE that he is able to carry out and fulfill the Contract and if required by the CE to give security therefore or if the Contractor (whether an Individual Firm or Incorporated Company) shall suffer execution to be issued or if the Contractor shall suffer any payment under this Contract to be attached by or on behalf of any of the creditors of the Contractors or if the contractor shall assign or sublet the Contract without the consent in writing of the CE first obtained or if the Contractor shall charge or encumber this Contract or any payment due or which may become due to the Contractor there under, or if the CE shall certify in writing that in his opinion the Contractor,

- a. has abandoned the Contract, or
- b. has failed to commence the work, or has without any lawful excuse under these conditions suspended the progress of the work for 7 (seven) days after receiving from the CE written notice to proceed, or
- c. has failed to proceed with work with such due diligence and failed to make such due progress as would enable the work to be completed within the time agreed upon, or
- d. has failed to complete the work within the stipulated date including authorized extensions or
- e. has failed to remove the materials from the site or to pull down and replace the work within 7 (seven) days after receiving a written notice from the Corporation's Engineer that the said materials or work were condemned or rejected or
- f. has neglected or failed persistently to observe and perform all or any of the acts, matters, or things, by this Contract to be observed and performed by the Contractor for 7 (seven) days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same, or
- g. has to the detriment of good workmanship or in defiance of the CE's instructions to the contrary sub-let any part of the Contract.

then and in any of the said causes, the CE notwithstanding any previous waiver, after giving 7 (seven) days notice in writing to the Contractors, determine the Contract, but without thereby affecting the powers of the CE or the obligations and liabilities of the Contractor, the whole of which shall continue to be in force as fully as if the contract has not been so determined and as if the work subsequently executed had been executed by or on behalf of the Contractor. And further, the Employer, his agents or servants, may enter upon and take possession of the work and all plant,



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tools, scaffolding, sheds, machinery, steam and other power, utensils and materials, lying upon the premises or the adjoining lands or road and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the work or by employing any other Contractors or other person or persons to complete the work, and the Contractor shall not in any way interrupt or do any act, matter, or thing to prevent or hinder such other Contractor, other persons or person employed for completing and finishing or using the materials and plant for the work. When the work shall be completed or as soon thereafter as convenient, the CE shall give a notice in writing to the Contractor to remove his surplus materials and plant and should the Contractor fail to do so within a period of 14 (Fourteen) days after receipt thereof by him, the Employer may sell the same by public auction and shall give credit to the Contractor for the amount so realized. The CE shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by the Employer for the value of the said plant and materials so taken possession of by the Employer and the expense or loss which the Employer shall have been put to in getting the work to be so completed, and the amount, if any, owing to the Contractor and the amount, which shall be so certified shall thereupon be paid by the Employer to the Contractor or by the Contractor to the Employer, as the case may be and the Certificate of the CE shall be final and conclusive between the parties.

32. TERMINATION OF CONTRACT BY CONTRACTOR:

- 32.1 If payment of the amount payable by the Employer under any Certificate of the EE shall be in arrears as unpaid for 60 (sixty) days after notice in writing requiring payment of the amount with interest of aforesaid shall have been given by the Contractor to the Employer, or if the work be stopped for six months under order of the CE or by any injunction or other order of any Court of Law, then and in any of the said cases, the Contractor shall be at liberty to determine the Contract by notice in writing to the Employer and he shall be entitled to recover from the Employer payment for all the work executed and for any loss, he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract.
- 32.2 In arriving at the amount of such payment, the net rates contained in the Contractor's original tender shall be followed or where the same may not apply, valuation shall be made in accordance with Clause No.15 hereof.

33. DETERMINATION OF CONTRACT DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK:

- 33.1 If at any time after the acceptance of the tender, the Employer shall for any reasons whatsoever not require the whole or any part of the works to be carried out, the CE shall give notice in writing to the Contractor who shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the Execution of the whole of the works.



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The Contractor shall be paid at contract rates for the full amount of work executed and in addition:

- a. The cost at site of all surplus approved materials collected for incorporation in the work, which the Contractor does not wish to retain and which shall thereafter become the property of the Employer.
- b. Where the Contractor desires to retain the surplus of approved materials (excepting materials supplied by the Employer or obtained in Employer's name, which shall, in any case, be returned to the Employer) the cost of handling and cartage charges for removal from the site to a reasonable distance not exceeding 25 kms.
- c. If upon the determination of the Contract under this condition, the Contractor is of the opinion that he has suffered hardship by reason of the operation of these conditions, he may refer the circumstances with full details to the Chief Engineer, who on being satisfied that such hardship exists or has existed, shall make such allowance, if any as in his opinion is reasonable, and his decision shall be final, conclusive and binding.

34. DISPUTES TO BE FINALLY DETERMINED BY CHIEF ENGINEER:

34.1 The Instruction, Decision, Opinion, Direction, Certificate or Valuation of the CE with respect to all or any of the matters under Clause (2), (3), (5), (6), (9), (14), (15), (18), (23), (27), (30), (31) and (33) hereof (which matters are herein referred to as EXCEPTED MATTERS) shall be final and conclusive and binding on the parties hereto and shall be without appeal. Any other Decision, Opinion, Direction, Certificate or Valuation of the CE or any refusal of the CE to give any of the same shall be subject to the right of Arbitration and review as given under Clause No.36.

35. SECURITY DEPOSIT AND PERFORMANCE GUARANTEE:

35.1 The Security Deposit shall be 5% of the estimated Tender Amount. The Security deposit can be either in cash or in the form of Bank Guarantee. In case of cash option, the EMD shall be retained as part of Security Deposit and the balance Security Deposit shall be deducted from the bills of the contractor. If the 50% of EMD is submitted in the form of Bank Guarantee and the contractor wants to avail cash option i.e. deduction of security deposit from the bills then the contractor has to deposit a Demand Draft / Pay Order in the name of Life Insurance Corporation of India payable at Patna amounting to 50% of EMD in lieu of Bank Guarantee submitted towards EMD. Once this amount is deposited the contractor can avail cash option for security deposit and the bank guarantee submitted towards EMD shall be returned. In case of Bank Guarantee option, the contractor shall furnish one Bank Guarantee for full amount of Security Deposit valid till end of the completion work including extension of the time if any.



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- 35.2 Performance Guarantee shall be 3% of Contract Amount and shall be only in the form of Bank Guarantee valid up to completion of Defect Liability Period of 5 Years.
- 35.3 The Bank Guarantee shall be from any nationalized / scheduled bank preferably at Patna or where a Branch / Division of LIC of India exist.
- 35.4 Bank Guarantee/s (BGs) against Security Deposit (SD) and Performance Guarantee (PG) shall be executed as per the specimen pro-forma at ANNEXURE-B and ANNEXURE-C. The Bank Guarantee towards Security Deposit shall be submitted within 15 days of issuance of Acceptance Letter. The Security Deposit shall be refunded after completion of Work.

- 35.5 In case of failure by the contractor to furnish the Bank Guarantee against Performance Guarantee as per Cl.35.2 by the stipulated date or extended date if any, Employer shall without prejudice to any other right or remedy available in law, be at liberty to cancel the tender, which may entail forfeiture of the Earnest Money of contractor absolutely.
- 35.6 50% of the Security Deposit (cash option) shall be refunded after the certificate of virtual completion is issued to the contractor & provided that the employer has no claim for forfeiture of part or whole of the said deposit.
- 35.7 Balance 50% of Security deposit will be refunded to the contractor after the satisfactory completion of the defects liability period, subject to deductions for any appropriations thereof required to be made by the employer as per the conditions of contract.
- [DELETED]**
- 35.8 If one Bank Guarantee in lieu of total Security Deposit is furnished, the same will be released only after the successful completion of Defects Liability period subject to any appropriations as previously mentioned.
- 35.9 If two Bank Guarantees in lieu of Security deposit are furnished, the First Bank Guarantee will be released after the certificate of Virtual completion is issued to the contractor and second shall be released after the satisfactory completion of Defects Liability Period subject to any appropriations as previously mentioned.



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- 35.10 **Bank Guarantees towards Performance Guarantees shall be released after successful completion of 5 years of Defect Liability Period and guaranteed annual generation of 1380 KWH/KW_p in a year (considering 300 sunshine days) by the installed solar power generating system location wise. Any amount spent by LIC of India due to failure on the part of the contractor to attend the defects including the periodic maintenance in every 15 days during the Defect Liability Period shall be recovered from the contractor before the release of Bank Guarantee towards Performance Guarantee.**

35.11 Contractor shall keep the Security Deposit and Performance Guarantee, where applicable, replenished to its full value whenever any recovery or appropriation there from occurs. The employer reserves the right to do so from any money(s) due to the contractor laying with them.

[DELETED]

- 35.12 The Contractor should note that no interest would be allowed on any part of the Security deposit and Performance Guarantee.

- 35.13 No deductions will be effected from the bills when the total security deposit is paid in the form of Bank Guarantee(s) and the E.M.D shall be refunded after acceptance of Bank Guarantee(s).

- 35.14 In the event of failure by the contractor to submit Bank Guarantee(s) by the specified / extended date, recovery of Security deposit shall be affected from the R.A Bills.

- 35.15 In all cases of Bank Guarantees, there shall be further provision of claim period of 6 months. If the contract period is extended for any reason whatsoever, the contractor shall obtain the required extensions to the Bank Guarantee(s).

36. SETTLEMENT OF DISPUTES, ARBITRATION:

- 36.1 All disputes and differences of any kind whatsoever arising out of or in connection with the Contract or the carrying out of the work (whether during the progress of the work or after its completion and whether before or after determination, abandonment or breach of the Contract) shall be referred by the Contractor to the Chief Engineer within 15 (fifteen) days of any such matter arising.

The Chief Engineer shall upon receipt of such reference/s will arrange to enter all such dispute(s) on the date of actual receipt in his office in a register and serially numbered. The receipt of the



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reference shall be acknowledged by the Office of Chief Engineer. However mere acknowledgement of receipt of claim does not entail that the claim is admitted or accepted.

The Chief Engineer shall thereafter constitute a three member committee comprising of Officers not below the rank of Executive Engineer/ADM within 15 working days of reference made by contractor and delivered at Chief Engineer's Office to examine the disputes and submit its report with documentary evidence to Chief Engineer within 45 days of reference made. The Chief Engineer shall give his decision within 60 days from the date of reference after hearing the Committee and Contractor.

If the contractor be dissatisfied with the decision of the Chief Engineer, other than the EXCEPTED MATTERS, then and in any such case, the Contractor shall refer the matter to Executive Director (Engineering), who in turn after hearing Chief Engineer and Contractor shall give his decision in writing within 30 (Thirty) working days from the day the referred matter is received in his office.

If the contractor still be dissatisfied with the decision of the Executive Director (Engineering), then and in any such case, the contractor shall within 30 (Thirty) working days after receiving notice of such decision, give a written notice to the Executive Director (Engineering) requiring that such matters in dispute (other than the Excepted Matters) be arbitrated upon. In case the contractor fails to serve the written notice on any or all the issues in dispute within the aforesaid time period, the decision conveyed by the Executive Director (Engineering) shall be taken as final, binding and conclusive and shall not be open to arbitration.

- 36.2 Any disputes or differences that the employer may have with the contractor shall also be referred to Arbitration.
- 36.3 All disputes between the parties to the contract (other than those for which the decision of the CE or any other person is by the contract expressed to be final & binding) shall after written notice by either party to the contract to the other of them be referred to sole arbitration by an Arbitrator to be appointed by the Executive Director (Engineering), which shall be final and binding.
- 36.4 If the arbitrator so appointed resigns his appointment or vacates his office or is unable or unwilling to act due to any reason whatsoever, the appointing authority shall appoint a new arbitrator in his place.
- 36.5 Unless both the parties agree in writing, reference of such disputes to arbitration shall not take place until after the completion or alleged completion of the work or termination or determination of contract.



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- 36.6 The Sole Arbitrator shall determine all matters in dispute other than EXCEPTED MATTERS (referred in Cl.No.34) which shall be referred to the Sole Arbitrator.
- 36.7 The Arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act 1996 or any statutory modifications thereof.
- 36.8 The Contractor hereby also agrees that Arbitration under this Clause shall be a condition precedent to any right of action under the Contract.



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ANNEXURE – 'A'

**PROFORMA FOR
ARTICLES OF AGREEMENT**

ARTICLES OF AGREEMENT made at.....this.....day of20..... between THE LIFE INSURANCE CORPORATION OF INDIA, a body corporate constituted and established by the Life Insurance Corporation Act, 1956 (Act 31 of 1956) and having its Central Office at "Yogakshema", Jeevan Bima Marg, Mumbai and its Zonal Office at hereinafter called the Employer (which expression shall include its successors and assignees wherever context or meaning shall so require or permit) of the one part and M/s (hereinafter called **"The Contractor"**) of the other part.

WHEREAS the Employer is desirous of carrying out **SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170 KWp (50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50 KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).** and has prepared drawings and specifications and the Schedule of Quantities which have been signed by or on behalf of the parties hereto.

AND WHEREAS the Contractor has agreed to execute upon and subject to the conditions and instructions set forth herein (hereinafter referred to as **"the said Conditions"**) the works shown upon the said drawings and /or described in the said Specifications and included in the said Abstract Schedule of Quantities at the percentage rates therein set forth amounting to the contract sum of Rs..... hereinafter referred to as **"the said contract Amount"**.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said Contract Amount to be paid at the times and in the manner set forth in the said conditions, the contractor shall upon and subject to the said Conditions execute and complete the works shown upon the said Drawings and described in the Specifications and/or the priced Schedule of Quantities.
2. The Employer shall pay the contractor the said Contract Amount or such other sum as shall become payable for the items and in the manner hereinafter specified in the said conditions.
3. The said Conditions and Appendices thereto shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by and submit themselves to the conditions and perform the Agreement in their part respectively in such conditions contained.
4. All disputes arising out of or in any way concerned with this Agreement shall be deemed to have arisen in _____ and only the Courts in _____ shall have jurisdiction to determine the same.
5. The contract comprises :-

CONTRACTOR

CHIEF ENGINEER



LIFE INSURANCE CORPORATION OF INDIA
 EAST CENTRAL ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
 "JEEVAN DEEP", EXHIBITION ROAD, PATNA – 800 001
 PHONE: 0612-2501118/2503014/2501103,
 E-mail: ecz_engg@licindia.com
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-
- i) Tender Documents Serial Pages.....
 ii) Subsequent Correspondence Serial Pages.....
 iii) Architectural Drawings Serial Pages

6. Only () alterations have been made in these documents and as evidence that these alterations were made before the execution of Contract Agreement, they have been initialed by the contractor and.....
 _____Engineer, _____ Zone, Life Insurance Corporation of India
 _____. The said officer is hereby authorised to sign and initial on the Employer's behalf, the documents forming part of this contract.

7. IN WITNESS WHEREOF THE Official seal of the LIFE INSURANCE CORPORATION OF INDIA, _____ ZONE, was thereto affixed and signed on its behalf by the Chief Engineer and by _____ on behalf of the Contractor/s on the dates respectively mentioned against their signatures in the presence of the witnesses whose signatures are also appended.

In the presence of

CHIEF ENGINEER

1. Signature :

FOR AND ON BEHALF OF THE
 LIFE INSURANCE CORPORATION
 OF INDIA

Name :

Address :

Date :

2. Signature :

Name :

Address :

In the presence of

1. Signature :

FOR AND ON BEHALF OF THE
 CONTRACTOR
 M/S

Name :

Address :

Date :

2. Signature :

Name :

Address :

ANNEXURE – 'B'

LIFE INSURANCE CORPORATION OF INDIA

CONTRACTOR

CHIEF ENGINEER



LIFE INSURANCE CORPORATION OF INDIA
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(Refer Clause No. 35 of Conditions of Contract)

FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT
IN INDIVIDUAL CONTRACTS

To

THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at _____ in the State of _____ (hereinafter called '**the Corporation**') which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under terms and conditions of contract (vide its acceptance letter No. _____ dated _____) made between _____ (hereinafter called the said Contractor) and the Corporation in connection with _____ (hereinafter called '**the said contract**') to accept a Deed of Guarantee and Indemnity as herein provided for Rs. _____ from the _____ in lieu of the Security Deposit to be made by the contractor and/or in lieu of the deduction to be made from the Contractor's bills, for the due fulfillment by the said contractor of the terms and conditions contained in the said contract, we the _____ (hereinafter referred to as '**the said Bank**') and having our office at _____ do hereby undertake and agree to indemnify and keep indemnified the Corporation from time to time to the extent of Rs. _____ (Rupees _____ only) against any loss or damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation by reason of any breach or breaches by the said contractor in respect of the said contract or of any of the terms and conditions contained in the said contract, or in respect of all its claims for money and / or material found due and recoverable from the said contractor and to unconditionally pay the amount claimed as such by the Corporation on demand and without demur to the extent aforesaid.

2. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time on account thereof and the decision of the Corporation in this respect shall be final and binding on us.

3. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity from time to time to vary any of the terms and conditions of the said



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contract or to extend time of performance by the said contractor, or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever, which under the law-relating to sureties would but for this provision have the effect of so releasing the Bank from its liability.

4. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee and Indemnity herein contained shall be enforceable against the said Bank, notwithstanding any security which the corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

5. Notwithstanding anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only). The guarantee shall remain in force till _____. If any extension of time be granted to the contractor, we undertake to extend the guarantee with the consent of the contractor. Unless a claim or demand under this guarantee is made or presented to the Bank within six months from the expiry date, all the rights of the Corporation under this Guarantee shall cease and the Bank shall be released and discharged from all liability hereunder.

6. We, the said bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the
 LIFE INSURANCE CORPORATION OF INDIA.

For and on behalf of the LIC of India

(Name and Designation)

Dated:

Note No.1 * : FILL IN AS APPLICABLE



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A) For Proprietary concerns:-

Shri _____ son of _____ resident of _____
 carrying on business under the name and style of _____
 at _____ (hereinafter
 called '**the said contractor**' which expression shall unless the context requires otherwise include his heirs,
 executors, administrators and legal representative).

OR

B) For Partnership concerns:-

1. Shri _____
 son of _____
 resident of _____

2. Shri _____
 son of _____
 resident of _____

_____ carrying on business in partnership under the name and style of _____
 of _____ at _____
 (hereinafter collectively called '**the contractor**' which expression
 shall unless the context requires otherwise include each of them and their respective heirs, executors,
 administrators and legal representatives)

OR

C) For companies :-

M/S / Shri _____ a company under the Companies Act 1956 and
 having its registered office at _____ in the state of _____ (hereinafter called
 '**the said contractor**' which expression shall unless the context requires otherwise include its successors
 and assignees).

Note No.2:

**** Please fill in the name and address of Bank.**



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ANNEXURE – ‘C’

LIFE INSURANCE CORPORATION OF INDIA

(Refer Clause No. 35 of Conditions of Contract)

FORM OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE

IN INDIVIDUAL CONTRACTS

To
 THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at _____ in the State of _____ (hereinafter called '**the Corporation**') which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under terms and conditions of contract (vide its acceptance letter No. _____ dated _____) made between _____ (hereinafter called the said Contractor) and the Corporation in connection with _____ (hereinafter called '**the said contract**') to accept a Deed of Guarantee and Indemnity as herein provided for Rs. _____ from the _____ for the due fulfillment by the said contractor of the terms and conditions contained in the said contract, we the _____ (hereinafter referred to as '**the said Bank**') and having our office at _____ do hereby undertake and agree to indemnify and keep indemnified the Corporation from time to time to the extent of Rs. _____ (Rupees _____ only) against any loss or damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation by reason of any breach or breaches by the said contractor in respect of the said contract or of any of the terms and conditions contained in the said contract, or in respect of all its claims for money and / or material found due and recoverable from the said contractor and to unconditionally pay the amount claimed as such by the Corporation on demand and without demur to the extent aforesaid.

2. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time on account thereof and the decision of the Corporation in this respect shall be final and binding on us.



LIFE INSURANCE CORPORATION OF INDIA
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3. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity from time to time to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor, or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever, which under the law-relating to sureties would but for this provision have the effect of so releasing the Bank from its liability.

4. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee and Indemnity herein contained shall be enforceable against the said Bank, notwithstanding any security which the corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

5. Notwithstanding anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only). The guarantee shall remain in force till _____. If any extension of time be granted to the contractor, we undertake to extend the guarantee with the consent of the contractor. Unless a claim or demand under this guarantee is made or presented to the Bank within six months from the expiry date, all the rights of the Corporation under this Guarantee shall cease and the Bank shall be released and discharged from all liability hereunder.

6. We, the said bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the
 LIFE INSURANCE CORPORATION OF INDIA.

For and on behalf of the LIC of India

(Name and Designation)

Dated:



LIFE INSURANCE CORPORATION OF INDIA
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Note No.1 * : FILL IN AS APPLICABLE

A) For Proprietary concerns:-

Shri _____ son of _____ resident of _____
 carrying on business under the name and style of _____
 at _____ (hereinafter
 called '**the said contractor**' which expression shall unless the context requires otherwise include his heirs,
 executors, administrators and legal representative).

OR

B) For Partnership concerns:-

1. Shri _____
 son of _____
 resident of _____
2. Shri _____
 son of _____
 resident of _____

carrying on business in partnership under the name and style of _____
 of _____ at _____
 (hereinafter collectively called '**the contractor**' which expression
 shall unless the context requires otherwise include each of them and their respective heirs, executors,
 administrators and legal representatives)

OR

C) For companies :-

M/S / Shri _____ a company under the Companies Act 1956 and
 having its registered office at _____ in the state of _____ (hereinafter called
 '**the said contractor**' which expression shall unless the context requires otherwise include its successors
 and assignees).

Note No.2:

**** Please fill in the name and address of Bank.**



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INSTRUCTIONS TO CONTRACTORS

1. INSPECTION OF SITE:

The Tenderer shall visit and examine the site of work and satisfy himself for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra charge made, in consequence of any misunderstanding or incorrect information on any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the Tenderer in connection with obtaining information for submitting this tender including his visits to site and efforts in compiling the Tender shall be borne by the Tenderer and no claims for reimbursement thereof shall be entertained.

2. WHOLE WORK TO BE COMPLETED IN THE SPECIFIED COMPLETION PERIOD:

The whole work is to be completed within the completion period stated in the Appendix to Conditions of Contract or the extended date of completion, if any. The Contractor will be required if necessary, to work overtime to complete the work by the stipulated date. No extra will be allowed on the Contract sum for such overtime work.

3. TIME AND PROGRESS CHART:

- 3.1 A time and Progress Chart is attached to this Contract for guidance. The Contractor shall submit a time and progress chart (**CPM/PERT/Quantified Bar Chart**) fitted within the specified overall period of completion (as stated in Appendix to Conditions of Contract) within **10 (Ten)** days of the communication of letter of intent, to the Corporation's Engineer. In case the Contractor does not come forward for any change in the Time and Progress Chart as provided in the General Instruction to the Contractors, it shall be presumed that the Time and Progress Chart is accepted in full in letter and spirit to maintain the pace of the progress of the Work.
- 3.2 Ancillary work should be so started that all such work is completed before the specified overall contractual period of completion.
- 3.3 The Contractor shall assume full responsibility for any delay in delivery of materials by Merchants or nominated Sub-Contractors not having completed the work in accordance with the Time and Progress Chart. Such excuses shall not form any criterion for extension of time, or any claims by the Contractor.
- 3.4 Any failure on the part of the contractor to adhere to the starting and completion date of individual items mentioned in the chart shall entail application of the liquidated clause on whole or part at the



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discretion of the Chief Engineer, notwithstanding the overall period of completion stated in the appendix to the conditions of contract.

4. DRAWINGS ON SITE:

The Drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved transparent varnish or laminated at the cost of the Contractor. They are to be protected from the ravages of termites, ants, silver fish and other insects.

5. ORDER OF WORK:

The Chief Engineer reserves the right to fix the order in which the various items of work involved in this Contract is to be executed and Contractor shall comply with the same. There shall be no extra claims on account of this.

6. WORKMANSHIP:

The Work calls for a high standard of workmanship combined with speed.

7. REJECTED WORKMANSHIP OR MATERIALS:

Any workmanship, or materials not complying with the specific requirements or approved samples, or which have been damaged, contaminated or deteriorated, must be removed immediately from the site and replaced at the Contractor's expense as directed.

8. QUOTED RATES:

The rate is percentage tender.

9. SECURITY AND PROTECTION:

The Contractor shall at his cost, provide any necessary temporary enclosures, gates, entrances, etc. for the protection of the work and materials and for altering and adapting same as may be required and removing at completion of the works and making good all works disturbed.

10. MINIMUM WAGES ACT:

The Contractor shall pay rates of wages and observe hours of work and conditions of employment to existing rules under Minimum Wages Act. Further, it shall be Contractor's responsibility to ensure that he pays his workmen wages, which are not lower than the minimum prescribed by the Union Government and State Government in which area this Contract, is being operated.



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11. TAXES, DUTIES, LEVIES AND DEDUCTION AT SOURCE:

- 11.1 The Contractors shall be responsible to pay all statutory levies/taxes imposed by the State and Central Government from time to time. It is deemed that the rates quoted by the contractor for each item of works includes all applicable taxes except GST on works contract which shall be paid by LIC as applicable from time-to-time as per notification of Government of India.
- 11.2 Deduction at source of Income tax, all other statutory taxes as applicable and labour cess shall be made by LIC of India as per statutory provisions prevailing from time to time, from the running account/ final bill and remitted to the concerned taxation authorities / State Government on behalf of the contractor.
- 11.3 **The contractor shall mention the following LIC of India GSTIN Number according to State of work site in their bill.**
- | | |
|-----------------------------------|--------------------------|
| FOR BIHAR GSTIN NUMBER | : 10AAACL0582H2Z0 |
| FOR JHARKHAND GSTIN NUMBER | : 20AAACL0582H1Z0 |
| FOR ODISHA GSTIN NUMBER | : 21AAACL0582H1ZY |
- 11.4 The vendor needs to display the invoice on the GST portal and remit the tax to the Govt. within specified period.
- 11.5 The measurement books along with the abstract are to be checked, corrected and accepted by the vendor and then only invoice with zero correction will be raised and uploaded by the vendor on GST portal.
- 11.6 The vendor should quote their rate considering all taxes/duties/levies/ labour welfare cess etc. which are not subsumed in GST but excluding GST on works contract as applicable which will be paid extra at the rate prevailing at the time of billing. It is also advised to quote the rate after considering the input tax credit advantage and adjusting / deducting the same in the quoted rate/amount.
- 11.7 GST on works contract will be paid extra along with Bill payment as per applicable rate of GST at the time of billing.
- 11.8 LIC of India shall not issue any road permit / Form-C or any other form to vendors for procuring the material from anywhere or for claiming any tax exemption etc.



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GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES

These preambles apply to all the sections of the "Schedule of Quantities".

1. RATE TO COVER:

- 1.1 The rates quoted by the Contractor shall be held to include for Supply, Installation, Testing & Commissioning, all conveyance and delivery, loading & unloading, carrying in, storing, hoisting, all labour, setting, fitting and fixing in position, making straight, cutting, waste, return of packing and all materials and labour and everything else necessary for the proper completion of each item of work to the approval of Corporation's Engineer and for Establishment Charges, overheads and profits. The Contractor shall provide at his expense all labour, materials and things required by the Corporation's Engineer for testing and measuring the work, for weighing, testing the efficiency of any portion of the work, all planking, gangways etc. necessary for affording access to every part of the work except where specifically stated otherwise.
- 1.2 The Contractor should also cover in his rates for the method of work, cost of materials, labour etc., to comply with the "Trade Specifications", General Instructions to Contractor", "Conditions of Contract", "Special Conditions", (if any), and all documents of this contract.
- 1.3 All the materials or procedures or specifications for work, unless otherwise stated, shall conform to the current Indian Standard whether or not specific mention is made thereof. The Contractor shall be responsible for and shall replace or make good at his own expense, any materials lost or damaged, or of quality not approved, temporarily disturbed roads, pavements, approaches, gates, walls or any such dismantling carried out to execute the work.
- 1.4 All rates quoted shall include for supplying, installation, testing and commissioning although the same may not have been mentioned in the item of the Schedule of Quantities. Words "Providing and Fixing where used shall have same meaning as "Supplying and Installation".
- 1.5 **Rates quoted shall include for hoisting to any height and the work at all levels and lifting of Materials and working at any height shall not form any criterion for any extra claims, except where otherwise specified in Schedule of quantities.**

2. ANCILLARY WORKS:

- 2.1 The Contractor shall have to carry out all ancillary and connected work within and near vicinity of the plot of the proposed work if ordered to do so by the Chief Engineer at the rates quoted in the Schedule of Quantities, at any time during the currency of this Contract including extension of time, if any granted.



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3. PRICE FLUCTUATION / VARIATION:

- 3.1 Rates quoted by the Contractor shall be firm throughout the currency of the Contract including extensions of time, if any granted. No price adjustment due to variation in cost of materials or labour or any variation under any State or Central Legislation or any other reason whatsoever shall be allowed, except as stated in relevant clauses below with regard to variation in price on materials & labour and price fluctuation in Cement & Steel.

4. "PRINCIPAL MAKE/S OR OTHER EQUAL AND APPROVED" FOR MATERIALS / PRODUCTS:

- 4.1 The Contractor shall note that materials having "ISI" monogram shall primarily be used in the work. If in the tender "Certain Principal Make / Makes or other equal and approved of any material / Product is mentioned in any item or Trade Preambles relating to the particular items in its respective Trade Schedule, the Contractor shall have to use the Principal Make/Makes specified in the relevant item or the trade Preambles. In case the specified particular Principal make / makes of the materials product is/are not readily available, the Contractor shall take prior permission and approval of the Chief Engineer in writing before use of the alternative equivalent make of the Material / Product.
- 4.2 All principal makes specified for any item shall be treated at par as per the accepted quoted rate.
- 4.3 Use of the make other than the Principal Make/Makes (which shall be treated as an Equivalent make) shall be at the discretion of the Chief Engineer and such Make/Makes shall be used after the approval of the Chief Engineer.
- 4.4 In such cases the Contractor will not be paid any extra payment over the accepted quoted rate in any case. However if it is ascertained that the price of approved Equivalent Make or the Material/product is lower than that for the Principal Make/Makes of the same material / product the difference of the price shall be payable by the contractor to LIC. Such difference of price shall be suitably decided by the Chief Engineer whose decision shall be final and binding to the Contractor in this regard.

5. ADJUSTMENT IN PRICES OF MATERIALS AND LABOUR :

- 5.1 No adjustment in price of material and labour shall be allowed for this work.



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SPECIAL CONDITIONS

1. **APPLICABILITY OF MSME PROVISION ON WORKS CONTRACT:**

Works contract does not falls within the ambit of Public Procurement Policy-2012 and MSME Act. Hence benefits under Public Procurement Policy for MSMEs shall not be extended against tender for "WORKS CONTRACTS".

2. **REGISTRATION UNDER CENTRAL GOODS & SERVICE TAX ACT 2017 ON WORKS CONTRACTS.**

"All the participating Bidders must have valid GST Registration Certificate of a particular State/Union Territory at the time of submission of the Bid. In the eventuality of not having valid GST Registration Certificate with the State/Union Territory, where implementing Works Contracts, the successful bidder will be required to obtain GST Registration Certificate of that particulars State/Union Territory where the Works Contract will be implemented within a period of 21 days from the date of issuance of Letter of Acceptance, failing which the letter of Acceptance will be withdrawn and cancelled. Earnest Money deposit will also be forfeited. No extension of time period will be given whatsoever unless there remain unforeseen impediments with the issuing Authority of such GST Registration."

3. The tenderer should have experience of successful installation of grid connected SPV Plant in Govt/Semi Govt/PSU/Big corporate house.
4. The details of projects executed in past two years should be up loaded. Issued by Authorized Agency/Project owner towards the satisfactory installation and functioning of the power plants to be furnished by the tenderer.
5. The Supplier has to develop suitable network for providing **free maintenance during defect liability period of 5 years.**
6. **The contractor shall mention the following LIC of India GSTIN Number according to State of work site in their bill.**

FOR BIHAR GSTIN NUMBER	: 10AAACL0582H2Z0
FOR JHARKHAND GSTIN NUMBER	: 20AAACL0582H1Z0
FOR ODISHA GSTIN NUMBER	: 21AAACL0582H1ZY

7. All the rules, registrations, provisions, of governments are applicable in this tender.



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PRE- REQUISITES AND PROPOSAL EVALUATION INFORMATION

A. Scope of Work

The extent of the work shown and specified hereunder is defined to include all labour, materials, equipment, and supervision required for the design, supply, installation, and testing and commissioning of the complete solar power generation, its distribution and subsequent operation and maintenance as defined under succeeding paragraphs.

Generation of 1KWp of Solar Energy based, conversion of the same to AC power with a **guaranteed Annual generation of 4.6 KWH/KW_p per day (1380 KWH/KW_p in a year considering 300 sunshine days)** during the first five years of operation at LIC's Power grid synchronization point including :

- **Obtaining all necessary permission from local and Government authorities to set up the grid connected power plant and synchronization etc on behalf of Life Insurance Corporation of India. In addition, rendering all services & follow up with concerned authority to get approvals/sanctions with respect to net metering/otherwise and for subsidy on Solar Power generating system if applicable. LIC will reimburse the official fees paid by the contractors on production of receipts.**
- Design, Engineering, Factory Acceptance Test (FAT), supply, installation testing and commissioning of Solar PV Modules (inclusive of Electrical, Electronic and Mechanical features) along with Power Conditioning Units (PCUs), as required and specified.
- Supply and installation of Module mounting structure / super structure on identified locations. The successful tenderer shall design their SPV Panel structure with Hot dipped galvanized steel and CC foundation suitable for site condition. Supply and installation of Power Conditioning Units (PCU) (inverter plus local grid synchronizing system), distribution panels, surge protection units etc. as required.
- Supply and laying of all power and control cables on wall/ floor etc including supply of hangers, supports, cable terminations and all fixing accessories.
- Supply and installation of Earthing with testing point for every pits (grounding) system (sleeved /insulated) including cutting of roads / paved areas & making as good as in original shape.
- **Supply, installation and testing of entire system including synchronizing with power grid and operation as required. The installation shall include the electrical switchgears, cabling, terminations, inverters, metering and hooking up the system to the electrical grid. The PV modules shall be installed with the necessary tilt with the most effective orientation. Solar PV modules are designed to last 25 years or more. It is therefore essential that all system components and parts, including the mounting structures, cables junction boxes, distribution boxes and other parts also have a life cycle of at least 25 years. Therefore all works shall be undertaken with the highest levels of quality and workmanship. During inspection LIC Engineer and its representative will pay special attention to neatness of work execution and conformity with quality and safety norm. Non compliant works will have to be redone at the cost of the Bidder.**
- All related & required civil works will be the responsibility of successful tenderer.
- Solar System capacity shall be demonstrated to the LIC's Engineer.
- Onsite training to LIC Engineers and Workmen for proper operation, maintenance and trouble shooting.
- Periodic cleaning of the solar panels considering the ambient conditions and efficiency of the photovoltaic cell at the site. The contractor shall carry out the cleaning of the PV cells, PCU etc



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once in every 15 days during the entire defect liability period of 5 years. However, water connection at the same floor at one point shall be provided by LIC.

- **In case of malfunctioning of the system the contractor shall attain the fault within 3 working days from the date of lodging complaint. This is in addition to periodic maintenance i.e. cleaning, checking and rectifying the defect, if any in every 15 days.**
- Supply of the recommended spare parts along with the main equipments to avoid downtime during Guaranty/Warranty and defect liability period.
- Inspection of the complete installation at least once in every year during guarantee period by the respective equipment manufacturer's specialist Engineer(s). This is in addition to periodic maintenance i.e. cleaning, checking and rectifying the defect, if any in every 15 days.
- LIC of India reserves the right for random checking of various parts of solar power plants. All the testing equipments, arrangements for components of Solar power plants etc. required for proper checking & testing shall be provided by the contractor. The contractors' technical representative shall assist to perform the tests. No payment shall be made extra.

B) All Inclusive Upkeep & Maintenance during warranty period

All Inclusive Upkeep & Maintenance Contract of the entire system as provided, including all spares and consumables for a period of 05 years (Defect Liability Period) after successful completion of work.

C) SERVICES TO BE PROVIDED BY LIC

Unless otherwise agreed by LIC, only the following services shall be provided in connection with this work:

Enclosed indoor space for locating control & monitoring devices, data loggers etc.

Single point water source for cleaning of SPV panels near to the solar plant. Further, plumbing for distribution of water to various array locations to be provided by the contractor.

Provision of necessary switchgear in the LT distribution panel with IP 65 protection like 4 pole MCCB, Surge protections with MCB etc for connecting the solar energy based AC power to LIC Power grid. However, the termination of cable to the switchgear shall be in the scope of the successful tenderer.

D) MINIMUM TECHNICAL REQUIREMENTS / STANDARDS FOR SPV SYSTEMS / PLANTS

PV MODULES:

The PV modules must conform to the latest edition of any of the following IEC / equivalent BIS Standards for PV module design qualification and type approval:

Crystalline Silicon Terrestrial PV Modules IEC 61215 / IS14286

In addition, the modules must conform to IEC 61730 Part 1- requirements for construction & Part 2 - requirements for testing, for safety qualification or Equivalent IS (Under Dev.)

PV modules shall be suitable to be used in a highly corrosive atmosphere (coastal areas, etc.) must qualify Salt Mist Corrosion Testing as per IEC 61701 / IS 61701 and modules manufacture ISO 9001-2008, ISO 14001-2004.



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E) BALANCE OF SYSTEM (BOS) ITEMS/ COMPONENTS:

The BOS items / components of the SPV power plants/ systems deployed under the Mission must conform to the latest edition of IEC/ Equivalent BIS Standards/ MNRE specifications / as specified below:

BOS Item / System	Applicable BIS /Equivalent IEC Standard Or MNRE Specifications	
	Standard Description	Standard Number
Charge Controller / MPPT units	Environmental Testing	IEC 60068-2 (1,2,14,30) / Equivalent BIS Std.
Power Conditioners/ Inverters** including MPPT and Protections	Efficiency Measurements Environmental Testing	IEC 61683 / IS 61683 IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std.
Cables	General Test and Measuring Method PVC insulated cables for working voltage up to and including 1100 V and UV resistant for outdoor installation	IEC 60227 / IS 694 IEC 60502 / IS 1554 (Pt. I & II)
Switches/Circuit Breakers /Connectors	General Requirements Connectors –safety A.C. /D.C.	IEC 60947 part I,II, III / IS 60947 Part I,II,III EN 50521
Junction Boxes /Enclosures for Inverters/Charge Controllers/Luminaries	General Requirements	IP 54(for outdoor) / IP 21(for indoor) as per IEC 529

** In case, if the charge controller is in-built in the inverter, no separate IEC 62093 test is required and must additionally conform to the relevant national / international Electricity Standards wherever applicable.

F) AUTHORISED TESTING LABORATORIES / CENTERS

The PV modules must be tested and approved by one of the IEC authorized test centers. Test certificates can be from any of the NABL / BIS Accredited Testing / Calibration Laboratories.

Test certificates for the BOS items / components can be from any of the NABL / BIS Accredited Testing Calibration Laboratories / MNRE approved test centers.

G) IDENTIFICATION AND TRACEABILITY

Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID shall mandatorily be placed inside the module Laminate, but must be able to withstand harsh environmental conditions.

- i) Name of the manufacturer of PV Module
- ii) Name of the Manufacturer of Solar cells of PV Module
- iii) Month and year of the manufacture (separately for solar cells and module).
- iv) Country of origin (separately for solar cells and module)



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-
- v) I-V curve for the module
 - vi) Peak Wattage, I_m , V_m and FF for the module
 - vii) Unique Serial No. and Model No. of the module
 - viii) Date and year of obtaining IEC PV module qualification certificate
 - ix) Name of the test lab issuing IEC certificate
 - x) Other relevant information on traceability of solar cells and module as per ISO 9000 series.
- H) The contractor shall execute the whole & every part of the work in the most substantial manner and both as regard to materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also confirm the execution of work exactly, fully and faithfully to designs, drawings & instructions in writing in respect of the work signed by the LIC's Engineer.

I) ACTIONS TO BE TAKEN BY THE SUCCESSFUL TENDERER AFTER AWARD OF WORK

The successful tenderer shall take the following actions immediately:

He shall contact the LIC's Engineer of the work immediately after award of work and submit a non-judicial stamp paper of worth INR 100.00 (Rupees One Hundred only) for preparation of the agreement. Insurance policies also should be taken in the joint name of vendor and LIC.

The agreement shall be signed by the authorized signatory of the contractor immediately on receipt of intimation from LIC's Engineer that agreement is ready. All the required submittals must be completed within 15 days from the date of issue of detailed order.

A programme chart shall be prepared for execution of the work & the same shall be finalized in consultation with the LIC's Engineer. The work-schedule chart/ bar-chart indicating the time schedule for commencement of various activities of work like inspection & delivery of materials, commencement of work, completion of work etc. required for the execution & timely completion of work shall be submitted by the tenderer to the LIC's Engineer for approval within 7 (Seven) days of the date of award of work.

- J) All activities for execution of work shall strictly follow the programme chart so finalized unless advised otherwise by the LIC's Engineer in writing. It shall be the responsibility of the contractor to adhere to this work-schedule and complete the work in the specified time. Any deviation from this schedule, for any reason, shall be brought to the notice of the LIC's Engineer immediately to enable him to take necessary corrective action(s). Failure to submit the work schedule chart within the specified time or meeting the various committed deadlines shall be treated as delay on the part of the tenderer.
- K) Drawings indicating the design of Solar Power Generation System and distribution proposed along with designs for structures / foundations for SPV array duly certified / vetted by a recognized Govt. Engineering College etc. shall be submitted to the LIC's Engineer, for approval, within thirty (30) days of the receipt of detailed order. The drawings shall indicate all relevant details about the component/equipment etc. The contractor shall submit all equipment information, which should include but not limited to the following and obtain approval:

General arrangement and dimensional layout:

Schematic Drawing showing the requirement of SPV Plant, Power conditioning Unit(s), Circuit breakers, Junction Boxes, AC and DC Distribution Boards, meters etc.

Structural drawing along with foundation details for the structure.



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Item wise bill of material for complete SPV plant covering all the components and associated accessories.

- L) Delivery of equipment is to be made to the site in accordance with the programme finalized in consultation with LIC's Engineer.
- M) The Contractor shall at all times, during the period of execution of works keep in mind the specified completion time and other terms & conditions of contract as specified in the tender document which is, and shall remain the essence of the contract. On completion of the installation, the tenderer shall conduct a system acceptance test. The tenderer shall propose a detail system acceptance test plan, which shall be jointly reviewed by LIC and the tenderer.

N) TESTING OF EQUIPMENTS

Type test certificates for all the tests specified for the factory built Solar PV modules, and the component parts shall be submitted by the Bidder before completion of work.

O) TESTING OF INSTALLATION AFTER COMPLETION

- a) All units shall on their completion and before being placed in service, be subjected to a performance test followed by an acceptance inspection and tests to determine that all parts of the installation confirm to the requirement and that all equipments function as required and the work has been carried out as specified.
- b) Tests and inspections shall be made by the contractor in the presence of the LIC's Engineer. Contractor shall notify the LIC's Engineer in writing at least 10 days before the date of testing in order to facilitate arrangements for LIC's Engineer to be present.
- c) The contractor shall submit proposed testing procedure to the LIC Engineer not later than (one) 1 month before the date of testing.
- d) All test instruments and personnel to carry out the testing and commissioning shall be provided by the contractor. Adequate supervision of the tests shall also be maintained.
- e) Corrective measures, if necessary, shall be carried out at no cost to LIC.
- f) **Performance Test.**

After installation of the complete system, its operating capability shall be demonstrated. The contractor shall provide personnel, tools, etc. for testing.

Performance test parameter:

Measurement of peak energy generated shall be taken every day for 10 working days at available load condition. Any system not operating within five (5) per cent of the accepted design parameters shall be reworked to bring it to proper performance level.

Auto operation of the complete system, Correction of unsatisfactory operation during test period if any, deficiencies or variations in the design, fabrication or operation causing unsatisfactory performance if noticed, then the same shall be corrected to provide satisfactory performance. Manufacturer/Contractor shall have appropriate service personnel at site during the test period to service or adjust the systems equipments as required.

After completion of the system performance tests, a joint acceptance inspection shall be carried out by LIC's Engineer and the representative of the contractor. The purpose of this inspection shall be to determine that the system has been furnished and installed as specified. If the system is not



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acceptable for reasons of noncompliance to the drawings and specifications, the contractor shall make immediate corrections within the scheduled time. A final acceptance inspection shall be done to determine all corrections have been made. Even though the equipment shall be inspected and accepted, the acceptance date shall not occur before all contractual obligations are completed including delivery of all "as built" drawings, maintenance, and operation & spare parts manuals etc.

P) Date of virtual completion

After successful performance test, the system shall be put into operation. However, the date on which the system is finally accepted as per terms of the contract will be considered as the date of virtual completion of the work, from which the defect liability period of 5 years shall be commenced.

Q) TRAINING

The contractor shall include in his tender cost of training of operators and maintenance staff. Initial training of operating and maintenance personnel shall be provided at site to ensure competence in the operation and maintenance of the system provided. The training programme shall reflect the requirements of the operating instructions and maintenance manuals. The training programme shall include but not limited to the following elements:

R) OPERATING TRAINING

- i) System description including electrical, electronic and mechanical sub-system and their functions.
- ii) System operating procedures.
- iii) System operating characteristics.
- iv) System limitations.
- v) On-site system operation.

S) MAINTENANCE TRAINING

- i) System description including electrical, electronic and mechanical sub-systems and their functions.
- ii) Descriptions and procedures for system and component inspection, adjustment and repair.
- iii) System and component trouble-shooting
- iv) On-site inspection and operation and maintenance
- v) Schedule of maintenance, safety checks and procedures.

T) DESIGN PARAMETERS / REQUIREMENTS AND EQUIPMENT SPECIFICATIONS
SPECIFIC TECHNICAL REQUIREMENTS

Solar PV system shall consist of following equipments:

- i) Solar PV modules consisting of required number of PV modules.
- ii) Inverter (Power Conditioning Unit) with data logger.
- iii) Mounting structures
- iv) AC and DC Cables and hardware
- v) Junction box and distribution boards
- vi) Earthing kit
- vii) Surge arrestors



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- viii) Tool kit
- ix) Related Civil Works
- x) Control & monitoring system etc.

U) DESIGN PARAMETERS

Environment

All components and materials are to be designed and selected for long service life under local environment conditions.

Maintenance consideration

Particular attention shall be given to keep components simple, rugged and easily accessible for routine maintenance and components replacement.

Major assemblies and components such as, electrical components/controls shall be interchangeable and easily removable/replaceable without extensive dismantling of other assemblies of components.

All wiring shall be used of a uniform color coding and marking system throughout indicating wiring terminations to permit rapid effective tracing and trouble shooting. Maintenance manual shall reflect said color coding/markings.

To facilitate identification, each item of equipment shall have a name plate of corrosion resistant metal attached in a conspicuous location.

Safety considerations

All components shall be designed to fail proof. In the event of an equipment failure or external influence such as improper operation, power failure or other adverse conditions affecting the proper function of the system or equipment, the said system or equipment shall revert to a safe state.

V. PROJECT COST :

The Project cost shall include all the costs related to above Scope of Work. Bidder shall quote for the entire facilities on a “single responsibility” basis such that the total Bid Price covers all the obligations mentioned in the tender Document in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 5 years, goods and services including spares required if any during O&M period. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.

The project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.

The vendor should quote their rate considering all taxes/duties/levies/ labour welfare cess etc. which are not subsumed in GST but excluding GST on works contract as applicable which will be paid extra at the rate prevailing at the time of billing. It is also advised to quote the rate after considering the input tax credit advantage and adjusting / deducting the same in the quoted rate/amount. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable.

The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts including periodic checking and cleaning of the system in every 15 days for a period of 5 years and the quoted price to include the same.



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PLANT PERFORMANCE EVALUATION:

The performance of the SPV Power Plants without battery backup is as under:

The successful bidder shall be required to meet minimum guaranteed generation and should send the periodic plant output details to LIC for necessary evaluation.

SYSTEM DESCRIPTION :

The Photovoltaic (PV) ON-Grid system consists mainly of 3 components:

The PV array, Module Mounting Structure and the Power conditioning Unit (PCU). The PV array converts the light energy of Sun light into direct current (DC) power. The Module mounting structure is used to hold the module in position. The DC power is converted to alternating current (AC) power by the PCU and utilized for requirement within the Building.

The multi crystalline solar modules used shall be grouped in an optimum number of strings with module-to-module cable connections. The modules shall be held fixed on structures made of galvanized steel structures. Depending on the site location the modules shall be inclined at optimum horizontal tilt angle and direction to get maximum efficiency.

The DC output from the modules shall be fed to Array junction box and the strings are to be paralleled at Sub Main & Main Junction Boxes. The output of the main junction box shall be fed to DC distribution board (DCDB). The DC power output from the DCDB is fed to the Power Conditioning Unit (PCU). The Power-conditioning unit shall be installed in a control room converts DC energy produced by the solar array to AC energy. The AC power output of the inverter shall be fed to the AC Distribution Board (metering panel & isolation panel) which also houses energy meter. The 415V AC output of the isolation panel is fed to the local bus bar.

DOCUMENTATION

Two sets of installation manual / user manual shall be supplied along with the power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals.

ACCEPTANCE TESTING

The successful bidder will submit detailed Test Certificates and Report for each equipment and the system.

MOBILISATION PERIOD & COMPLETION OF JOB

Successful Bidder shall be required to mobilize all required materials, manpower etc. so as to complete the total scope of work as defined in this tender within **Three months** from the date of notification of award.

AUTHORIZED TESTING LABORATORIES/ CENTERS

PV modules must qualify (enclose test reports/ certificate from IEC/NABL accredited laboratory) as per relevant IEC standard. Additionally the performance of PV modules at STC conditions must be tested and approved by one of the IEC / NABL Accredited Testing Laboratories including Solar Energy Centre.



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WARRANTY

PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

GUARANTEE

The mechanical structures, electrical works including power conditioners /inverters / charge controllers /maximum power point tracker units/distribution boards/digital meters/switchgear/storage batteries, etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

Check List

(The following information/documents are to be annexed by the Bidders along with the BID)

S.N.	Particulars	Yes/No.
1.	Details of Earnest money (D.D.)	
2.	The bidder is a Manufacturing Company/Firm/ Corporation Registered in India of SPV Cells / Modules / Battery / PV System Electronics (conforming to relevant National / International Standards) OR a PV System Integrator/Channel partner	
3.	A copy of valid GST registration certificate	
4.	A summarized sheet of cumulative experience in Solar power plants	



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TECHNICAL SPECIFICATIONS FOR GRID INTERACTIVE SPV PLANT

The proposed project should be commissioned as per the technical specifications given below.

Solar PV system shall consist of following equipments/components.

1. Solar PV modules consisting of required number of crystalline PV modules.
2. Mounting structures and civil structures.
3. Earthing and lightening protections.
4. Suitable PVC pipes and accessories

SOLAR PHOTOVOLTAIC MODULES:

1. **The PV modules used should be made in India.**
2. The Photovoltaic modules must be tested & approved by one of the IEC authorized test centers as per relevant and latest IEC standards.
3. The module shall have warranty of 25 years for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
4. Each PV module used in any solar power project must use a RF Identification Tag (RFID). The RFID can be inside or outside the module laminated, but must be able to withstand harsh environmental conditions. It must contain the following Information;

- I. Name of the manufacturer of PV Modules and solar cells
- II. Month and year of the manufacturer (separately for solar cells and modules.
- III. I-V Curve for the module
- IV. Peak wattage, I_m , V_m , V_{oc} , I_{sc} and FF for the module.
- V. Unique Serial No and Model No of the Module
- VI. Date and year of obtaining IEC PV module qualification certificate.
- VII. Name of the test lab issuing IEC certificate

ARRAY STRUCTURE:

- a. The structures provided shall be of flat-plate design with combination of I, C and L sections as per structure design requirement to withstand local wind speed. Suitable fastening arrangement such as grouting and clamping should be provided to secure the installation against the specified wind speed.
- b. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Galvanizing should meet ASTM A-123 hot dipped galvanizing or equivalent which provides at least spraying thickness of 80 microns on both sides as per IS5909, if steel is used.
- c. The fasteners used should be made up of stainless steel.
- d. The structures shall be designed to allow easy replacement of any module.
- e. Each structure should have angle of inclination as per the site conditions to take maximum insulation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- f. 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. Solar PV Modules Mounting Structure should withstand Wind velocity of 150 Km/hr.



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Net-metering :

In Net-metering the solar energy exported to the grid is deducted from the energy imported from the grid subject to certain conditions. LIC pays for the net-energy imported from the grid. To enable net-metering, Local electricity board approval shall be taken by replacing existing service connection meter with a bidirectional meter that displays the import and export energy separately. **The Net-metering work shall be carried out as per the latest guidelines & requirements of local electrical authority. The Net-meter, Check meter & Solar generation meter shall be including of suitable CT/PT arrangements, meter box and other devices requires for the Net-metering work and shall be provided as per the requirements of the local electricity authority.** Necessary test certificates or tests to be carried out as per the requirement of the local electricity authority and the process of net metering should be certified by local electrical inspector, if required

INVERTER:

The inverter shall be out door with IP-65 protection. The power conditioner unit/ string inverter / central inverter should be provided to convert DC power produced by SPV modules, in to AC power. The power conditioning unit/inverter should be grid interactive and also DG set interactive. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

- Nominal AC output voltage and frequency : 415V, 3 phase, 50 Hz
- Accuracy of AC voltage control : + 1 %
- Output frequency : 50 Hz
- Accuracy of frequency control : + 0.1%
- Grid Frequency Synchronization range : + 3 Hz
- Maximum Input DC Voltage : depending on the inverter used.
- Ambient temperature considered : 40 deg C
- Humidity: 95 % Non condensing
- Protection of Enclosure: IP-20(Minimum) for indoor. IP-65(Minimum) for outdoor.
- Grid Frequency Tolerance range: + 3%
- Grid Voltage tolerance: - 20% & + 15 %
- No-load losses: Less than 1% of rated power
- Inverter efficiency (minimum) : >95%
- THD: < 3%
- PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- 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 and IEC 60068 2(6,21,27,30,75,78).
- The charge controller/ MPPT units should qualify IEC 62093 and IEC 60068 2 (6, 21,27, 30, 75, 78). The junction boxes/ enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 62208 specifications.
- The PCU/ inverters should be tested from the MNRE approved test centers / NABL/BIS accredited testing-calibration laboratories.
- In case of imported power conditioning units, these should be approved by international test houses.

INTEGRATION OF PV POWER WITH GRID:

The output power from SPV would be fed to the inverters which convert 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. After disconnection from grid supply the solar system should be synchronized with the DG set and system should be compatible accordingly.



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DATA MONITORING:

The plant parameters shall be made available through remote monitoring system for performance evaluation. The plant monitoring shall also have,

- **PV array energy production:** Digital Energy Meters to log the actual value of AC/ DC Voltage, Current & Energy generated by the PV system shall have to be provided.
- **Temperature:** Temperature probes for recording the one Solar panel temperature and ambient temperature shall be provided.

DISTRIBUTION BOARD

DC Distribution panel is needed to receive the DC output from the array field, with analog measurement panel for voltage, current from different MJBs so as to check any failure in the array field. It shall have MCCBs of suitable rating for connection and disconnection of array sections. DCDB shall be fabricated by CRC Sheet to comply with IP 20 protection.

POWER CONSUMPTION:

The generated power from the solar system shall be given priority in utilization and balance power, if needed, can be taken from the Grid or DG set.

PROTECTIONS

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

Lightning protection

There shall be the required number of suitable lightning arrestors (ESE) installed in the array area. Lightning protection shall be provided by the use of metal oxide arrestors and suitable earthing such that induced transients find an alternate route to earth.

Protection shall meet the safety rules as per Indian Electricity Act 2003/IE rules.

Earthing protection

Each array structure of the PV yard should be grounded/ earthed properly through copper plate earthing with suitable copper strip only as per IS:3043-1987. In addition the lightning arrester/masts should also be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant should be thoroughly grounded in accordance with Indian Electricity Act/IE Rules. Earth Resistance shall be tested in presence of the representative of LIC as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

The earthing conductor shall be rated for the maximum short circuit current, and shall be 1.56 times the short circuit current. The area of cross-section of conductor shall not be less than 1.6 sq mm in any case.

Surge Protection:

Internal surge protection shall consist of three MOV type arrestors connected from +ve and – ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC in-build bypass fuse (parallel) which should get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards. Nominal discharge current (In) at 8/20 micro



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seconds shall be minimum 10 kA with maximum discharge (Imax) at 8/20 micro seconds minimum 20 kA with visual indication (through mechanical flag) in modules to monitor the like of SPD.

Grid Islanding:

PV system software and control system shall be equipped with islanding protection. In addition to disconnection from the grid (islanding protection i.e. on no supply), under and over voltage conditions shall also be provided. PV systems shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenances as needed. Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit.

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

CABLES AND CONNECTIONS

- The cables used in the system should be ISI marked PVC or XLPE insulated FRLS armoured Copper conductor. Cables of various sizes as per load requirement for connecting all the modules / arrays to Junction Boxes and from Junction Boxes to DC distribution box and from DC distribution box to inverter. Copper Cables of appropriate size would be provided from Inverter onwards in A.C. side.
- Only copper wires of appropriate size and of reputed-make shall have to be used.
- The permissible voltage drop from the SPV Generator to the Charge controller/inverter shall not be more than 2% of peak power voltage of the SPV power source (generating system).
- All connections should be properly terminated, soldered and/or sealed from outdoor and indoor elements. Relevant codes and operating manuals must be followed. Extensive wiring and terminations (connection points) for all PV components is needed along with electrical connection to lighting loads.
- All the Cu. PVC or XLPE insulated Armoured. Sheathed cables required for the plant will be provided by the manufacturer.

We give below table for agencies to fill up for scrutiny of the technical bid

Specification of solar PV Modules

Solar PV modules shall be of the crystalline silicon type, manufactured in India. Detailed specifications of the solar PV modules are given below

Specification	Requirement	Information by the agency- To be filled by the firm
Type	Mono Crystalline silicon	
Origin	Manufactured in India	
Efficiency	$\geq 17\%$	
Fill factor $\geq 70\%$	Fill factor $\geq 70\%$	
Degradation warranty	Panel output (Wp) capacity to be $\geq 90\%$ of design nominal power after 10 years and $\geq 80\%$ of design nominal power after 25 years	
Module frame	Non-corrosive and electrolytically compatible with the mounting structure material	
Termination box	Thermo-plastic, IP 65, UV resistant	
Blocking diodes	Schottky type	
Module minimum rated power	The nominal power of a single PV module shall not be less than 325 Wp	
RF Identification tag for	Shall be provided inside the module	

CONTRACTOR

CHIEF ENGINEER



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each solar module	and must be able to withstand environmental conditions and last the lifetime of the solar module.	
RF Identification tag data	a) Name of the manufacturer of PV Module b) Name of the Manufacturer of Solar cells c) Month and year of manufacture (separately for solar cells and module) d) Country of origin (separately for solar cells and module) e) I-V curve for the module f) Wm, Im, Vm and FF for the module g) Unique Serial No and Model No of the module h) Date and year of obtaining IEC PV module qualification certificate i) Name of the test lab issuing IEC j) Other relevant information on traceability of solar cells and module as per ISO 9000 standard	
Power output rating	To be given for standard test conditions (STC). I-V curve of the sample module shall be submitted	
Compliance with standards and codes	IEC 61215 / IS 14286 IEC 61730 Part 1 and 2	
Salt Mist Corrosion Testing	As per IEC 61701	

Solar PV Modules Mounting Structure

The PV modules shall be mounted on fixed metallic structures having adequate strength and appropriate design, which can withstand the load of the modules and high wind velocities. The support structure shall be hot dip galvanized steel or aluminium with tilting arrangement.

Detailed specifications for the mounting structure are given below

Specification	Requirement	Information by the agency- To be filled by the firm
Wind velocity withstanding capacity	150 km / hour	
Structure material	Hot dip galvanized steel with a minimum galvanization thickness of 120 microns.	
Bolts, nuts, fasteners, panel mounting clamps	Stainless steel SS 304	
Mounting arrangement for RCC-flat roofs	With removable concrete ballast made of pre-fabricated PCC (1:2:4), M15	
Minimum distance between roof edge and mounting structure	0.6 mtrs	



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Access for panel cleaning and maintenance	All solar panels must be accessible from the top for cleaning and from the bottom for access to the module junction box.	
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Bi-Directional Solar Grid Inverter:

The solar grid inverter converts the DC power of the solar PV modules to grid-compatible AC power. The detailed specifications of the solar grid inverter are given below.

Specification	Requirement	Information by the agency- To be filled by the firm
Total output power (AC)	To match solar PV plant capacity while achieving optimum system efficiency	
Input DC voltage range	As required for the solar grid inverter DC input	
Operation AC voltage	Three phase 415V	
Operating Frequency range	47.5 – 52.5 Hz	
Nominal frequency	50 Hz	
Power factor of the inverter	>0.98 at nominal power	
Total harmonic distortion	Less than 3%	
Built-in Protection	AC high / low voltage; AC high /low frequency	
Anti-islanding protection	As per VDE 0126-1-1, IEC 60255.5 / IEC 60255.27	
Operating ambient temperature range	-10 oC - +40 oC	
Inverter efficiency	>=94%	
Inverter weighted efficiency	>=94%	
Protection degree	IP 65 for indoor mounting	
Communication interface	RS 485 / RS 232 / RJ45	
Safety compliance	IEC 62109-1, IEC 62109-2	
Environmental Testing	IEC 60068-2 (1,2,14,30)	
Efficiency Measurement Procedure	IS/IEC 61683	
Cooling	Convection	
Display type	LCD for data display. LCD / LED for status display	
Display parameters to include	Output power (W), cumulative energy (Wh), DC voltage (V), DC current (A), AC voltage (V), AC frequency (Hz), AC current (A), cumulative hours of operation (h).	



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ANNEXURE-D

FORMAT FOR UNDERTAKING PRODUCT & MAINTENANCE SUPPORT

NAME OF WORK: S.I.T.C. OF 170 KWp GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, (50 Kwp EACH AT HAZARIBAGH & BHAGALPUR D.O AND 70 Kwp AT MUZAFFARPUR D.O

Pursuant to a contract awarded by LIC for the full scope of work as contained under the tender document for the above mentioned work or part thereof, we (*full name of the firm with address*), hereby undertake the complete responsibility for providing full product support and also maintenance support for the entire period of the designed life of the equipments so supplied and installed by us, promptly and expeditiously.

Further, after defect liability period 5years, in case any of the component(s), materials or parts used in the system which having 25 years warranty goes out of production, then we will make available the blue prints, drawings of the spare parts and specifications of materials at no cost to the LIC, as and when required in connection with the equipment to enable the LIC to fabricate or procure spare parts from other sources. But within defect liability period, we are responsible to attend and short out any maintenance and performance issue of the installed solar power plant.

Thanking You

Yours faithfully,

(Signature of the Contractor / Firm with Company's Seal)



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ANNEXURE-E**LIST OF SPARE PARTS & TOOL TO BE SUPPLIED ALONG WITH THE MAIN EQUIPTMENTS**

NAME OF WORK: S.I.T.C. OF 170 KWp GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, 50 Kw each at Hazaribagh & Bhagalpur D.O and 70 Kw at Muzaffarpur D.O

Use separate sheets

S.No	Description of Item	Part No	Quantity
A	SPV Spare Parts		
1			
2			
3			
B	SPV Tools		
1			
2			
3			
C	GTI Spare Parts		
1			
2			
3			
D	GTI Tools		
1			
2			
3			
E.	Data Logger		
1			
2			
3			
F.	Tools		
1			
2			
3			



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APPROVED MAKES OF MATERIALS FOR ELECTRICAL WORK

SR. NO.	MATERIAL	MAKES		
1	COPPER CONDUCTOR PVC INSULATED FR GRADE WIRES	(a) FINOLEX	(b) HAVELLS	© V GUARD
		(d) RR		
2	PVC INSULATED ARMOURED CABLES (LT/HT)	(a)FINOLEX	(b) FORT GLOSTER	© CCI
		(d) RR KABLE	(e) DELTON	
3	MAIN SWITCH WITH HRC FUSES	(a) L & T	(b)SIEMENS	© GE
		(d) ENGLISH ELECTRIC	(e) STANDARD	(f) HAVELLS
4	MAIN SWITCHES WITH REWIRABLE FUSE	(a) L & T	(b) CROMPTON	© STANDARD
		(d) HAVELS		
5	MCCB	(a) SIEMENS	(b) L & T	© SCHNIEDER – MJ
		(d) LEGRAND		
6	MCB / ELCB / ELMCB / DB	(a) LEGRAND	(b) SIEMENS	© HAGGER
		(d) SCHNEIDER MJ		
7	CHANGE OVER SWITCH / SWITCH FUSE UNIT UPTO 100 AMP	(a) HPL	(b) L & T	© HAVELLS
		(d) STANDARD	(e) SIEMENS	
8	CHANGE OVER SWITCH / SWITCH FUSE UNIT ABOVE 100 AMP	(a) HPL	(b) L & T	© SIEMENS
9	RISING MAINS	(a) ENGLISH ELECTRIC	(b) GEC	© SCHNIEDER



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SR. NO.	MATERIAL	MAKES		
10	PVC CONDUIT (ISI MARK)	(a) PRECISION	(b) AVON PLAST	© ESSARKE
		(d) SUDHAKAR	(e) KALINGA	(f) AKG
11	PVC CASING CAPING	(a) PRECISION	(b) KALINGA	© AKG
		(d) SUDHAKAR	(e) DIAMOND	
12	M.S. CONDUIT	(a) SUPREME	(b) BEC	© NIC
		(d) AKG		
13	FLOOR TRUNKING SYSTEM	(a) LEGRAND	(b) MK ELECTRIC	© PRECISION
		(d) MODI		
14	G.I. PIPE	(a) JINDAL	(b) SENITH	© PRAKASH
		(d) TATA	(e) GST	(f) APOLLO
15	MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR	(a) ANCHOR ROMA	(b) SSK	© LEADER
		(d) CRABTREE	(e) MK	
16	NON MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR	(a) ANCHOR	(b) LEADER	© SSK
		(d) CPL		
17	INDUSTRIAL PLUG & SOCKET	(a) LEGRAND	(b) HAVELLS	© CROMPTON
		(d) HAGGER	(e) STANDARD	



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SR. NO.	MATERIAL	MAKES		
		(a)	(b)	(c)
18	CABLE GLANDS	(a) COMET	(b) DOWELLS	© BRACO
		(d) SIEMENS		
19	LUGS	(a) DOWELLS	(b) COMET	
20	CONNECTORS	(a) ELMEX	(b) CONNECTWELL	© PHOENEX
21	LIGHTENING ARRESTOR	(a) PACTIL	(b) HECO	© ATLAS
		(d) G.K. ELECTRICALS		
22	SELECTOR SWITCH	(a) KAYCEE	(b) SIEMENS	© C & S
23	INDICATING LAMPS	(a) VAISHNO	(b) ESSEN	© PHILIPS
24	CONTACTORS	(a) SIEMENS	(b) L & T	© ABB
		(d) SCHNIEDER		
25	MEASURING INSTRUMENTS	(a) AMP	(b) MECO	© AE
		(d) ENERCON	(e) PROK-DV's	
26	CURRENT TRANSFORMER	(a) AE	(b) RISHABH	© KUPPA
		(d) L & T		
27	DATA CABLES & FACTORY MADE PATCH CHORDS	(a) LEGRAND	(b) D LINK	© FINOLEX
		(d) MOLEX	(f) AMP	
28	Pumps	(a) Kirloskar	(b) Crompton Greaves	© CRI
28	INFORMATION OUTLET / RJ 45 CONNECTORS / RJ – 11 SOCKETS	(a) D LINK	(b) LEGRAND	© MOLEX
		(d) SYSTEMAX	(e) AMP	

Note:

All Switch-gear and the Distribution Boards should be clearly marked with Red, Yellow, Blue and Black colour for phases and neutral. All busbar enclosures Angle iron frame and switch-gears should be painted with battleship grey oil paint. Danger and caution boards at appropriate places on main boards and Distribution Boards should be fixed. All controlling main switches on main boards and distribution boards should clearly indicate with white oil paint lettering the floor and section controlled by it. All equivalent alternative materials used on the job will have to be approved by Chief Engineer of LIC before it is actually used. If any item is installed without prior approval, the contractor will be asked to dismantle the installation and use materials as specified. The insulated wire used for concealed wiring shall be with Red, Yellow, Blue colour for respective phases, Black for neutral & Green for earth wires.



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APPENDIX TO CONDITIONS OF CONTRACT

NAME OF WORK : **TENDER FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 170KWp (50+50+70) GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT WITHOUT BATTERY BACKUP, AT LIC, HAZARIBAGH D.O BUILDING (50KWp), LIC, BHAGALPUR D.O BUILDING (50 KWp) and LIC, MUZAFFARPUR D.O BUILDING (70 KWp).**

ESTIMATED COST : **Rs.73,86,000.010**
PERIOD FOR COMPLETION : **90 Days**
EARNEST MONEY DEPOSIT : **Rs.37, 000/-**

Sl.No.	Clause Nos.	Description	Remarks
1	13	Date of commencement	Either 21 (twenty one) days from the date of acceptance letter issued to the contractor OR The day on which contractor is instructed to take possession of the site, whichever is earlier
2	13 & 26	Date of completion	60 Days from the date of commencement
3	19	Liquidated damages	Compensation in the form of penalty for delay of the work: Quantum of compensation: 1.5% of the contract sum per month of delay to be computed on per day basis subject to maximum 10.0% of the tendered value of work.
4	21	Period of final measurement	60 (Sixty) days from the date of completion of contract
5	22	Interim certificate	As per Terms of Payment
6	22	Period of honouring interim certificate	30 (Twenty) days
7	22	Period of honouring final certificate	90 days from the date of submission of final bill with details.
8	17.5	Contractor's All Risk Policy inclusive of Third Party Liability	CAR policy should be of full contract amount including third party liability not less than 7.5 % of Contract value. The policy should be effective from the date of commencement of the work till completion of the work.
9	17.6	Workmen's Compensation Policy	As per requirement of prevalent Laws and Mutual Agreement.
10	22.6	No Claim Certificate	To be given on Contractors letter head
11		Recovery of charges against Electricity / Water from	0.50% on the gross value of the Work Done



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	Contractors Bill(s)	
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Sl.No.	Clause Nos.	Description	Remarks
12	35	a) Security Deposit	The Security Deposit shall be 5% of the accepted Tender Amount) project/Location wise. The Security deposit can be either in cash or in the form of Bank Guarantee. In case of cash option, the EMD shall be retained as part of Security Deposit and the balance Security Deposit shall be deducted from the bills of the contractor. If the 50% of EMD is submitted in the form of Bank Guarantee and the contractor wants to avail cash option i.e. deduction of security deposit from the bills then the contractor has to deposit a Demand Draft / Pay Order in the name of Life Insurance Corporation of India payable at Patna amounting to 50% of EMD in lieu of Bank Guarantee submitted towards EMD. Once this amount is deposited the contractor can avail cash option for security deposit and the bank guarantee submitted towards EMD shall be returned. In case of Bank Guarantee option, the contractor shall furnish one Bank Guarantee for full amount of Security Deposit valid till end of the completion work including extension of the time if any.
		b) Performance Guarantee	Performance Guarantee shall be 10% of Contract Amount and shall be only in the form of Bank Guarantee valid up to completion of Defect Liability Period of 5 Years.
10	22.	Terms of payment.	a) 50% of the contract amount after delivery of complete system/materials (Required quantity of Solar PV modules, Inverter with data logger, Mounting structures, Net Meter, Check Meter, Solar Generation Meter, AC and DC Cables and hardware, Junction box and distribution boards) at site. b) Further 30% of the contract amount completion of the installation of Solar Plant. c) Further 10% after final commissioning of the plant and after execution of agreement with concerned Local authority for connecting the Solar Power with the Grid. d) 10% shall be retained till DLP Period. If the vendor submitted performance BG for the same amount for five years from the date of completion (i.e. up to defect liability period), the same can be released subject to acceptance of the BG.



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NO CLAIM CERTIFICATE CUM RECEIPT

(To be given on Contractor's letterhead)

"Received Rupees _____ (Rupees _____) being the amount against my/our final bill dated _____ for _____ (Name of Work) in full and final settlement of bill.

Contractor
 (Signature of Contractor on Revenue stamp)

Rubber stamp/seal of the contractor /company

NOTE:

1. The GST on works contract shall be paid by the Corporation over and above the value of work done, at the applicable rates during the contract period.
2. **Labour cess:** Rates are inclusive of Labour cess and labour cess will be deducted from contractor's bill.
3. Water charges, Electricity charges, penalty on account of non renewal of Insurance, liquidated Damages if imposed will attract GST at applicable rates during contract period.
4. TDS on GST would be deducted as per prevailing rules.



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FORFEITURE OF EARNEST MONEY DEPOSIT.

- 1) If the lowest tender withdraws his tender before the expiry of validity period or before the issue of letter of acceptance whichever is earlier or makes any modification in the terms and conditions of tender which are not acceptable to department, then the department shall, without prejudice to any other right or remedy be at liberty to forfeit 25% of the earnest money and to refund the balance.
- 2) If the contractor fails to furnish the prescribed performance guarantee within the prescribed time period or duly approved extended period, 50% earnest money will be absolutely forfeited automatically without any notice and the balance 50% will be refunded.
- 3) In case of forfeiture of earnest money as prescribed above, the tenderer shall not be allowed to participate in the tendering process of the work.



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PRE CONTRACT INTEGRITY PACT

(This has to be filled up by the tenderer and to be submitted in BID-II)

General:

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on..... day of the month of2019, between, on one hand, the Life Insurance Corporation of India (hereinafter referred to as "LIC") a statutory Corporation established under section 3 of Life Insurance Corporation Act 1956 (XXXI of 1956) and having its corporate office at "Yogakshema" Jeevan Bima Marg Mumbai 400021. (hereinafter called the "BUYER" which expression shall mean and include, unless the context otherwise requires, his successors in office assigns) of the First part. And M/s represented by Shri..... (hereinafter called the "BIDDER /SELLER" which expression shall mean and include , unless the context otherwise requires, his successors and permitted assigns) of the Second part.

WHEREAS the BUYER proposes to procure..... (Name of the Stores/ Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is performing its function under the LIC Act 1956.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the BUYER to obtain the desired said stores/equipment/item at a competition price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.



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The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:-

Commitments of the BUYER

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting on implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
- 1.3 All the officials of the BUYER will report to the appropriate "**Chief Vigilance Officer**" of the Buyer any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
- 3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.



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- 3.2** The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract of any other contract with the government for showing or forbearing to show favour or disfavor to any person in relation to the contract of any other contract with the Government.
- 3.3** Foreign BIDDERS shall disclose the name and address of their Indian agents and representatives in India, and Indian BIDDERS shall disclose their foreign BUYERS or associates.
- 3.4** BIDDERS shall disclose the payments to be made by them to their agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5** The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/ integrator/authorized agent of the stores/equipment/items and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 3.6** The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries, including officials of the BUYER or their family members, if any, in connection with the contract and the details of services agreed upon for such payments.
- 3.7** The BIDDER will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non- submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 3.8** The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9** The BIDDER/Contractor will not commit any offence under the relevant India penal code (IPC) /Provision of corruption (PC) act .Further the bidder will not use improperly, for purposes of competition or personal gain, pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10** The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11** The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.



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- 3.12** If the BIDDER or any of the key personnel of the bidder, actively involved in the project is a relative of any of the actively involved personnel of the Buyer, the same should be disclosed.

The term 'relative' for this purpose would be as defined in section 2(77) of the Companies Act, 2013.

- 3.13** The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee or the BUYER.
- 3.14** The Bidder(s)/Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

4. Previous Transgression

- 4.1** The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify; BIDDER's exclusion from the tender process.
- 4.2** The BIDDER agrees that if it makes incorrect statement on this subject, or committed a transgression through a violation of any of the clauses of the commitments of bidder, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Sanctions for Violations:

- 5.1** Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-
- (i) To immediately call off the pre contract negotiations without assigning any reason or giving any; compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
 - (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/ Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
 - (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
 - (iv) To encash the advance bank guarantee and performance bond/warranty bond, if furnished the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
 - (v) To cancel all or any other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/recession and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
 - (vi) To debar the BIDDER from participating in the future bidding processes of LIC for a minimum period of five years which may be further extended at the discretion of the BUYER.



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- (vii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (viii) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this pact

5.2 The BUYER will be entitled to take all or any of the actions mentioned at para 5.1(i) to (viii) of this pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

5.3 The decision of the BUYER to the effect that a breach of the provisions of this pact has been committed by the BIDDER shall be final and convulsive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes this Pact.

6. Fall Clause:

6.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems/items or subsystems having same scope of work, payment terms and all other applicable terms and conditions, at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage of Bidding process that similar product/systems or sub systems/items was supplied by the BIDDER to any other Ministry/Department of the Government of India or PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

7. Independent Monitors:

7.1 The BUYER has appointed (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission.

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7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extend the parties comply with the obligations under this Pact.

7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently. It will be obligatory for him to treat the information & documents of the Bidder /Contractor as confidential.



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- 7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 7.5 As soon as the Monitor notices, or has reason to believe, a violation of this pact, he will so inform the **Executive Director (E & OS), LIC**.
- 7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.
- The Monitor has also signed declarations on "Non- Disclosure of Confidential Information" and of "Absence of Conflict of Interest". In case of any conflict of interest arising at a later date, the IEM shall inform Chairman, LIC and recues himself/herself from that case.
- 7.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 7.8 The Monitor will submit a written report to the **Chairman, LIC** within 8 to 10 weeks from the date of reference or intimation to him by the BUYER /BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.
- 7.9 If the Monitor has reported to the Chairman, LIC, a substantiated suspicion of an offence under relevant IPC/PC Act, and the Chairman LIC has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

8. Facilitation of Investigation:

In case of any allegation of violation of any provisions of this pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER. The BIDDER shall provide necessary information and documents in English and shall extend all possible help of the purpose of such examination/inspection.

9. Law and Place of Jurisdiction:

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

10. Other Legal Actions:

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extent law in force relating to any civil or criminal proceedings.



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If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

Changes and supplements as well as termination notices need to be made in writing.

11. Validity:

11.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 12 months after the last payment under the contract. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

11.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12. The parties hereby sign this Integrity Pact at.....on.....

BUYER

BIDDER

Name of the Officer:

CEO :

Designation

Deptt./

Witness

1.....

1.....

2.....

2.....



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WARRANTY & COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC FOR PERIOD SIX YEARS AFTER THE EXPIRY OF WARRANTY OF 5 YEARS)

- a- Solar System supplied and installed will stand for minimum five (05) years on site all comprehensive warranty against all manufacturing defects including **replacement of Solar panels.**
- b- The mechanical structures, electrical works including power conditioners / inverters / charge controllers / Solar Module/maximum power point tracker units/ distribution boards/ digital meters/ switch gears etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing / design / installation defects for a minimum **Period of 05 years**

The contractor shall be responsible for any defects in manufacturing, installation and performance and rectify the same at their cost to the entire satisfaction of LICl for a minimum period of Five (05) year from the date of commissioning and handing over of the system in satisfactory working condition. During guarantee period all the parts will be replaced free of cost as and when required.

During the guarantee period of entire system /equipment shall be checked periodically at least once in three month for satisfactory functioning of the equipments /system. Necessary servicing including repair/ replacement of defectives parts/ equipment including mentioning all the technical parameters ensuring its proper functioning in the PM reports, the cleaning of Solar panels minimum every 15 days shall be carried out free of cost to LICl. Necessary PM reports to be submitted in such cases without fail. If contractor fails to provide free quarterly services in any quarter during DLP, 0.25 % of the total cost of the solar power plant will be charged every quarter & will be deducted from the pending dues payable to the contractor /SD.

Any break down during this period shall also be attended to by the contractor free of cost to LIC. If break down period is more than 48 hours contractor will provide stand by free of cost. Required parts will be replaced free of cost.

- c- Tenderer has to provide comprehensive AMC for minimum 06(six) years after the expiry of warranty period/DLP period.

CONTRACTOR

CHIEF ENGINEER



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TERMS & CONDITIONS OF CONTRACT FOR COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC) OF DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ON-GRID ROOF TOP SOLAR POWER PLANT AT HAZARIBAG, BHAGALPUR AND MUZAFFARPUR D.O BUILDING.

1. GENERAL:

- 1.1. After completion of warranty of 05 years Solar Power Plant will automatically come under the CAMC Contract as per Annual CAMC charges given below. The Solar Plant will be serviced 4 times (Quarterly basis) in every year. One of these services will be rendered immediately after completion of warranty / DLP. From then the servicing is to be carried out once in three months i.e. on Quarterly basis. The CAMC period, after expiry of DLP of Five year, shall be valid for a period of six years (3 years + 3 years). Before commencement of CAMC, the contractor will submit performance BG equivalent to total 3 years CAMC charges of 1st phase and SD against the DSITC work will be released after acceptance of said BG. For CAMC of 2nd phase of next 3 years, contractor will submit a separate performance BG of equivalent to total 3 years CAMC charges of 2nd phase and 1st performance BG will be released after acceptance of 2nd BG.

For 50 Kwp Solar System Each at Hazaribag & Bhagalpur D.O

Period	Amount(Rs)
1 ST Year	65000.00
2 nd Year	69000.00
3 rd Year	73000.00
4 th Year	77000.00
5 th Year	82000.00
6 th Year	87000.00

2) For 70 Kwp Solar System at Muzaffarpur D.O (Effective after 5 years D.L.P)

Period	Amount(Rs)
1 ST Year	91000.00
2 nd Year	96500.00
3 rd Year	102000.00
4 th Year	109000.00
5 th Year	115000.00
6 th Year	122000.00

- 1.2. In addition to above Scheduled services, any nos. of breakdown complaints/ shutdown calls to be immediately attended to and rectified the fault condition within 24 hours during AMC period.



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- 1.3.** In case complaint has been attended by the service engineer within 24 hrs. but the system is not made in working order within 48 hours, from the time of reporting the fault to the contractor , deduction (as penalty) as given below shall be made:
- a- Rs. 1000.00 (Rs. One Thousand only) per day up to 3 days from the date when the b/d have been reported.
 - b- Rs. 1500.00 (Rs. One Thousand five hundred only) per day beyond 3 days from the date when the b/d have been reported.
 - c- The maximum recovery shall not exceed to CAMC charges per Quarter per unit against each quarterly bills. **However if the vendor fails to repair maintain the system for more than 6 days LIC reserve the rights to get the faulty system rectified/replaced at their risk and cost of the contractor and entire expenditure shall be debited to CAMC bills or Security – deposit lying with LIC**
- 1.4.** In case of Partial / Full damage or loss of the equipment due to reasons beyond the control of LIC, like Theft, Fire etc, the tenderer should be in a position to supply working standby equipment with same configuration or higher with all services restored, as if it is a normal breakdown.
- 1.5.** Contractor shall maintain logbook in support to checking, inspecting and taking preventive/remedial action for smooth operation and maintenance of the system. This shall be made available for inspection and verification as and when required.
- 1.6.** Penalty @ 0.5 % of the total cost of the Solar power Plant or 50% of the quarterly AMC charges whichever is higher (not exceeding to CAMC charges per Quarter) will be charged every quarter, if the Preventive Maintenance is not done by tenderer. However, if the failure to carry out the Preventive Maintenance was because LIC could not make the systems available, this penalty will be waived. A certificate to this effect should be obtained from the Corporation's authorized Officials.
- 1.7.** No advance payment will be made for CAMC. The AMC charges will be paid at the end of every quarter after the expiry of the warranty period on submission of a satisfactory PM service report / breakdown service report indicating that the Solar power Plant is in working condition duly signed by the location in charge /authorized official. CAMC rates are exclusive of GST which will be paid as per GST Act.
- 1.8.** At the expiry of the contract, the outgoing contractor shall have to make out the system in normal working conditions. Payment for the last quarter shall be released only after restoring the system to its normal working condition and /or after recovering any dues payable to contractor who executes the work at the risk & cost of the original contractor. The parts and components etc. which are replaced during the contract shall be of good quality and of reputed make to the satisfaction of the deptt.
- 1.9.** Unless otherwise specifically agreed to, the contract service shall be available during normal working hours and days i.e., Monday to Friday from 9 AM to 6 PM. The service provider should be prepared to provide services beyond above timings as per mutual understanding.

2. SCOPE OF WORK:

- 2.1. The CAMC will be of all inclusive i.e. comprehensive type and including conveyance and regular maintenance / cleaning of Solar panels/ repairing / replacement of defective electrical & electronics components provided in above solar system/ replacement of Solar Panels and mounting structure, wires & cable etc. The AMC charges to be quoted accordingly. No extra will be payable other than the AMC charges.
- 2.2. The replacement of all parts if any, should be original, genuine make and old replaced should be shown or handed over to our Office.



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- 2.3. Whenever any equipment is taken out of an LIC premises for repair the same equipment has to be returned after repair unless it is declared to be irreparably damaged. When any equipment / component is taken out of LIC Office for repair, such shifting should be done with our prior permission, and the tenderer shall make all arrangements for removal of the equipment, its transportation to the workshop and back to LIC's site and its reinstallation. Transit Insurance of such equipment also has to be arranged by the Tenderer and all expenses for the above shall be borne by the tenderer. The Tenderer shall hand over the systems in 100% working condition after repair/maintenance/rectification. Thereafter, the Tenderer shall reinstall the same equipment / component after repair unless it is declared to be irreparable.
- 2.4. In the event of replacement of any part of the system, it should be done with a part of equivalent or higher configuration which is compatible with the system.

3. OTHER TERMS AND CONDITIONS FOR CAMC:

- 3.1. All statutory deductions will be made from your bills. **CAMC charges are excluding GST. GST will be paid extra as applicable as per the Act.**
- 3.2. The Vendor / Service - provider should submit Service report for regular and complaint calls duly attended & acknowledged by the concern official. Original copy of Service / PM – Reports should be enclosed along with periodic bills as a proof of attending services failing which payment will not be considered.
- 3.3. Any injury to your servicemen while attending the servicing / breakdown calls will be the sole responsibility of service provider. No any compensation whatsoever would be given by L.I.C.I..
- 3.4. The service provider/vendor should be in a position to provide stand by unit in lieu of faulty unit which is necessary to take out the unit at workshop for repair.
- 3.5. Payment will be made after completion of quarterly servicing for which the agency should submit invoice along with service reports for the services carried out during the quarterly period. The proportionate amount will be deducted if complete services are not provided.
- 3.6. **No deviation to LIC conditions of contract is acceptable and if any such deviations observed, the tender is liable to be rejected.**