

**Name of Work:** *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

**NIT No.** : 67/EE(E)/DED-41/2021-22/Recall

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Certified that this NIT contains pages marked from 1 to 43 excluding front and back covers.

**Assistant Engineer (E)**  
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**INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR e-TENDERING**  
**FORMING PART OF NIT AND TO BE POSTED ON WEBSITE**

(Application for inviting open tenders)

**The Executive Engineer(E),DED-41, CPWD, Andrews Ganj, New Delhi (PH: 26254861, email id <cpwded10@gmail.com>)** on behalf of President of India invites online **Item rate tenders** from Specialized Agencies in two bid system (Eligibility cum Technical bid and Price Bid) for the following work(s):

<b>NIT No.</b>	67/EE(E)/DED-41/2021-22/Recall
<b>Name of work &amp; location</b>	<i>Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.</i>
<b>Estimated cost put to tender</b>	Rs. 60,50,142/-
<b>Earnest Money</b>	Rs. 1,21,003/- or Only EMD Declaration as per annexure I
<b>Period of Completion</b>	03 Months
<b>Last date &amp; Time of Submission of e-Tender</b>	Upto 18:00 hrs. on 20.12.2021
<b>Time &amp; date of opening of Eligibility cum Technical bid</b>	18:30 hrs. on 20.12.2021
<b>Time &amp; date of opening of Price bid</b>	To be notified later

The firm/contractor who qualifies the following requirements shall be eligible for price-bid consideration. Joint ventures are not accepted.

- a) The firm should have satisfactorily completed works in following manner during last seven years ending previous day of last day of submission of bids.
  - 1 Three similar works each of value not less than 40% of the estimated cost put to tender  
OR
  - 2 Two similar works each of value not less than 60% of the estimated cost put to tender  
OR
  - 3 One similar works each of value not less than 80% of the estimated cost put to tender.

Similar work shall mean works of “*SITC of On Grid / Hybrid PV Solar Plant of Cumulative capacity not less than 500 KWp\* based on string inverters (PCU)*”. The value of executed works shall be brought to current costing level by enhancing the value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for bids. The BOQ/SOQ concerned with similar work only will be considered for finding the value of completed works.

\* *The cumulative capacity shall be calculated by considering those capacities only which are part of Financial Valuation.*

- b) Contractor have to submit self attested copies of completion certificate(s) issued by the officer of the client department, not below the rank of Executive Engineer or equivalent. In case of work done in private sector, then 26AS of the Income tax department confirming the payments must be submitted. The completion certificate must

clearly indicate:-

- (i) Name of Work
  - (ii) Stipulated date of start and actual date of completion.
  - (iii) Gross value of work done.
  - (iv) That the work has been completed satisfactorily.
  - (v) Full address of the client, officer issuing certificate and location where work is executed
2. The Intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
  3. Information and Instruction for bidders posted on website shall form part of bid documents.
  4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website [www.tenderwizard.com/cpwd](http://www.tenderwizard.com/cpwd) or [www.eprocure.gov.in](http://www.eprocure.gov.in) free of cost.
  5. But the bid can only be submitted after **uploading of EMD Declaration OR deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission** and uploading the mandatory scanned documents such as Demand Draft or Pay order or Banker's Cheque or Deposit at call Receipt or Fixed Deposit Receipts and Bank Guarantee of any Scheduled Bank towards EMD in favour of Executive Engineer **as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer, CPWD** and other documents as specified.
  6. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
  7. The intending bidder must have valid class-III digital signature to submit the bid.
  8. The Eligibility cum Technical bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.
  9. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
  10. Contractor can upload documents in the form of JPG format and PDF format.
  11. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in pink colour and the moment rate is entered, it turns sky blue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder rate of such item shall be treated as "0"(ZERO).

**List of Documents to be scanned and uploaded within the period of tender submission:**

1. Treasury Challan/ Deposit at Call Receipt of a Scheduled Bank guaranteed by the Reserve Bank of India/ Banker's cheque of a Scheduled Bank/Demand Draft of a Scheduled Bank/Fixed Deposit Receipt (FDR) of a Scheduled Bank against EMD.

**OR**

**Scanned copy of Performa as annexure I in lieu of Earnest Money Deposit Declaration.**

2. Copy of Work Experience Certificate. **Only those works shall be considered which is (are) mentioned in Annexure J at Page No. 9.**
3. Certificate of Registration for GST, (if the bidder has not obtained GST registration in this state, then in such a case the bidder shall upload following undertaking with the bid documents "if work is awarded to me, I/we shall obtain GST registration certificate within one month from date of receipt of award letter or before payment of 1st RA bill".)
4. Receipt of deposition of earnest money deposit to the bidder by the Executive Engineer, CPWD, to whom EMD has been deposited. **(If EMD is deposited)**
5. Valid electrical license issued from competent authority to **do electrical work in NCTD region** in the name of the Contractor. (However, the contractors shall be allowed to participate in tender with an undertaking that they will either obtain valid electrical license at the time of execution of electrical work or associate contractors having valid electrical license of eligible class).
6. Personal information in respect of bidder as per **Annexure C at Page No. 8.**
7. **Annexure J** as per **page No. 9** of the NIT.
8. Affidavit as per **Annexure H at Page No. 7.**
9. Affidavit as per **Annexure K at Page No. 10.**
10. Scanned copy of Technical Specification Compliance Sheet. Non-confirmation on compliance or /and leaving it blank may attract disqualification at eligibility level at **Page No. 38**

**Note:**

1. *The lowest bidder shall submit self attested documents within 5 days of the date of opening of bid.*
2. *No cutting/over writing shall be allowed in Treasury Challan/Demand, Draft/Pay order of Banker's Cheque/ Deposit at Receipt /Bank Guarantee of any scheduled Bank. If found so, their bid will be rejected.*
3. *In case of failure to submit the original document within 5 days after notification by email, then it shall make the contractor liable for forfeit of the EMD or action as mentioned in Undertaking on EMD behalf.*

**Assistant Engineer (E)**  
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New Delhi-110049

**Executive Engineer (E)**  
DED-41, CPWD, Andrews Ganj  
New Delhi-110049

<b>Receipt of deposition of original EMD (Receipt No..... date.....)</b>
--

Name of work	NIT No.	Estimated Cost	Amount of EMD	Last date of submission of bid.
<i>Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.</i>	67/EE(E)/DED-41/2021-22/Recall	Rs 60,50,142/-	Rs. 1,21,003/-	20.12.2021

*(\*To be filled by EE at the time of issue of NIT and uploaded alongwith NIT)*

Name of contractor	Form of EMD	Amount of Earnest money Deposit	Date of submission of EMD

*(#To be filled by EMD receiving EE)*

**Signature, Name and Designation of EMD  
Receiving officer (EE/AE(P)/AE/AAO)  
Alongwith Office stamp**

**Annexure-I**

**Performa for Earnest Money Deposit Declaration  
(To Be Given on Rs.10/- Non-Judicial Stamp Paper Duly Notarized)**

(Relaxation for Earnest Money Deposit as per OM No. F-9/14/2020/PPD dated 12-11-2020 issued by the Department of Expenditure. and DG/ CON/Misc./13 dt.23-11-2020 and DG/CON/Misc/17 dated 02.11.2021)

Whereas, I/We ..... (name of agency)..... have submitted bids for *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

I/We hereby submit following **declaration** in lieu of submitting Earnest Money Deposit.

- (1) If after the opening of bid, I/We withdraw or modify my/our bid during the period of validity of tender (including extended validity of tender) specified in the tender documents,  
**or**
- (2) If, after the acceptance of the bid, I/We fail to submit the performance guarantee before the deadline defined in the NIT/Bid document.

**I/we shall be suspended from bidding, making me/us ineligible to bid for CPWD tenders all over India for a period of one year from the date of issue of the order starting so and issued under authority of Executive Engineer of this work.**

Signature of the contractor(s)  
Name of Agency with complete address  
& Email ID

**Note:-**

1. *Executive Engineer shall initiate issue of show cause notice to the contractor who has violated Earnest Money Deposit Declaration within 15 days of violation by the contractor and his decision (to be taken within 60 days of violation by the contractor) thereof shall be final and binding on the contractor.*
2. *The declaration shall be submitted by the bidder strictly as per this format otherwise bid is liable to be cancelled.*

(TO BE SUBMITTED ON DULY NOTARIZED NON-JUDICIAL STAMP PAPER OF RS.  
10/-)  
(ALONGWITH BID SUBMISSION)

**Name of Work:** *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

**NIT No.** : 67/EE(E)/DED-41/2021-22/Recall

I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee

Dated:

**Signature of the Contractor**  
**Stamp of the Contractor**

**Personal Information of the bidder**  
**(ALONGWITH BID SUBMISSION)**

Name of Work: *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

Name of the bidder:

Complete Postal address:

Valid Email address for all communication:

Alternate email address, if any:

Valid Mobile Number for communication:

Alternate Mobile Number:

**Signature of the bidder**



**Annexure 'J'**  
**(ALONGWITH BID SUBMISSION)**

**DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DATE OF SUBMISSION OF TENDERS**

Sl.No	Name of work/ project and location	Owner or sponsoring organization	Cost of work in Rupees	Actual date of completion	Total Value of work done	Whether the work was done on back to back basis Yes/No	If work is in private sector then self certified copy of 26AS of IT act uploaded or not.
1	2	3	4	5	6	7	8

Signature of Bidder(s)

**Note:**

- Only those qualifying similar works(s) shall be considered which have been got executed through himself/themself only. If executed through another contractor on back to back basis then it shall be summarily rejected.**
- The agency shall mention only those qualifying works on which they claim their eligibility and must upload completion certificate with BOQ for the scope of work.**

**UNDERTAKING**  
**(TO BE SUBMITTED ON DULY NOTARIZED NON-JUDICIAL STAMP PAPER OF RS.**  
**100/-)**  
**(ALONGWITH BID SUBMISSION)**

**Name of Work:** *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

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Mr./Mrs/Ms..... (Name) from Firm/Company .....  
(Firm/Company name) visited the site and carefully observed the System, Solutions, Integration and Power Supply Networking.

In view of above, it is undertaken that I/We are fully aware about the“ On Grid PV Solar Power System” installed at Indira Paryavaran Bhawan, New Delhi. I/We confirm that I/We shall have the complete support from all the Vendors /Software Licensor / Integrator if required during execution of work.

Further, I am aware that in case of failure to commission the System upto the minimum desired level then I/We are liable to be disqualified to bid in CPWD for one year and the Performance Guarantee shall be forfeited.

It is also undertaken that if I / We happen to be successful bidder then I / We shall submit the Annexure-‘L’ along with the submission of Performance Guarantee (P.G) failing which CPWD may take action equivalent to non submission of P.G.

Dated:

**Signature of Company/Firm**  
**Stamp**

(TO BE SUBMITTED ON DULY NOTARIZED NON-JUDICIAL STAMP PAPER OF RS.  
10/-)  
(ALONGWITH P.G. SUBMISSION)

**Name of Work:** *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

**NIT No.** : 67/EE(E)/DED-41/2021-22/Recall

I/We OEM/OEA/ Manufacturer of .....(Brand Name) Solar String Inverter, hereby certify:-

- That, the Solar Inverter will not contain IGBT, DSP and Sensors components made from China (PRC).
- That, We shall provide unconditional support to M/s.....(Name of Contractor) throughout the warranty period( 60 Months ) for comprehensive maintenance by supplying/providing necessary spares & expert services for Solar String Inverter.
- I/We shall attend the fault/ complaint raised from CPWD directly without claiming any payment from CPWD.
- Further it is also certified that I/We are competent to issue this certificate on behalf of OEM/OEA/ Manufacturer.

Dated:

**Signature of representative of OEM/Manufacturer/ OEA  
Stamp**

**CPWD-6 FOR e-TENDERING**

**Item rate tenders** are invited on behalf of President of India **from Specialized Agency, in two bid system (Eligibility cum Technical Bid and Price bid)** for the work *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

~~The enlistment of the contractors should be valid on the last date of submission of tenders.~~

In case the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of tenders.

- 1.1 The work is estimated to cost Rs. 60,50,142/- only. This estimate, however, is given merely as a rough guide.
2. Agreement shall be drawn with the successful tenderer on prescribed Form No. CPWD - 7 (or other Standard Form as mentioned) which is available as a Govt. of India Publication. Tenderer shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be 03 Months from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
4. The site for the work is available. Yes.
5. The tender document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the website [www.tenderwizard.com/cpwd](http://www.tenderwizard.com/cpwd) or [www.eprocure.gov.in](http://www.eprocure.gov.in) free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.
8. Earnest Money in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of **Executive Engineer(E), ED-X, CPWD, New Delhi**) shall be scanned and uploaded to the e-tendering website within the period of tender submission **OR only EMD Declaration. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission.(The EMD document shall only be issued from the place in which the office of receiving division office is situated). The EMD receiving Executive Engineer shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format(enclosed) uploaded by the tender inviting EE in the NIT.**  
**The receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.**

A part of earnest money is acceptable in the form of bank guarantee also. In such case, 50% of earnest money or Rs. 20 lakh, whichever is less, shall have to be deposited in shape

prescribed above, and balance in shape of Bank Guarantee of any scheduled bank having validity for six months or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

**Copy of ~~Enlistment Order~~ and other documents as specified in the NIT shall be scanned and uploaded to the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in NIT shall have to be submitted by the lowest bidder only, within a 5 days physically in the office of tender opening authority.**

Online tender documents submitted by intending bidders shall be opened only of those bidders, **whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.**

The bid submitted shall be opened at 18:30 PM on 20.12.2021

9. The bid submitted shall become invalid and e-Tender processing fee shall not be refunded if
  - i) The bidder is found ineligible.
  - ii) The bidder does not deposit original EMD with division office of any Executive Engineer, CPWD. Or the bidder does not upload EMD Declaration performa.
  - ii) The bidder does not upload all the documents (including VAT Registration/Sales Tax Registration,) as stipulated in the bid documents **including the copy of receipt for deposition of original EMD.**
  - iii) if any discrepancy is noticed between documents as uploaded at the time of submission of bid and hard copies as submitted **physically by the lowest bidder in the office of tender opening authority.**
10. The contractor whose tender is accepted will be required to furnish performance guarantee of **3% (Three Percent)** of the tendered amount with In the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/ demand Draft of any scheduled bank/Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited alongwith bid shall be returned after receiving the aforesaid performance guarantee  
**The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations of proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund code No. if applicable and also ensure the compliance of aforesaid provisions by the sub contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within the period specified in schedule F.**
11. Intending Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services

required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

12. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.
13. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
14. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rate quoted.
15. The contractor shall not be permitted to tender for works in the CPWD Circle (Division in case of contractors of Horticulture / Nursery category) responsible. for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazette officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
16. No Engineer of gazette rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as afore said before submission of the tender or engagement in the contractor's service.
17. The validity period for acceptance of tenders in case only financial bids are invited shall be ~~30 days from the last date of receipt of bids~~ and in all other cases 75 days from the last day of receipt of technical bid. If any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the rebidding process of the work.
18. This notice inviting Tender shall form a part of the contract document. The successful tenderer /contractor, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
  - a) The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender

and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

- b)** Standard C.P.W.D. Form - 8 or other Standard C.P.W.D. Form as mentioned.

<b>On non-Judicial Stamp paper of minimum Rs. 100</b>
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**(Guarantee offered by Bank to CPWD in connection with the execution of contracts)**

**Form of Bank Guarantee for Earnest Money Deposit/Performance Guarantee/  
Security Deposit/Mobilization Advance**

1. Whereas the Executive Engineer.....(name of division)....., CPWD on behalf of the President of India(hereinafter called "The Government") has invited bids under.....(NIT No.)..... dated..... for .....(name of work)..... The Government has further agreed to accept irrevocable Bank Guarantee for Rs.....(Rupees.....only) valid upto .....(date)\*..... as **Earnest Money Deposit** from.....(name and address of contractor).....(hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

OR\*\*

Whereas the Executive Engineer.....(name of division)....., CPWD on behalf of the President of India(hereinafter called "The Government") has entered into on agreement bearing number.....with.....(name and address of the contractor).....(hereinafter called "the Contractor") for execution of work.....(name of work)..... The Government has further agreed to accept irrevocable Bank Guarantee for Rs.....(Rupees.....only) valid upto .....(date)\*..... as **Performance Guarantee/Security Deposit/Mobilization Advance** from.....(name and address of contractor).....(hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the agreement.

2. We, .....(indicate the name of the Bank).....(herein after referred to as "the Bank"), hereby undertake to pay the Government an amount not exceeding Rs.....(Rupees.....only) on demand by the Government within 10 days of the demand.
3. We, .....(indicate the name of the Bank)....., do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. .... (Rupees .....only)
4. We, .....(indicate the name of the Bank)....., do hereby undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.
5. We, ..... (indicate the name of the Bank)....., further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. We, .....(indicate the name of the Bank)....., further agree that the Government as its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the contractor's liabilities.



7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
8. We, ..... (indicate the name of the Bank).....undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to .....unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs..... (Rupees ..... ) and unless a claim in writing is lodged with us within the date of expiry or the extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Dated the .....

Witnesses:

1. Signature.....  
Name and address

Authorized Signatory  
Name  
Designation  
Staff code No.  
Bank Seal

2. Signature.....  
Name and address

\* Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

\*\*In paragraph1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be.

CPWD – 8

CPWD

**GOVERNMENT OF INDIA  
CENTRAL PUBLIC WORKS DEPARTMENT**

**Item Rate Tender & Contract for Works**

(A) Tender for the work of *Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.*

- (B) (i) To be submitted by **18:00** Hours on 20.12.2021 to **Executive Engineer(E),DED-41, CPWD, Andrews Ganj, New Delhi**  
(ii) To be opened in presence of tenderers who may be present at **18:30** hours on 20.12.2021 in the office of **Executive Engineer(E),DED-41, CPWD, Andrews Ganj, New Delhi.**

Issued to.....

**Signature of officer issuing the documents .....**

**Date of Issue: -**

**TENDER**

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for seventy five (75) days from the due date of its opening and not to make any modification in its terms and conditions.

**Only EMD Declaration as per annexure I Or a sum of Rs. 1,21,003/-** is hereby forwarded in cash/receipt treasury Challan / deposit at call receipt of a scheduled bank/fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by a scheduled bank as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period. I/We agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in **Clause 12.2 and 12.3** of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money & Performance

Guarantee as aforesaid. I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I / we shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

**Dated: -**

**Signature of Contractor**

**Witness: -**

**Postal Address: -**

**Address: -**

**Occupation: -**

#### ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of the President of India for a sum of Rs. ....(Rupees.....).

The letters referred to below shall form part of this contract agreement:-

- (a)
- (b)
- (c)

**For & on behalf of President of India**

**Signature .....**

**Dated:**

**Designation .....**

<b>CPWD – 8</b>			<b>CPWD</b>	
<b>PROFORMA OF SCHEDULES (MAINTENANCE WORK)</b>				
(Separate Performa for Civil, Electrical & Horticultural Works in case of Composite Tenders)				
(Operative Schedules to be supplied separately to each intending tenderer)				
<b>SCHEDULE 'A'</b>				
Schedule of quantities			Attached (Electrical Works)	
<b>SCHEDULE 'B'</b>				
Schedule of materials to be issued to the contractor				
Schedule				
S.No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5
-----NIL-----				
(Material required for the work shall be arranged by the Contractor)				
<b>SCHEDULE 'C'</b>				
Tools and plants to be hired to the contractor				
S.No.	Description		Hire charges per day	Place of Issue
1	2		3	4
-----NIL-----				
(shall be arranged by the Contractor)				
<b>SCHEDULE 'D'</b>				
Extra schedule for specific requirements/documents for the work, if any.			<b>Attached as Additional conditions and Specifications.</b>	
<b>SCHEDULE 'E'</b>				
Reference to General Conditions of contract			General Conditions of Contract 2020 (Maintenance Works) for CPWD Works with amendments issued upto last day of online receipt of tender	
Name of Work :				
Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.				
Estimated cost of work :			<b>Rs 60,50,142/-</b>	
(i)	Earnest money	Rs. 1,21,003/- or Only EMD Declaration as per annexure I		
(ii)	Performance guarantee	3% of Tendered Value		
(iii)	Security Deposit	2.5% of Tendered Value		
<b>SCHEDULE 'F'</b>				
General Rules & Directions :			<u>GCC 2020 (Maintenance)</u> with amendments	

	issued upto last day of online receipt of tender		
Officer inviting tender -	Executive Engineer (E), DED-41, CPWD, Andrews Ganj, New Delhi		
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3	See Below		
Definitions:			
2 (v) Engineer-in-Charge	Executive Engineer (E), DED-41, CPWD, New Delhi		
2(viii) Accepting Authority	Executive Engineer (E), DED-41, CPWD, New Delhi		
2(x) Percentage on cost of materials and labour to cover all overheads and profits	15%		
2(xi) Standard schedule of Rates	Delhi Schedule of Rates 2018 ( correction issued upto last day of online receipt of tender ) and Market Rate		
2(xii)Department	Central Public Works Department		
9(ii) Standard CPWD Contract Form :	General Conditions of Contract 2020 (Maintenance Works) for CPWD Form – 7 with amendments issued upto last day of online receipt of tender		
Clause 1			
(i)Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable Labour Licenses, Registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof, documents pertaining to association with the OEMs from the date of issue of letter of acceptance, in days	07 Days		
(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above	03 Days		
Clause 2			
Authority for fixing compensation under clause 2	Superintending Engineer Delhi Circle - 4, CPWD New Delhi		
Clause 2A			
Applicable clause/clause 2A	No		
Clause 5			
Number of days from the date of issue of letter of acceptance for reckoning date of start	10 Days		
Table of Mile-stones		As per Table given below	
S. No.	Description of Milestone (Financial)	Time Allowed in days (from date of start )	Amount to be withheld in case of non achievement of

			Milestone
1	<b>Not Applicable</b>		
2			
3			
Time allowed for execution of work		03 Months	
<b>Authority to decide :-</b>			
(i) Extension of time		<b>Executive Engineer (E), DED-41, CPWD, New Delhi</b> (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)	
(ii) Rescheduling of mile stones		<b>Not Applicable</b> (Superintending Engineer in Charge or Superintending Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)	
Applicable Clause5/Claue5A		Clause 5	
<b>Clause 7</b> Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment		<b>Rs. 15 Lakhs</b>	
<b>Clause 7A</b> <b>Whether Clause 7A shall be applicable</b>		No	
<b>Clause 10 A</b> List of testing equipment to be provided by the contractor at site lab:		As per Table-1	
<b>Clause 10 B</b> Whether Clause 10 B shall be applicable		Not Applicable	
<b>Clause 10C</b> Component of Labour expressed as percent of total value of work		25%	
<b>Clause 10CC</b> Clause 10CC to be applicable in contracts with stipulated period of completion exceeding the period shown in the next column <b>Applicable/ Not Applicable</b>  Schedule of Component of materials, Labour etc. For price escalation. Component of Civil:(Except materials covered under clause 10 CA)/Electrical value of work:-		03 Months  N.A.  expressed as percent of total value of work. – Xm 75%	

Component of labour:-			Expressed as percent of total value of work.-Y 25%				
Component of P.O.L.:-			Expressed as percent of total value of work.- Z(N.A.)%				
Clause 11 Specifications to be followed for execution of work			CPWD General Specifications for Electrical Works Part I Internal – 2013, CPWD General Specifications for Electrical Works Part II External – 1994 as amended upto date, The additional specifications are to be read with above and in case of any variations; specifications given along with the tender shall apply.				
Clause 12 Authority to decide deviation upto 1.5 times of tendered amount			SE,DC-4, CPWD				
12.2 & 12.3 Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work			No Limit				
12.5 Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work			No Limit				
Clause 16 Competent Authority for deciding reduced Rates			Superintending Engineer Delhi Circle - 4, CPWD, New Delhi				
Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site:			As per actually required at site and shall be arranged by the contractor.				
Clause 25: Constitution of Dispute Redressal Committee (DRC) :							
For all claims in dispute							
Conciliator			ADG(RD), CPWD, New Delhi				
Arbitrator appointing authority			Superintending Engineer, Delhi Circle - 4,CPWD, New Delhi				
Place of arbitration			New Delhi				
CLAUSE 31			In case, Electricity is supplied by the Department, 1% (One Percent) amount shall be recovered from the gross amount of the work done.				
Sr. No.	CLAUSE 32 (i): Requirement of Technical Representative(s) and Recovery Rate						
	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical representative)	Minimum experience (years)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32(i)	
						Figures	Words.
1.	Graduate Engineer or Diploma Engineer	E&M	Project Planning/ Quality/ billing Engineer	2 or 5 respectively	1	Rs. 15,000/- per month	Rs. Fifteen Thousand per

						per person	month per person
<b>Assistant Engineers retired from Government Service that are holding Diploma will be treated at par with Graduate Engineers.</b> Diploma holder with minimum 10-year relevant experience with a reputed construction company can be treated at par with Graduate Engineers for the purpose of such deployment subject to condition that such diploma holders should not exceed 50% of requirement of degree engineers.							
<b>Clause 38</b> (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of				Delhi Schedule of Rates 2018			
Variations Permissible On Theoretical Quantities <b>(a) Cement</b>				Nil			
(b) Bitumen for all works				Nil			
c) Steel Reinforcement and structural steel (sections for each diameter, section and category)				Nil			
(d) All other materials				Nil			

**Assistant Engineer (E)**  
DED-41, CPWD, Andrews Ganj  
New Delhi-110049

**Executive Engineer (E)**  
DED-41, CPWD, Andrews Ganj  
New Delhi-110049



TABLE-1

**LIST OF TESTING EQUIPMENT TO BE PROVIDED BY CONTRACTOR AT SITE AS PER CLAUSE 10A**

Sl. No.	T & P Articles	Quantity
1.	Insulation Tester Megger (0 - 1000v)	1 No.
2.	Clamp on Tongue Tester, Solder Machine	1 No.
	Aluminium Ladder- (a) Suitable for internal & external electrical work. 1 No.	1 No.
	(b) Wheel ladder for street light repairing	1 No.
3.	Spanners kit	1Set
4.	Plier / cutter	1Set- with each wireman
5.	Screw drivers	1Set- with each wireman
6.	Test Lamp & Line Tester	1Set- with each wireman
7.	Earth resistance tester	1 No.
8.	Chain wrench 2", 4", 6"	1 each
9.	Pipe wrench up to 4"	1 No.
10.	Tacho Meter	As required at site.
11.	Hydro Meter	
12.	Crimping tool for all sizes.	
13.	Lux Meter (Digital)	
14.	Vernier; Screw gauge (Digital)	
15.	Chase Cutting Machine	
16.	DIE & VICE	
17.	Dial Gauge	
18.	Allen Key set	3 Set
19.	Blower	1 Set
20.	Vacuum Cleaner	1 Set
21.	Hand Gloves HT	2 Set
22.	Hand Gloves LT	2 Set.

### **Schedule of Work**

**Name of Work:-** Supplying Installation Testing and Commissioning of 8 x 100 kW string solar inverters by replacing existing central inverters of 4 x 250 kW including modification in power transformer at Indira Paryavaran Bhawan, Jorbagh Road, New Delhi.

S. No.	Description	Qty		Rate	Unit	Amount
1	Replacement of existing Four units of 250 kW Central Inverter (PCU) by Design, Supply, Installation and Commissioning of ongrid Solar Power Conditioning unit String Inverter of capacity $\geq 100$ KW, and having specifications as detailed subsequently in order to work the PCU (inverter) smartly to adjust the parameters to suit the Transformer and Grid including making connections & interconnections between solar modules, main power cable to grid supply PCU unit etc. complete i/c dismantling the existing four 250 kW inverters units following specifications and Protection class as specified by manufacturer-					
a	DC Input voltage range: 180-1000 V					
b	Numbers of MPPT : 10 Nos (20 String)					
c	Output Voltage 400 V (+15% - 10%) AC three phase, 4 wire System, AC voltage range : 300-460 V.					
d	Output voltage suitable to generate AC Power with efficiency $>97\%$ and THD $<3\%$					
e	Nominal frequency 50Hz,					
f	Aambient temperature from $-25$ to $60^{\circ}\text{C}$ & $> 50^{\circ}\text{C}$ with smart de-rating					
g	night time consumption $< 2\text{W}$ with RS-485,					
h	Wi-Fi, SD Card, Delta Protocol / Sunspec Protocol Communication Port/ Protocol					
i	Having Grid Support of IEC 62109-1/-2, IEC 61727, IEC 62116, IEC 61683, VPC, EN 61000-6-2, EN 61000-6-3					
j	Protection against Leakage Current Protection, Low Insulation Protection, PID Elimination.	8	Job		p/Job	

2	Design, Supplying and modification of existing string system of 15 IN and 1 OUT by providing suitable new connector box and all other associated accessories required in the existing DCDB Panel by arranging strings in such a way i.e. 30 IN and 20 OUT by using Y connector incoming side, for connecting 2 Strings including complete with suitable size Transparent lid Polycarbonate enclosure IP-65 with 30 Amp, 1000V DC fuses, MC4 1000 volts Male plus Female Pair, suitable size terminals and all other consumable materials suitable to accomodate all the existing surge protection system complete to make the system operational in all respect complete with safety features reqd in synchronization with the new inverter system i/c connection, interconnection, testing commissioning as reqd.	8	Sets		P/Set	
3	Fabrication, supplying, installation, testing & commissioning of cubical panel of size approximately 1500mm x 800mm x 400mm made out 14 SWG CRCA sheet, dust and vermin proof, duly powder coated with RAL 7035 after seven tank process system having 500 Amp. 4 strip aluminium bus bar duly sleeved including following switchgears & accessories, connection, interconnections with copper flexible wire or 4 strip aluminium bus bar duly sleeved with heat shrinkable sleeves of suitable capacity with following accessories etc. complete as required.					
a	200 Amp. Four Pole 36 kA MCCB with TM, O/L & S/C release L frame with handle - 2 Nos. (Incomer)					
b	400 Amp. Four Pole 50 kA MCCB with TM, O/L & S/C release L frame with handle - 1 No (Outgoing)					
c	LED indicating Light Red & Yellow 240 V AC - 6 Set					
d	LED indicating light Blue - 3 Set					
e	Current Transformer Encapsuled type, CL-1.0, 5 VA, rating 400/5A - 3 Nos.					
f	Multifunction Meter CL-1.0, 96sq.mm, CTR-5A - 1 No.					
g	6 Amp TPN MCB, 10 kA C curve - 1 No.	4	Sets		P/Set	

4	Supplying, fixing, installation & commissioning of cross linked polyolefin, UV resistant zero halogen insulation of annealed tinned copper conductor of 6 sq.mm DC solar cable, flame retardent, no-smoke i/c fixing on existing cable tray and providing necessary support where as required at site. <b>(DCDB box to Inverter)</b>	1500	Mtrs.		Mtr.	
5	Supplying, Installation, Testing & Commissioning of 1 core x 70 sqmm (for neutral) 1100 V XLPE insulated, XLPE/PVC sheathed armoured (Heave Duty) copper conductor power cable as per specification including all suitable clamping, bracketing etc. complete in all respect as per site requirement conforming to IS 7098 (Part 1) 1988 etc. complete as required.	900	Mtrs.		Mtr.	
6	Supplying and making end termination with brass double compressor gland and copper thimble for following XLPE insulated and PVC sheathed copper conductor cable for 3.3 kV / 1.1 kV grade of following size as required.					
	i) 3 core x 120 sqmm armoured copper cable	16	Sets		P/Set	
	ii) 1 core x 120 sqmm armoured copper cable	16	Sets		P/Set	
7	Supplying, Fixing, Testing & Commissioning of 1 core x 50 sqmm (for earthing) 1100 V XLPE insulated, XLPE/PVC sheathed armoured (Heave Duty) copper conductor power cable as per specification including all suitable clamping, bracketing etc. complete in all respect as per site requirement conforming to IS 7098 (Part 1) 1988 etc. complete as required.	450	Mtrs.		Mtr	

8	Repair/ Modification of existing Kirloskar make indoor type step-up 0.290kV/11kV, 1250 kVA, 3 phase 50 Hz cast resin dry type transformer to 0.415 kV/ 11kV $\pm$ 5%, 1250 kVA, 3 phase 50 Hz cast resin dry transformer by replacement of 3 nos high class new LV Cu coils (AS Per OEM) provided suitable class insulation i/c removing from existing location Indira Paryavaran Bhawan complete with disconnection LV and HT side to ready it for transportation to OEM factory/ manufacturing unit anywhere in India including packaging, transportation, transit insurance of To and Fro Journey, and reinstallation at site connecting all LV and HT side terminals, interconnection i/c existing earthing and making the transformer to match the level/ all parameters compatible with solar inverter unit installed etc as reqd at site.	1	No		Each	
9	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core 240 sq mm, XLPE aluminium conductor cable of 11 KV grade etc. complete as required. (Make: 3M)	1	Set		Set	
10	Credit/Rebate of old unserviceable dismantle materials are as following:-					
	i) 250 kW Central Inverter with accessories (If any)	4	Nos.		Each	
	<b>Total</b>					

**Assistant Engineer (E)**  
DED-41, CPWD, Andrews Ganj  
New Delhi-110049

**Executive Engineer (E)**  
DED-41, CPWD, Andrews Ganj  
New Delhi-110049

**General Terms and Conditions**

1. The Work shall be carried out at Indira Paryavaran Bhawan, MoEFCC, Jorbagh Road, Delhi.
2. The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (internal) 2013, Part-II (external)1994, Part-IV(sub-station)2013 and DSR & AOR (E&M) Solar Photovoltaic Power Plant 2019 as amended upto date, relevant I.E. Rules, BIS/IES and as per directions of Engineer-in-charge. These additional Specifications /conditions are to be read in conjunction with above and in case of variations; specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read along with schedule of quantities for the work.
3. The tenderer should in his own interest visit the site and get familiarize with the site conditions before tendering.
4. The firm shall be required to supply all the items of same make (among the list of approved makes) wherever available to ensure compatibility, proper matching and ease of maintenance.
5. Department reserves the right to accept the upgraded version of various items, if there is technological advancement with reference to these makes/models. The decision of department in this reference shall be final and binding on the firms.
6. The contractor shall discuss with EE(E) or his authorized representative / visit the site before placing the supply order / delivery of materials at site as per actual requirement **as the actual Quantity of materials required may deviate (+/-) from the quantity taken in the schedule of Work/inventory of the agreement.**
7. In addition to supply, installation, testing and commissioning of complete installation, following works shall be deemed to be included within the scope of work to be executed by the tenderer as this is a turnkey job.
  - a) Minor building works necessary for installation of equipments, foundation, making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc as required.
  - b) Small wiring, inter-connection etc inclusive of all materials and accessories, necessary to comply with the regulations as well as proper and trouble free operation of the equipment.
  - c) Closing of the cable entry points in sub-station/D.G Set room to arrest seepage of water, rodents etc.
  - d) Necessary testing equipments for commissioning.
  - e) Watch and Ward of materials and/or installation and equipments till their handing over to the department.
8. All material shall be got approved from Engineer-in-Charge before use.
9. The contractor shall make his own arrangement at his own cost for electrical/ general tools and plants required for the work.
10. The work shall be carried out according to approved drawings/details which shall be got

approved by successful bidder for execution of work and as per instructions of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall not have any claim due to change in layout.

11. The work shall be carried out in engineering like manner. The bad workmanship will not be accepted and defects shall be rectified at contractor's cost to the satisfaction of the Engineer-in-Charge. All the debris of the electrical works should be removed and the site should be cleared by the contractor immediately after the accruing of debris. Similarly any rejected material should be immediately cleared off from the site by the contractor.
12. The contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.
13. The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department. However if there is any delay in construction from the department side, the installation may be taken over in parts, but the decision on the same shall rest with Engineer-in-Charge which shall be a binding on the contractor.
14. All U.G. Cables before laying shall be got tested for continuity in presence of the authorized representative of the Engineer-in-Charge.
15. Route of the U.G. Cables shall be got approved from the Engineer-in-Charge or his authorized representative.
16. Contractor shall preserve the copies of invoices, test certificates; gate passes etc. to prove the genuineness of material / purchases which are used at site as per agreement
17. Contractor shall submit SLDs & layout plan in triplicate in Dwd.pdf & A4 size hard copies in triplicate duly signed and checked by the concerned JE/AE.
18. Quantities indicated in Schedule of work are only tentative. Contractor shall consult AE-in-Charge before procurement. Payment shall be made only for the quantities actually executed and measured.
19. Connection of all incoming and outgoing cables is included in the scope of work for which nothing extra shall be paid.
20. To and Fro transportation i/c Loading and Unloading by Crane, deployed labour, making all type of connection, interconnection, removing and reinstallation back to site is already included in the cost, nothing extra shall be paid on account of this scope.
21. The work shall be executed and installation done must be conform to Part IV substation and IS 11171:1985, IS 10028 (part II & III), IS 2099, IS 2705 as amended up to date.
22. Bus bar trunking & Cable end box disconnection & reconnection all the interlinked connections, Proper Earthing Connection already taken in the scope.
23. All Necessary Certificates, Safety Certificates, Performance parameters need to be provided from OEM.
24. Rating Plates and Diagram Plates also to be provided as per IS 11171:1985
25. Before energising Transformer final Inspection and testing at site with satisfactory performance test certificate needs to be done from OEM to the satisfaction of Engineer In charge.

**Assistant Engineer (E)**

DED-41, CPWD, Andrews Ganj  
New Delhi-110049

**Executive Engineer (E)**

DED-41, CPWD, Andrews Ganj  
New Delhi-110049

**COMMERCIAL CONDITIONS**

- 1.1 If required to engage the workman round the clock or in night shift in order to complete the work on war-foot level then the permission shall be arranged by the department. However the firm shall intimate about it right at the time of submission of PG. Necessary pass arrangement or entry arrangement shall be made by the concerned AE(E) for the workman list provided by the firm.
- 1.2 A permanent supervisor fully skilled in networking shall be stationed at worksite in general duty period to co-ordinate with department and other agency working at that site.
- 1.3 Type of Contract: The work to be awarded by this tender shall be treated as indivisible works contract.

**2.0 TERMS OF PAYMENTS**

The following percentage of contract rates for the various items included in the contract shall be payable against the stages of work shown herein.

	<b>Stage of Work</b>	<b>String Inverter</b>	<b>All other Items</b>
I	After initial inspection (wherever specified) & delivery at site in good condition on pro-rata basis.( Challan/ Bill/ Invoice/ Packing list required)	70 %	70%
II	On completion of pro-rata installation	20 %	20%
III	On testing, commissioning and handing over to the department for beneficial use	10%	10%

**3.0 RATES**

- 3.1. The rates quoted by the tenderer, shall be firm and inclusive of all taxes, duties, levies, octroi etc. and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary construction of storage, risks, over head charges, general liabilities/ obligations and other clearance. The escalation in the rates shall not be permitted.
- 3.2 Only the tendered rates for comprehensive maintenance period shall be paid and no extra charges shall be payable in respect of any escalation in price index for labour etc. during the period of contract. This should be noted clearly.

**4.0 COMPLETENESS OF TENDER**

All sundry equipment, fittings, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections, and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the work shall be deemed to have been included in the tender irrespective of the fact whether such items are specifically mentioned in the tender documents or not.

**5.0 STORAGE AND CUSTODY OF MATERIALS**

Storage accommodation shall be provided to the extent, the space is available with the department. **Watch and ward of the stores and their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department.**



## 6.0 CARE OF THE BUILDING

Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.

## 7.0 COMPLETION PERIOD

**The work is of very urgent nature as involved with daily revenue gain. Therefore the completion period shall be adhered to very strictly.** The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc., arrangement of materials & equipments, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-in-Charge.

## 8.0 Running in Period, Guarantee

- 8.1 Solar String Inverters shall be guaranteed for a period of 60 months, from the date of taking over the installation by the department, against unsatisfactory performance and /or break down due to defective design, workmanship or material.

## 9.0 POWER SUPPLY:

A temporary single phase power supply of 1 KW shall be provided during execution of work, at single point inside the campus. Further arrangements for tapping power connection from this point shall be made by the contractor. Electricity shall be provided free of cost for bonafide use of work.

## 10.0 WATER SUPPLY:

Water supply shall be made available by the department at one point in Campus free of cost.

## 11.0 ACCEPTABLE MAKES OF VARIOUS EQUIPMENTS:

The acceptable makes of various equipments/ components/ accessories have been indicated in “Acceptable Makes” The tenderer shall work out the cost of the offer on this basis. **Alternate makes are not acceptable.**

## 12.0 Extent of work

- 12.1. The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation such tests and adjustments and commissioning as may be required by department. The term complete Installation shall not only mean major items of the Solar PV Inverter covered by specifications but all incidental sundry components necessary to complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in detail in the Tender document in connection with this contract.
- 12.2. Minor building works necessary for installation of equipment, foundation, making of opening in floors and restoring to their original condition, finish the necessary grouting etc. as required.
- 12.3 All the functionality as mentioned in schedule of work shall be got operated satisfactorily as per instruction of Engineer-in-charge.
- 12.4 The defect liability period shall be for one year from the date of acceptance of plant/ date of completion/ date of handing over to Deptt whichever is at later stage. The DLP period shall cover free man and material for restoration of the plant upto the acceptance level. If there is delay in attending the complaint under the DLP period then this period will extend further to the extent of delay in attending the complaint.

**13.0 Mobilization Advance:** No mobilization advance shall be paid.

**14.0 Insurance:**

All consignments are to be duly insured up to the destination from warehouse at the cost of contractor. The insurance covers shall be valid till the equipments handed over duly installed, tested and commissioned.

**15.0 Indemnity**

The successful tenderer shall at all times indemnify the department consequent to this contract. The successful tenderer is liable to such accidents as may be done to ant cause in accordance with the India Law and regulation and the department shall not the responsible for the accident or damage incurred or claims arising there from during the period of execution or construction under the responsibility of the successful tenderer and putting into the operation of the equipments under the supervision of the successful tenderer is so far as the latter is responsible. The successful tenderer shall also provide all insurance as may be necessary to cover the risk.

**16.0 Final Bill Payment**

Final bill shall be paid to the Contractor after submission of Bill by the contractor alongwith all enclosures as required in CPWD billing system. **In addition to that the Contractor shall submit No Objection Certificate for the payment issued from the OEM / Dealer of the String Inverter.**

**17.0 Training**

The scope of works includes training of personnel at site/ works. The training shall include on both the equipment (hardware) and software, as applicable. Nothing extra shall be payable on this account.

**18.0 Release of Performance Guarantee**

Only 50% of P.G. deposited shall be released just after recording of the completion of work on the request made by the agency. Rest 50% shall be returned to the contractor after 5 years of actual completion of work.

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### **SPECIAL TECHNICAL CONDITIONS**

1. **The Compatibility of the system will have to be ensured with Solar modules whose details are provided in Appendix A. No reason of non-compatibility shall be accepted.**
2. The work has to be carried out on with Solar Power Plant which is already generating power. Though conversion is partial therefore, down time allowed shall be minimum. Elongation of downtime shall be chargeable on per day basis.
3. Compatibility of complete system, right from generation of power in Solar Photovoltaic Panel to the injection of generated power into distribution system shall be essence of the work. Therefore agency (Contractor) will not be allowed to take excuse of any kind in any issue arise during the integration of the system.
4. The existing step-up power transformer has to be modified to suit the solar strong input output. Therefore it shall be sole responsible of the contractor to modify the power transformer exactly to the requirement of string inverter they are proposing. Therefore the input & output specifications in finer details shall be only as per compatibility with string inverter.
5. The contractor shall liaise with M/s Kirloskar Electric and shall fix stamp date & period for modification in step up transformers of 1250 KVA. The complete period from de-energisation to re-energisation of transformer shall not be allowed to be more than 40 days. The extension upto next 5 days shall be allowed if M/s Kirloskar gives it in writing by the 35<sup>th</sup> Days of delivery of transformer that- *"The modification work is in progress at the Plant and expected to be released from the plant in next 10 Days"*. Thereafter for delay in re-commissioning of transformer with solar generation recovery shall be made @ 5000/- per day. This recovery shall be additional than any recovery liable under various other clauses of the contract.
6. If it is required to liaise with NDMC (Power Supply Company) then it shall be coordinated with CPWD. Nothing extra shall be paid on behalf of this coordination except reimbursement of payment made to NDMC, if any.
7. **Data manual and drawings to be furnished by the tenderer:** The tenderer may furnish alongwith the tender, detailed technical literature, pamphlets and performance data.
8. **System Testing**
  - a) Soon after the work is completed, the contractor shall inform in writing to Engineer-In-Charge of the work for getting the complete system i/c all equipments and controls thoroughly inspected and tested for satisfactory performance.
  - b) **The Minimum Generation of AC Power after conversion ( before input in Transformer) in String Inverter in no case should be less than 97 % of DC power input. The verification of the same shall be done on Daily basis for 7 consecutive days. Only after compliance of this, the System shall be accepted.**
  - c) **If the above conversion is below 97 % but not below the 96 % then Contractor will have two options – A Either agree for ONE TIME recovery @ Rs. 50,000/- ( Rs. Fifty thousands ) per string inverter; B OR Replace the String Inverters with another brand for which 14 days shall be allowed as additional period without any penalty. But it must be ensured that replaced Inverter must fulfill the condition of conversion measured at site.**
  - d) Any other defect noticed during these tests shall be speedily rectified by the contractor within a specified time failing which the same shall be got done at his risk and cost of the contractor.

### **9 Final Documentation**

**A** Upon commissioning and final handover to the installation, contractor shall submit within a week to the Engineer-in-charge 3 folders of the following indexed and bound together in hard cover binder in addition to the completion Drawings.

- i)* Comprehensive operation and maintenance manual.
  - ii)* Equipment warranties from manufactures.
  - iii)* Commissioning and testing reports.
  - iv)* In case of imported product, landing papers/ custom clearance papers.
- B.** At the finalization of the work and before issue of final certificate of completion by Engineer-in-charge, the contractor shall furnish a written indemnifying the department against defective material and workmanship for the defects liability period.

## **LIST OF APPROVED MAKES**

Acceptable makes of materials to be used in the work are enclosed. In case of non-availability of the same makes, the Engineer-in charge may allow use of alternative makes

### **Acceptable makes of material**

<b>S.No.</b>	<b>Items</b>	<b>Makes</b>
1	PCUs ( String Inverter)	Delta / ABB / Polycab / SMA / Waaree / Havells
2	Cubical Panel	CPRI Approved Make (Approval should not be older than 5 Years)
3	Junction Boxes	As per OEM
4	Data Logging system with remote monitoring	As per OEM
5	AC / DC Distribution units	Siemens / ABB / Schneider Electric / Legrand / Havells / Polycab
6	Wires / Cables	Havells / Polycab / RR / KEI
7	Earthing Kit	JMV / Electro power / Stemon

1. Any other item not covered above shall be as per the direction of the E-in-C
2. Manufacturer's test certificates of all equipment's/materials/panels etc. are required at the time of supply and the year of manufacturing should be current. Materials of old manufacturing date (more than six months) will not be accepted.

**TECHNICAL BID**  
**TECHNICAL SPECIFICATION COMPLAINT SHEET**  
**(TO BE CONFIRMED BY THE BIDDERS)**

S. No.	Description	Compliance (Yes/No)
<b>A)</b>	<b>String Inverter (PCU)</b>	
1	DC Input voltage range: 180-1000 V	
2	Numbers of MPPT : 10 Nos (20 String)	
3	Output Voltage 400 V (+15% - 10%) AC three phase, 4 wire System, AC voltage range : 300-460 V.	
4	Output voltage suitable to generate AC Power with efficiency >97% and THD <3%	
5	Nominal frequency 50Hz,	
6	Wi-Fi, SD Card, Delta Protocol / Sunspec Protocol Communication Port/ Protocol	
7	Having Grid Support of IEC 62109-1/-2, IEC 61727, IEC 62116, IEC 61683, VPC, EN 61000-6-2, EN 61000-6-3	
8	Protection against Leakage Current Protection, Low Insulation Protection, PID Elimination.	
<b>B)</b>	<b>Modification of Transformer</b>	
1	Modified AC Voltage Input: 0.415 Kv $\pm$ 5%	
2	Retention of KVA Capacity: 1250 KVA	
3	Indoor type: Suitable for 3 Phase 50 Hz	
4	Compliance to IS: 2026 IS: 11171	
5	Winding Material : Copper	
6	Vector Group: Dyn 11	
7	Type of Cooling: AN	
8	Compatible with the output of 8 Nos. of String Solar Inverter of above specifications	