GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
O/o. The Executive Engineer(E), Mysuru
Central P.W.D., Mysuru 570011

INDEX

NIT No: 39/EE(E)/ Mysuru/2026-27 (Recall)

PAGE

Name of work: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

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I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

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***** To be filled in by EE *****

(Certified that this NIT contains Page numbers from 01 to 98 (Ninety Eight Pages only)

Executive Engineer (E),
CPWD, Mysore

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

PART - A

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

CENTRAL PUBLIC WORKS DEPARTMENT

PRESS NOTICE

NOTICE INVITING e –TENDER

The **Executive Engineer (E), CPWD, T. Narasipura Road, Siddarthnagar, Mysore-570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com) on** for and on behalf of President of India invites **online Percentage rate bids in two bid system** from approved and eligible contractors of CPWD enlisted in appropriate from approved and eligible contractors of appropriate class enlisted with CPWD Class-II & above and CPWD Enlisted Contractors of Class-III and below in SR Region enlistment consisting of SDG (Chennai), ADG (Kochi), ADG (Bengaluru) and ADG (Hyderabad) **/specialized agency/firm/bidders having experience in similar works** for the following work:

NIT No.: 39/EE(E)/ Mysuru/2026-27 (Recall)

Name of work:- SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore. Estimated cost: Rs. 3,00,100/-

Earnest Money: Rs. 6,002/- (*To be refunded after receipt of performance guarantee)*

Period of Completion	**:**	**45 Days**
Pre-Bid meeting (Time and Date& Venue)	**:**	**-**
Last Time & Date of submission of Bids	**:**	***Up to* 17:30 pm on 16.11.2026**
Time & Date of opening of eligibility bids	**:**	**18:00pm on 16.11.2026**
Time & Date of opening of Price bid	**:**	**shall be communicated to qualified technical bidders at later date**

The Bid forms and other details can be obtained from the website https://etender.cpwd.gov.in orhttps://eauction.cpwd.gov.in

***** To be filled by the Executive Engineer*****

Executive Engineer (E),

CPWD, Mysore

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

NOTICE INVITING TENDER

N.I.T.No.: 39/EE(E)/ Mysuru/2026-27 (Recall)

Name of work:	**SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**
Composite Estimated Cost	**Rs. 3,00,100/-**
Earnest Money	**Rs. 6,002/-** ***(To be refunded after receipt of performance guarantee*****)**
Performance Guarantee (PG)	**(a) The Successful bidder shall be required to submit a Performance Guarantee of 5% (five percent) of tendered value or estimated cost put to tender (ECPT) whichever is higher.** **(b) Where the tendered amount is less than Eighty Percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between Eighty Percent (80%) of the ECPT and the tendered amount.**
Security Deposit	**2.5% of Tendered Cost**
Time Allowed	**45 Days**

The Bid forms and other details can be obtained from the website https://etender.cpwd.gov.in **or *https://eauction.cpwd.gov.in***

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-BIDING FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE

The **Executive Engineer (E), CPWD, T. Narasipura Road, Siddarthnagar, Mysore-570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com) on** for and on behalf of President of India invites **online Percentage rate bids in two bid system** from approved and eligible contractors of CPWD enlisted in appropriate from approved and eligible contractors of appropriate class enlisted with CPWD Class-II & above and CPWD Enlisted Contractors of Class-III and below in SR Region enlistment consisting of SDG (Chennai), ADG (Kochi), ADG (Bengaluru) and ADG (Hyderabad) **/specialized agency/firm/bidders having experience in similar works** for the following work:

S.No	Description	Particulars
1	NIT No.	**39/EE(E)/ Mysuru/2026-27 (Recall)**
2	Name of work & Location	**SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**
3	Estimated Cost put to Tender	**Rs. 3,00,100/-**
4	Earnest Money	**Rs. 6,002/- *(To be refunded after receipt of performance guarantee*)**
5	Period of Completion	**45 (Forty Five) Days**
6	Pre-Bid meeting (Time and Date& Venue)	**-**
7	Last date & time of online submission of bids.	**Up to *17:30 pm on 16.11.2026***
8	Time and date of opening of eligibility cum technical bid documents	***18:00pm on 16.11.2026***
9	Time & Date of opening of Price bid	**shall be communicated to qualified technical bidders at later date**

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

INSTRUCTIONS FOR BIDDERS

Name of work: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

A. The contractor submitting the tender should read the schedule of quantities, additional conditions, additional specifications, particular specifications and other terms and special conditions given in the NIT. The Bidder should also read the **General Conditions of Contract 2023 for Construction Works with amendments/ modification up to the last date of submission of tender,** which is/will be available as Government of India Publications; however, provisions included in the tender document shall prevail over the provisions contained in the standard form. The set of drawings and NIT shall be available with The **Executive Engineer (E), T. Narasipura Road, Siddarthanagar, Mysore-570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com).** The contractor should also visit the site of work and get acquainted himself with the site conditions before tendering. The following conditions, which already form part of the tender conditions, are specially brought to his notice for compliance while filling the tender. They are requested to comply following instructions.

B. Contractors who fulfill the following requirement shall be eligible to apply. Joint ventures are not accepted.

a) Eligibility Criteria for work Experience
Should have satisfactorily completed the following works last seven years ending previous day of last date of the month previous to the one in which tenders are invited.

Three similar completed works each costing not less than 40% of estimated cost put to tender

or

Two similar completed works each costing not less than 60 % of estimated cost put to tender

or

One similar completed work costing not less than 80% of estimated cost put to tender

Similar work shall mean "SITC of Solar PV System, with or without allied works"

Components of work executed other than those included in definition of similar work shall be deducted while calculating cost of similar work. Bidder shall submit abstract of cost of work in support of this. **It will be the responsibility of the bidder to clearly get certified the details of work by the certificate issuing authority (not below the rank of Executive Engineer)**.

b. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the last date of the completion to previous to the one in which tenders are invited.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

c. While considering any similar work executed by applicant firm under joint venture, the experience of the applicant firm in that work shall be restricted to its share/responsibilities as reflected in the Memorandum of Understanding (MoU), signed between the parties, while forming joint venture for that work, attested copy of which shall be submitted along with the bid.

d. Complete set of TDS certificate (Form 16 A & 26 AS) shall be uploaded in case the similar work is executed for a private body, which shall form basis for establishing the completion cost of work executed.

C. Should have had average **Annual Financial Turn Over (gross) of 30% of estimated cost** put to tender on construction works during the immediate as last five consecutive financial years ending on 31st March 2026. This should be duly audited by Chartered Accountants. Year in which no turnover is shown would also be considered for working out the average. Scanned copy of certificate from Chartered Accountant to be uploaded. Further details, if required may be asked from the bidder after opening of Technical cum Eligibility bids

The multiplication factor of 7%per annum simple interest is applicable on the Annual Financial Turnover figures.

D. Should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets, duly certified and audited by the chartered Accountant for years ending 31st March 2026. (The balance sheet in case of Pvt./ Public Ltd. Company means its standalone finance statement and consolidated financial statement both).(Scanned copy of certificate from CA to be uploaded).

E. The bidder should have a **solvency of minimum 40% of estimated cost** put to tender certified by his Bankers. (Scanned copy of original Bank Solvency issued by the Bank in Form-B to be uploaded).

(Solvency not required if applicant is a class I (Composite) registered contractor of CPWD and estimated cost is up to Rs. 40 Crore)

Or

F. The bidder should submit a **Net-worth certificate of minimum 10% of estimated cost** put to tender issued by a certified Chartered Accountant. (Scanned copy of original Net worth Certificate issued by Certified Chartered Accountant in FormB-1to be uploaded).

G. Tenders with any condition including that of conditional rebates shall be rejected. Rates of such tenders shall not be entered in the tender opening register at the time of opening of tender.

H. The successful Bidder shall be required to submit a Performance Guarantee of 5% (five Percent) of the tendered amount within 7 days of issue of letter of intent. This period can be further extended by Engineer-in-Charge up to a maximum period of 7 more days on the written request

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

of the contractor subject to payment of late fee @ 0.1% per day of Performance Guarantee amount.

I. GST as applicable and Labour Cess @ 1% shall be borne by the contractor himself. The contractor shall quote his rates considering all such taxes.

J. It will be obligatory on the part of the Bidder to tender for and sign the tender documents for all the component parts. The department reserves right to accept tender in full or in part. The bidder has no right to claim any compensation for the acceptance of part tender by the department.

K. All materials and systems used in the project are intended to maximize energy efficiency for operation of Project throughout service life (substantial completion to ultimate disposition – reuse, recycling, or demolition) with an emphasis on top quality. Materials and systems are to maximize environmentally benign construction techniques, including construction waste recycle, reusable delivery packaging, and reusability of selected materials. All vendors / contractors must adhere to best practices related to Green Buildings. Nothing extra on this account shall be payable.

L. The Bid document consisting of plans, specifications, schedule of quantities 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 in the office of The **Executive Engineer (E), T. Narasipura Road, Siddarthanagar, Mysore-570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com)**, during the office hours on all days except on Second Saturday, Sundays & Public holidays and also can be downloaded free of cost from website **https://etender.cpwd.gov.in or https://eauction.cpwd.gov.in**

M. Applicants are advised to keep visiting the above-mentioned websites from time to time (till the deadline for Tender submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications complete in all respect including updates thereof, if any. An incomplete application may be liable for rejection.

N. Those contractors not registered on the website mentioned above, are required to get registered themselves beforehand. If needed they can be imparted training on online tendering process as per details available on the website. The intending Bidders must have valid Class-III digital signature to submit the Tender.

O. The intending Bidders has to fill all the details such as Banker's name, number, amount & date of Earnest Money in the form of ~~Treasury Challan or~~ Demand Draft or ~~Pay order or~~ Banker`s

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

Cheque or ~~Deposit at Call Receipt or~~ Fixed Deposit Receipt or Insurance surety bond or Bank Guarantee of a commercial bank (Drawn in favour of the ***Executive Engineer (Civil), Mysore Central Division, C.P.W.D., Mysore, Payable at Mysore*** shall be scanned and uploaded to the e-tendering website within the period of Bid submission. In case of submission of EMD in the form of FDR, it is in the tenderer's own interest to keep the FDR valid as long as it is required. A part of earnest money is acceptable in the form of bank guarantee also. In such case, 50% of earnest money or Rs 20 Lakhs, whichever is less, will have to be deposited in shape prescribed above, and balance in shape of Bank Guarantee issued by a Commercial Bank valid for a period of 180 Days or more which is to be scanned and uploaded by the intending Bidders.

P. 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 receiving Executive Engineer (including NIT issuing Executive Engineer) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (as given in CPWD-6) uploaded by tender inviting Executive Engineer in the NIT. This receipt shall also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.

Q. Contractor shall not divert any advance payments or part thereof for any other purpose other than needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. mobilization, secured advance against materials brought at site, secured advance against plant & machinery and / or for work done during interim stages, etc.) are required to be re-invested in the contracted work to ensure advance availability of resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.

R. The intending Bidders must read the terms and conditions of CPWD-6 carefully. He should only submit his Tender if he considers himself eligible and he is in possession of all the documents required.

S. Information and instructions for Bidders posted on website shall form part of Tender Document.

T. If any information furnished by the applicant is found incorrect at a later stage, he shall be liable to be debarred from tendering/taking up of works in CPWD. The department reserves the right to verify the particulars furnished by the applicant independently.

U. Contractor can upload documents in the form of JPG format and PDF format.

V. Certificate of Financial Turn Over: At the time of submission of bid contractor may upload Affidavit/Certificate from CA mentioning Financial Turnover of last 3 years or for the period as

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

W. Contractor must ensure to quote Percentage rate (s) of each sub works, in case, if a bidder does not quote any percentage above/below on the total amount of the tender or any section/subhead in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest.

X. Contractor must ensure to quote rate in the prescribed 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).However, if a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

Y. After ascertaining the eligibility of participated bidders, the technical bids shall be opened first on due date and time as mentioned above in case of two bid system. In single bid system, the financial bids will be opened only after ascertaining the eligibility of participated contractors.

Z. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.

*** To be filled by the Executive Engineer***

Executive Engineer (E),
CPWD, Mysore.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

A. <u>List of Documents to be submitted by the Bidders in various forms to be scanned and uploaded in JPG format or PDF format within the period of Tender submission:</u>**

1.	Insurance surety bond /Account payee Demand draft/ Fixed Deposit Receipt / Banker's Cheque/ Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks drawn in favor of **Executive Engineer (C), CPWD, Mysore against EMD.**
2.	Copy of receipt for deposition of Original EMD issued from the division office of any Executive Engineer**, Central PWD, including NIT issuing EE along with Office Stamp in *Annexure-I***
3.	Enlistment Order of the Contractor in Composite Category and valid on the date of opening of tender. Enlistment order issued by enlistment authority, with validity duly extended, in favor of the CPWD contractor shall only be considered. *(for only CPWD contractors)*
4.	**Certificate of Registration for GST** GST Registration Certificate if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents. "if work is awarded to me, I/we shall obtain GST registration Certificate as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by CPWD or GST department in this regard." - ***Undertaking Performa as prescribed in Annexure-II***
5.	**Undertaking for site inspection [Intending bidders must upload undertaking that they have inspected and examined the site and its surrounding before submitting their bids as stated in *Annexure-III***
6.	Notarized Affidavit of **'Non-black listing'** and **"Non-Suspension of Business"** by CPWD/State/Central departments/PSU/Autonomous bodies - Form 'A' in ***Annexure-IV***
7.	Affidavit as per CPWD – 6 undertaking for works not executed through another contractor on back-to-back basis. ***Annexure-V***.
8.	Letter of Transmittal – As prescribed in ***Annexure-VI***.

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

9.	Form 'A' Financial Information ***as prescribed in*** Page No. 23
10.	Form 'B' Bank solvency certificate as ***prescribed in*** Page No. 24
11.	Form "B1" Form For Certificate Of Net Worth From Chartered Accountant ***as prescribed in*** Page No. 25
12.	Form "C" as ***prescribed in*** Page No. 26
13	Work experience certificate as per the criteria prescribed shall be issued by an authority not less than the rank of Executive Engineer. (***If private works are shown in support of eligibility, certified copy of the Tax Deducted at source Certificate (TDS) shall be submitted along with the Experience Certificate and the TDS amount shall tally with the actual amount of work done. Otherwise, the amount that tally with TDS shall only be considered for eligibility)***
14	The agency must upload the ERP training Certificate regarding successful completion of ERP training from ERP portal in the module of RFI. (for CPWD contractor)
15	Undertaking regarding ERP training in CPWD department as per **Annexure–VIII** (Enclosed below) (Specialized agency/firm/bidders having experience in similar works)
16	Any other Document as specified elsewhere in the press notice and NIT as mandatory.
(B)Document to be submitted after acceptance of Bid	
	Copy of applicable licenses/registration Certificates or 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 /~~ Associated Contractors, if any engaged by the contractor for the said work and Program Chart (Time and Progress)
	i) AFFIDAVIT - Form 'C' ***Annexure-VII*** **(Undertaking to keep the validity of the bank guarantee intact)**

****However, the successful L1 bidder has to submit the original hardcopy of the above uploaded documents to the Engineer-in-Charge for the purpose of verification within seven days.**

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

SCOPE AND BRIEF PARTICULARS OF THE WORK

General:

- It is proposed to Kitchen equipment's etc for hostels. i.e. **SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**
  Design and Scope: SITC of Roof Top Solar Photo Voltaic System

Detailed scope along with specifications have been given in the Schedule of Quantities enclosed.

Executive Engineer (E),

CPWD, Mysore,

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-I

FORMAT FOR RECEIPT OF ORIGINAL EMD

Receipt of deposition of Original EMD ***(Receipt No…… Dated……)***	
(1)	**Name of Work: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**
(2)	NIT No**: 39/EE(E)/ Mysuru/2026-27 (Recall)**
(3)	Estimated Cost**: Rs. 3,00,100/-**
(4)	Amount of Earnest Money Deposit**: *Rs. 6,002/-* (in favour of Executive Engineer (C), CPWD, Mysore)**
(5)	Last date of Submission of Bid**: Up to *17:30 pm on 16.11.2026***
(* To be filled by NIT approving authority/EE at the time of issue of NIT and uploaded along with NIT)	
(1)	Name of the Contractor**#:**
(2)	Form of EMD**#:**
(3)	Amount of Earnest Money Deposit**#:**
(4)	Date of Submission of EMD**#:**
Signature, Name and Designation of EMD receiving Officer EE along with Office Stamp	
# To be filled by EMD receiving EE	

Note:

1. The Executive Engineer of all division of CPWD should receive the original EMD for tender of other division.
2. The Original EMD receiving Executive Engineer shall release the EMD after verification from the e-tendering portal website (etender.cpwd.gov.in) that the particular contractor is not L-1 tenderer and work is awarded.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-II

If the bidder has not obtained GST registration as applicable, then he shall scan and upload following under taking along with bid documents.

"lf work is awarded to me, I/we shall obtain GST registration Certificate as applicable, within one month from the date of receipt of award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by CPWD or GST department in this regard."

NOTE: Affidavit to be furnished in letter pad of the agency

Signature of Bidder(s) or an authorized Officer of the firm with stamp

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-III

DECLARATION ABOUT SITE INSPECTION

To,

Executive Engineer (E), Mysore,

CPWD, Mysore – 570011

Sub: **NIT No.: 39/EE(E)/ Mysuru/2026-27 (Recall)** for the work: **SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**

Dear Sir,

It is hereby declared that as per **CPWD–6 for e-Bidding, I**/ We the bidder inspected and examined the subject site and its surrounding and satisfy myself/ ourselves as to the nature of the ground and sub-soil (so far as is practicable),the forms and nature of the site./ ourselves before submitting the bid, the accommodation which may require and all necessary information as to risks, contingencies and other circumstances which may influence or affect our bid have been obtained. I/We the bidder shall have full knowledge of the site and no extra charge consequent upon any misunderstanding or otherwise shall be claimed in later date.

I /We bidder shall be responsible for arranging and maintaining at 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 bid by me/us implies that I / We have read this notice and all other contract documents and has made myself /ourselves aware of the scope and specifications of the work to be done and local conditions and other factors having a bearing on the execution of the work.

Yours faithfully

(Duly authorized signatory of the bidder)

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-IV

FORM 'A'

AFFIDAVIT

Notarized Affidavit of 'Non-black listing' and "Non Suspension of Business" by CPWD/State/Central Departments/ PSUs/Autonomous bodies

I/we undertake and confirm that our firm/partnership firm has neither been blacklisted nor been suspended for doing business by any state/Central Departments/PSUs/Autonomous bodies during the last 7 years of its operations. Further that, if such information comes to the notice of the department then I/we shall be debarred for bidding in CPWD in future forever. Also, if such information comes to the notice of department on any day before date of start of work, the Engineer-in-charge shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee **(Scanned copy of this notarized affidavit to be uploaded at the time of submission of bid).**

NOTE: Affidavit to be furnished on a 'Non-Judicial' stamp paper worth Rs.100/-

Signature of Bidder(s) or an authorized

Officer of the firm with stamp

Signature of Notary with seal

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-V

Affidavit as per CPWD – 6.

I / We undertake and confirm that eligible similar works(s) has not/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/Performance Guarantee. **(Scanned copy of this affidavit to be uploaded at the time of submission of bid)**

Signature of the Contractor ***:***

Name of Contractor **:**

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-VI

INFORMATION REGARDING ELIGIBILITY
LETTER OF TRANSMITTAL

From:

To,

Executive Engineer (E),
CPWD, Mysore – 570011.

Subject: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

Sir,

Having examined the details given in tender notice and bid document for the above work, I/we hereby submit the bid along with all required information and documents.

1. I/we hereby certify that all the statements made and information supplied by me are true and correct.
2. I/we have furnished all information and details necessary for bid and have no further pertinent information to supply.
3. I/we also authorize the Executive Engineer (E), CPWD, Mysore to approach individuals, employers, firms and corporation to verify our details, if required.
4. Certificate: It is certified that the information given by me/us in the bid are correct. It is also certified that I/we shall be liable to be debarred, disqualified/cancellation of enlistment in case any information furnished by me/us found to be incorrect.
5. Contact details of our authorized representative are as under:

   Name

   Mobile Number: Email id:

   Contact Address:

Signature(s) of Bidder(s)

Seal of bidder

Name of Bidder:

Contact Address:

Email Id of Bidder:

Mobile Number of Bidder(s):

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ANNEXURE-VII

AFFIDAVIT

Undertake to keep the validity of the bank guarantee intact

I/We have submitted a bank guarantee for the work _____(Name of work)Agreement No. _____Dated _____from _____(Name of the Bank with full address)to the Executive Engineer_____ with a view(Name of the Division)**to seek exemption from payment of performance guarantee in cash. This Bank guarantee expires on _____ I / We undertake to keep the validity of the bank guarantee intact by getting it extended from time to time at my / our own initiative upto a period of_____ months after the recorded date of completion of the work or as directed by the Engineer in charge.**

I / We also indemnify the Government against any losses arising out of no encasement of the bank guarantee if any.

(Deponent)

Signature of Contractor

Note: The affidavit is to be given by the Executants before a first-class Magistrate

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

ANNEXURE-VIII

UNDERTAKING REGARDING ERP Training in CPWD Department

(For Non-enlisted CPWD Contractors)

To
The Executive Engineer (E)
CPWD, Mysore.

Name of Work: **SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.**

NIT No. 39/EE(E)/ Mysuru/2026-27 (Recall)

Sir

Having examined the details given in the bid document for the above work, I/We hereby submit the following undertaking that

"If work is awarded to me, I/We shall obtain ERP (Enterprise Resource Planning) training from CPWD Regional Training Institutes, as applicable, within two months from the date of receipt of award letter and failure to do so, a recovery of Rs. 5,000/- per week shall be made from the R/A bill without giving any show cause notice in this regard''.

Signature of bidder or an
Authorized person of the firm with stamp
Date of submission

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

FORM 'A'

FINANCIAL INFORMATION

I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

Sl. No.	**Description**	**Financial Years**				
		2021-22	2022-23	2023-24	2024-25	2025-26
(i)	Gross Annual turnover on construction works					
(ii)	Profit / Loss (standalone finance statement and consolidated financial statement both) (After deduction of Taxes)					

Signature of Chartered Accountant with Seal

Signature of bidder(s)

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

FORM 'B'

FORM OF BANKERS SOLVENCY CERTIFICATE FROM A SCHEDULE BANK

(To be submitted separately for each sub-head as required)

This is to certify that to best of our knowledge and information that M/.s …… having marginally noted address, a customer of our bank are / is respectable and treated as good for any engagement up to a limit of

Rs……..

(Rupees……)

This certificate is issued without any guarantee or responsibility of the bank or any of the officers.

(Signature)

For the Bank

NOTE:-

(1) Bankers Certificate should be on letter head of the Bank and addressed to tendering authority.

(2) In case of partnership firm, Certificates should include names of all partners as recorded with the Bank.

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

FORM "B1"

FORM FOR CERTIFICATE OF NET WORTH FROM CHARTED ACCOUNTANT

"It is to certify that as per Audited Balance Sheet and Profit & Loss account during the financial year.....,the Net Worth of M/S…… (Name& registered address of Individual/Firm/Company), as on ……(the relevant date) is Rs……after considering all liabilities. It is further certified that Net Worth of the company has not eroded by more than 30 % in the last three years ending 31.03.2026

Unique Document Identification Number (UDIN) ……..

Signature of Chartered Accountant ……..

Name of Chartered Accountant ……..

Membership of ICAI ……..

Date and Seal

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

FORM 'C'

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

Name of the firm / contractor…….

Sl. No.	Name of work / project and location	Owner sponsoring organization	Cost of work in Crores of Rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ arbitration cases pending / in progress with details*	Name and /Address / telephone number of officer to whom reference may be made	Capacity & Staging height	Whether the work was done on back to back Yes/No
1	2	3	4	5	6	7	8	9	10	11

*indicate gross amount claimed and amount awarded by the Arbitration Tribunal.

SIGNATURE OF BIDDER(S)

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

Latest issued as per DG/CON/340 dtd: 20.10.2020,
File No. CSQ/CM/17(1)/2020 e-file No. 9085478

On Non judicial stamp paper of minimum Rs. 100

(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 number).....dated.....for.....(name of work)..... The Government has further agreed to accept irrevocable Bank Guarantee for Rs. ..... (Rupees.....only) in favor of Executive Engineer (C), CPWD, Mysuru 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 an 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 an irrevocable Bank Guarantee for Rs. ..... (Rupees .... only) in favor of Executive Engineer (C), CPWD, Mysuru valid upto .....(date)..... as **Performance Guarantee/security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of this agreement.

2. We, ... (indicate the name of the bank).....(herein after referred to as "the Bank") ....., hereby undertake to pay to 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 here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. 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)....., further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor 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 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 here under to

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor 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 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 or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor 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 at 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.
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…….. Only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date:

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 30 Days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

**ln paragraph 1, 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.

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

CPWD- 6 FOR e-TENDERING

GOVERNMENT OF INDIA

CENTRALPUBLICWORKS DEPARTMENT

The **Executive Engineer (E), CPWD, T. Narasipura Road, Siddarthanagar, Mysore-570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com)** on behalf of the President of India invites **online Percentage rate composite bids in two bid system** from approved and eligible contractors of CPWD enlisted in appropriate class/specialized agency/firm/bidders **having experience in similar works** for the following work

SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

The work is **Estimated cost: Rs. 3,00,100/-** This estimate, however, is given merely as a rough guide.

1. The enlistment of the contractors should be **valid on the last date of submission of bids OR the** Intending bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: -

1.1 In case the last date of submission of bids is extended, the enlistment of contractor should be valid upto the extended date of submission of bids.

AA. Contractors who fulfill the following requirement shall be eligible to apply. Joint ventures are not accepted.

b) Eligibility Criteria for work Experience

Should have satisfactorily completed the following works last seven years ending previous day of last date of the month previous to the one in which tenders are invited.

Three similar completed works each costing not less than 40% of estimated cost put to tender

or

Two similar completed works each costing not less than 60 % of estimated cost put to tender *or*

One similar completed work costing not less than 80% of estimated cost put to tender

Similar work shall mean "SITC of solar pv system with or with out allied services."

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Components of work executed other than those included in definition of similar work shall be deducted while calculating cost of similar work. Bidder shall submit abstract of cost of work in support of this.

2. The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids. For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

3. Agreement shall be drawn with the successful Bidders on prescribed **Form No. CPWD7** which is available as a Govt. of India Publication and also available on website **https://etender.cpwd.gov.in or https://eauction.cpwd.gov.in.**Bidder shall quote his percentage rate(s) as per various terms and conditions of the said form which will form part of the agreement.

4.The time allowed for carrying out the work will be **45 Days** 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 Bid documents.

5. (i)The site for the work is available and provided by the client.

~~***(ii)The architectural drawings for the work is available.***~~

The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms & conditions of the contract to be complied with and other necessary documents can be seen on website **https://etender.cpwd.gov.in or https://eauction.cpwd.gov.in at free of cost.**

Bidders are advised to keep visiting the above-mentioned web-sites from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications complete in all respect including updates thereof, if any. An incomplete application may be liable for rejection.

6. The standard publications like General Conditions of Contract, Applicable Delhi Schedule of Rates for Civil and Electrical, Applicable Specifications for Civil and Electrical works and Applicable Delhi Analysis of Rates for civil and electrical with amendments /correction slips up to the last date of submission of Bids can be seen free of cost from **website www.cpwd.gov.in.**

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

7. 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 Bid as notified.

8.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 Bid as notified.

9. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.

10. **Earnest Money of *Rs. 6,002/-* can be paid in the form of Insurance surety bond or Demand Draft or Banker`s Cheque or Fixed Deposit Receipt of a commercial bank (drawn in favour of *Executive Engineer (Civil), Mysore Central Division, C.P.W.D., Mysore,* Payable at Mysore shall be scanned and uploaded to the e-tendering website within the period of Bid submission.**

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 Lakhs, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any commercial bank having validity for **180 Days** or more from the last date of submission of Bids which is to be scanned and uploaded by the intending Bidders.

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 receiving Executive Engineer (including NIT issuing Executive Engineer) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (given below) as uploaded by tender inviting Executive Engineer in the NIT. This receipt shall also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.

11. Copy of Enlistment Order and other documents as specified in the press notice 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 press notice shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority.

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

13. The contractors registered prior to 01.04.2015 on e-tendering portal of CPWD shall have to deposit tender processing fee at existing rates, or they have option to switch over to the new

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

registration system without tender processing fee any time.

The bid submitted shall be opened at *18:00pm on 16.11.2026*

The Bid submitted shall become invalid if:

(i) The Bidder is found ineligible.

(ii) The bidder does not deposit original EMD with division office of any Executive Engineer, CPWD.

(iii) The bidder does not upload all the documents (including GST registration) as stipulated in the bid documents including the copy of receipt for deposition of original EMD.

(iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and the certified hard copies as submitted physically by the lowest tender in the office of tender opening authority.

(v) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/subhead in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest bidder.

15. The contractor whose bid is accepted will be required to furnish **Performance Guarantee of 05% (Five Percent)** of the Bid amount within the period specified in **Schedule F.** This guarantee shall be in the form of cash (in case guarantee amount is less than Rs.10,000/-) or ~~Deposit at Call Receipt of any commercial bank~~/Insurance surety bond/Banker's cheque of any commercial bank/ Demand Draft of any commercial bank/ ~~Pay order of any Commercial Bank of any commercial bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities~~ or Fixed Deposit Receipts or Bank Guarantee of any Commercial 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 department will be at liberty to suspend the agency/contractor for one year and shall not be eligible to bid for CPWD tenders from date of issue of suspension order.

16. **The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or 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 Associate sub-contractors, if any engaged by the contractor for the said work and Program Chart (Time and Progress) within the period specified in schedule F.**

17. Intending Bidders 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 bidder shall be deemed to have full knowledge of the

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

site whether he inspects it or not and no extra charge consequent upon any misunderstanding or otherwise shall be allowed. The bidder 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 bidder 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.

18. 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 bidder shall be summarily rejected.

19. Canvassing whether directly or indirectly, in connection with Bidder is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

20. 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 Bidders shall be bound to perform the same at the rate quoted.

21. The contractor shall not be permitted to bid for works in the CPWD Zone 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 Chief Engineer/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 Gazetted 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.

22. No Engineer of Gazetted 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 aforesaid before submission of the bid or engagement in the contractor's service.

23. The Bid for the works shall remain open for acceptance for a period of Ninety(90) Days from the date of opening Bids. If any tenderer withdraws his tenders or makes any modifications in the terms & condition of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without any prejudice to any other right or remedy, be at liberty to forfeit 50% of the said

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

Earnest Money absolutely irrespective of letter of acceptance of the work is issued or not. If any tenderer withdraws his tenders or makes any modifications in the terms & condition of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bid, then the Government shall without any prejudice to any other right or remedy, be at liberty to forfeit 100% of the said Earnest Money absolutely irrespective of letter of acceptance of the work is issued or not. (ii) Further, in case of forfeiture of EMD in any one manner as above, the Bidders shall not be allowed to participate in the rebidding process of the same work.

24. This notice inviting Bid shall form a part of the contract document. The successful Bidders/contractor, on acceptance of his Bid by the Accepting Authority shall within 07 days from the stipulated date of start of the work, sign the contract consisting of: -

a) The Notice Inviting Bid, all the documents including Special Conditions, General Specifications/ Particular Specifications and drawings, if any, forming part of the Bid as uploaded at the time of invitation of Bid 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 7 (GCC for CPWD Construction Works 2023) with amendments up to the last date of submission of Tender.

25. Percentage Rate quoted shall include all GST, royalties, terminal taxes, Octroi duties, Central or Provincial Excise Tax, Sales Tax and any other taxes leviable under the state or Central Government rules and transit insurance, cartage and stacking at required places etc., The CPWD will not entertain any claim whatsoever in this respect.

26. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

27. ~~**For Composite Bids:**~~

~~27.1 The Executive Engineer in-charge of the Division of the major component will call bids for the composite work. The Earnest Money will be fixed with respect to the combined estimated cost put to bid for the composite bid.~~

27.2 The bid document will include following Four components:

Part A:- CPWD-6, CPWD Form- 7 Standard CPWD General Conditions of Contract for Construction works 2023 as modified up to the last date of submission of bid.

Part B:- Schedule A to F for the major component (Electrical) of the work, General / specific conditions/ Additional conditions /, specifications, Safety practices

Part C:- Specifications of the works

Part D: - Schedule of quantities (E& M components).

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

27.2.1 The bidders must associate himself/themselves with the agencies as per NIT conditions.

27.2.2 The eligible bidders shall quote percentage (rates) below/ above / at par ECPT for both major as well as minor component of the bid.

~~27.2.3 **After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE in charge of major component and has also to sign two or more copies of agreement depending upon number of EEs in charge of minor components. One such signed set of agreement shall be handed over to EE in - charge of minor component. EE of major component (i.e., CIVIL works) will operate the agreement.**~~

~~27.2.4 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.~~

~~27.2.5 Security Deposit will be worked out separately for each component corresponding to the bid amount of the respective component of works.~~

~~**27.2.6 The main contractor has to associate agencies for specialized components(s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-Charge of relevant component(s) within prescribed time. Name of the agency to be associated shall be approved by Engineer-in-Charge of relevant component(s).**~~

~~27.2.7 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-Charge of relevant specialized components(s). The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-Charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.~~

~~27.2.8 The main contractor has to enter into MoU with agency(s) associated by him for execution of minor component(s). Copy of such MoU/agreement shall be submitted to EE-in-charge of each minor component as well as to EE in charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU/agreement with the new contractor associated by him.~~

~~27.2.9 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-charge of the discipline of minor component directly to the main bidder.~~

~~27.2.10 The composite work shall be treated as complete when all the components~~

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

~~of the work are complete. The completion certificate of the composite work shall be recorded by Executive Engineers of both minor component and major component and by the Technical Sanctioning Authority of this composite work or any other authority notified by Directorate from time to time.~~

~~27.2.11 Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.~~

27.2.12 It will be obligatory on the part of the bidder to sign the bid document for all components before the first payment is released.

28. Criteria of eligibility for submission of bid documents - Joint ventures and Special Purpose Vehicles are not accepted.

29. The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer(E)/ Assistant Engineer(E)(P) (Phone no *0821-2954104, e- mail Id *mycedcpwd@gmail.com) or ERP helpline no. 18001803286 or e-mail ld cpwd.support@techmahindra.com. The e- tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

EXECUTIVE ENGINEER(E)
CPWD,MYSORE.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

GOVERNMENT OF INDIA

CENTRAL PUBLIC WORKS DEPARTMENT

STATE: Karnataka DIVISION- EE (E), Mysore

CPWD-7

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

Tender for the work of: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

To be submitted / Uploaded up to *17:30 pm on 16.11.2026* & uploaded at https://etender.cpwd.gov.in or https://eauction.cpwd.gov.in

To be opened in the presence of Bidders who may be present at *18:00pm on 16.11.2026* , in the office of the The **Executive Engineer (E), Mysore, CPWD, Mysore – 570011. Phone No. 0821-2954104, Email id:(mycedcpwd@gmail.com)**

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

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, General Conditions of Contract of 2023 for construction works with amendments up to the last date of submission of tenders, clauses of contract, Special conditions, Schedule of Rates & 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 General Conditions of contract of 2023 for construction work with amendments up to the last date of submission of tenders 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 **Ninety (90)days** from the last date for receipt of bids and not to make any modification in its terms and conditions.

A sum of Rs**.** ***Rs. 6,002/-*** will be deposited by me/us with EE calling the tenders in Insurance surety bond/banker's cheque/fixed deposit receipt of commercial bank/demand draft of a commercial bank/ bank guarantee issued by a commercial 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 performance guarantee absolutely, the said performance guarantee shall be a guarantee 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.

****To be filled in by EE****

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Further, I/We agree that in case of forfeiture of Earnest Money or 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 cancel the agreement and 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: **

*****To be filled in by the contractor***

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and 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 the President of India

Signature ……*……

Designation ……*……

Dated:*……..

To be filled in by EE

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

PART-B

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

PROFORMA OF SCHEDULES

(Separate Performa for ~~Civil~~, Electrical & ~~Hort.~~ Works in case of Composite Tenders)

(Operative Schedule to be supplied separately to each intending Bidder)

SCHEDULE 'A':

Schedule of quantities attached from Page ***96-100 for*** **Electrical works**

SCHEDULE 'A'

Schedule for quoting combined rates for all works: - As per schedule of quantities attached-Part-D

SCHEDULE 'B'

Schedule of materials to be issued to the contractor:

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 ----------				

SCHEDULE 'C'

Tools and plants to be hired to the contractor:

S. No.	Description	Hire charges per day	Place of issue
1	2	3	4
----------NIL ----------			

SCHEDULE 'D'

Extra schedule for specific requirements / document for the work, if any:	As attached intender form

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Name of work:

SCHEDULE 'E'

Reference to General Conditions of Contract:	**General Conditions of contract for CPWD-2023 for construction works (with all amendments up to last date receipt of tender including extension, if any)**
Estimated cost of work:	
Electrical Items of Work	**Rs. 3,00,100/-**
Earnest money:	***Rs. 6,002/-*** ***(To be refunded after receipt of performance guarantee)***
Performance Guarantee:	(a) 5% (five percent) of tendered value or estimated cost put to tender (ECPT) (whichever is higher). (b) Where the tendered amount is less than Eighty Percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between Eighty Percent (80%) of the ECPT and the tendered amount.
Security deposit:	2.5% of the tendered value of the work

GENERAL RULES &DIRECTIONS:

Officer inviting tender:	*Executive Engineer (E) (Mysore), CPWD, Mysore.*
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*
~~* To be filled in by Executive Engineer~~	

SCHEDULE 'F'

2(vi)	**Engineer-in–Charge** For Electrical Items of Work	*Executive Engineer (E)(Mysore),* *CPWD, Mysore.* or his successor thereof

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

2(viii)	Accepting Authority	*Executive Engineer (E)(Mysore), CPWD, Mysore.* *or successor thereof*
2(x)	Percentage on cost of materials and labour to cover all overheads and profits	*15%*
2(x)(a)	**Standard Schedule of Rates:** Electrical Items of Work	DSR (Electrical) 2025 with correction slips up to **last date of submission of tender including extension, if any**.
2(xi)	Department	*Central Public Works Department*
9(ii)	Standard CPWD contract Form:	**General Conditions of contract for CPWD-2023 & CPWD -7 (with all amendments up to last date receipt of tender including extension, if any)**

Clause 1	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 from the date of issue of letter of acceptance.		*7 days*
	Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i)above		*3 days*
Clause2	Authority for fixing Compensation under Clause 2		*SE, Mysore, CPWD or successor thereof*
Clause 5	Number of days from the date of issue of letter of acceptance for reckoning date of start	10 days	
Clause 5	Description of milestone(physical)	Time allowed from date of start	Amount to be withheld for non-achievement of milestone
	As per below table		

Clause 5.2. Nature of Hindrance Register: Through ERP module Electronic – online system

Clause 5.4

The form of application by the contractor for seeking rescheduling of milestones or seeking extension of time	: Annexure- IX & X

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Milestone(s) as per table given below: -

Name of Work:

SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

Mile stone Sl. No.	Description of Milestone	Time allowed in days (From date of start)	Amount to be withheld in case of non-achievement of mile stone (% of Tender amount)
1	Submission of shop drawings and TDS	15 days	1%
2	Supply of Items as per specifications and drawings approved by Engineer-in-charge.	30 Days	2%
3	Installation of Items as per direction of Engineer-in-charge.	35 days	1%
4	Testing and commissioning and handing over of the works in all respect to the Client.	45 Days	1%

Note: - The withheld amount shall be released, if and when subsequent milestone is achieved within respective time specified. The main contractor will ensure that electrical components of the work are executed in time without giving any chance for slippage of milestone an account of delay in execution of associated electrical works by him. However, in case milestones are not achieved by the contractor for the work, the amount shown against milestone shall be withheld by the Engineer-in-charge of the respective components. And no interest will be paid on the amount withhold.

Authority to decide:

(i) Authority to convey the decision of shifting of milestone and extension of time	Executive Engineer (E), CPWD, Mysore or his successor thereof
(ii) Rescheduling of milestones	SE, Mysore CPWD, or his success thereof
(iii) Shifting of date of start in case of delay in handing over of site	SE, Mysore CPWD, or his success thereof

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Clause 6

Clause applicable - (6) - **EMB through CPWD ERP Portal**

Clause 7	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	*3 Lakhs*
Clause 7A	Whether Clause 7A shall be applicable	*Yes, Applicable.* *No Running Account Bill shall be paid for the work till the applicable labour licences, registration from EPFO, ESIC and BOCW Welfare Board, (whatever applicable) are submitted by the contractor to the Engineer-in-charge.*
Clause 7B	Whether Clause 7B shall be applicable	*Yes*
Clause 8	***Authority to issue Completion certificate.***	*EE (E) Mysore / Successor.*

Clause 10A	List of testing equipment's to be provided by the contractor at site lab	**As per direction of Executive Engineer (Elect.)**
Clause 10 B (ii)	Whether clause 10-B (ii) shall be applicable.	*Not applicable*
Clause 10 C	Component of Labour expressed as percent of value of work	*10 %*

Clause 10 CC	Whether Clause 10CC shall be applicable	*Not applicable*
Clause 11	Specification to be followed for execution of work - For Electrical Items of Work	*Technical specifications for specialized items as mentioned in the NIT and CPWD General Specifications for Electrical Works Part I Internal –2023* amended up to date.

All above Specifications shall be applicable with correction slips up to the last date of submission / uploading of bid.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Clause 12		
12.2 C	Deviation limit beyond which clauses 12.2 C shall apply for building work	100 %
12.4	(i) Deviation limit beyond which clauses 12.2 c shall apply for foundation work(except items mentioned in earth work subhead in DSR and related items)	NIL
	(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	NIL

Clause 16	Competent Authority for Deciding reduced rates - For Electrical Items of Work	SE Mysore CPWD Or successor thereof
Clause 18	List of mandatory machinery, tools& plants to be deployed by the contractor at site	As mentioned in page No.138

Clause 19: Modified provision.

The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971. The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion.

Clause 19C, 19D,19G,19K …. Applicable.

Clause 19C authority to decide penalty for each default:	Executive Engineer (E), of respective discipline or any authority as decided by the CPWD Directorate.
Clause 19D authority to decide penalty for each default	
Clause 19G authority to decide penalty for each default	
Clause 19K authority to decide penalty for each default:	
Clause 19 (C)	
Penalty for each default	:Rs.1000/-for each default
Clause 19 (D)	
Penalty for each default	: Rs.2500/-for each default
Clause 19 (G)	
Penalty for each default	: Rs.2500/-for each default
Enhanced penalty per day for Continues default	Rs.5000/-

Clause 25

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Conciliator	ADG(B), CPWD, Bangalore or successor thereof
Arbitrator Appointing Authority	Superintending Engineer, CPWD, Mysore or his successor.
Place of arbitration	Bangalore or as decided by the Arbitration appointing authority

~~**Clause 32**~~		~~Requirement of Technical Representative(s) and Recovery Rate~~				
~~Minimum Qualification of Technical Representative~~	~~Discipline~~	~~Designation (Principal Technical/Technical representative~~	~~Minimum experience~~	~~number~~	~~Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 32 Per person~~	
					~~Figures (Rs. Per person)~~	~~Words (Rs. Per person)~~
~~(i) Graduate Engineer or Diploma Engineer~~	~~Electrical~~	~~Project Planning / quality/ Site/ Billing Engineer~~	~~2 Years or 5 years respectively~~	~~1~~	~~15,000/- per month per person~~	~~Fifteen Thousand per month per person~~

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause-41

The security deposit of the work shall be refunded if no labour complaint has been received from the labour officer till the due date of its payment. If a labour complaint is received during this period, the Engineer-in-charge shall, after issue of notice in this regard to the contractor, deduct the amount required to settle the complaint from his security deposit and refund the balance amount.

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

	Description of items	and words at which recovery shall be made from the contractor
I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

S. No		Excess beyond permissible variation	Less use beyond the permissible variation
NIL			

~~* To be filled in by Executive Engineer~~

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Annexure-IX

Form of Application by the Contractor for seeking Extension of Time

Name of Contractor :

Name of work as given in the agreement :

Agreement No. :

Estimated amount put tender :

Date of commencement of works as per agreement :

Period allowed for completion of work as per agreement :

7.Date of completion stipulated in agreement :

Period for which extension of time if has been given by :

authority in Schedule 'F "Previously

	EE's Letter No. and date	Extension granted	
		Months	Days
1st Extension			
2nd Extension			
(c) 3rdExtension			
Total extension previously given			

Reasons for which extension have been previously given

(copies of the previous applications should be attached) :

Period for which extension if applied :

Hindrances on account of which extension is applied for which

dates on which hindrances occurred and the period for which

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

these are likely to last (for causes under clause 5.2/ and 5.3) :

Serial No.

Nature of hindrance

Date of occurrence

Period for which it is likely to last

Period for which extension required for this particular hindrance

Overlapping period if any, with reference to item. (g) Net extension applied for

Remarks, if any.

Total period on account of hindrance mentioned above ……..Months…….Days

Extension of time required for extra work

Details of extra work and the amount involved:

Total value of extra work.

Proportionate period of extension of time based on estimated amount put to tender on account of extra work.

Total extension of time required for Sl.No: 11 & 12

Submitted to the Sub Divisional Officer……

Signature of Contractor

Dated

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Annexure-X

Form of Application of the Contractor for seeking Rescheduling of the Milestones

Name of Contractor :

Name of work as given in the agreement :

Agreement No. :

Estimated amount put tender :

Date of commencement of works as per agreement :

Period allowed for completion of work as per agreement :

Date of completion stipulated in agreement :

Rescheduling of milestones done previously :

Milestone No. Already Precommercial	EE's Letter No. and date	Rescheduling of Milestones Done	
		Original Date	Reschedule date
1stMilestone			
2ndMilestone			

Rescheduling of Milestone applied for

Milestone No.for which Rescheduling is applied	Original/Recommercial Date	Details and Period of Hindrances	Comments of Executive Engineer	Proposed Recommercial Date of
(A)1st Milestone				
(B)2nd Milestone				

Submitted to the Sub Divisional Officer

Signature of Contractor

Dated

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ADDITIONAL CONDITIONS OF CONTRACT & SPECIFICATIONS FOR E&M WORKS FOR DEVOLOPMENT OF SITE AND BULK SERVICES FOR: SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore.

(SH: - E&M Portion, Part-B).

1.0. **GENERAL AND COMMERCIAL CONDITIONS:**

1.1. This section covers the various commercial conditions applicable and to be read in connection with the conditions of contract of the standard form (CPWD-7 / 8) of the department (CPWD) forming part of the tender papers. In the event of any discrepancy between these two, the requirements of the former will be followed.

1.2. These additional conditions and additional specifications are applicable to all E&M works in general. For specific tenders some of the E&M services may not be a part of the particular tender. In such cases the conditions and specifications which are not related to the works or components thereof mentioned in the schedule of work shall not apply for that particular tender.

1.3. All the E & M works shall be carried out as per direction and to the entire satisfaction of the Engineer-in-charge.

1.4. Unless otherwise specified in the following conditions, the work shall, in general, be carried out as per following specifications:

a) CPWD General Specifications for Electrical Works – Part-I (Internal), 2013 amended up to date.

b) CPWD General Specifications for Electrical Works – Part-II (External), 1994 amended up to date.

~~c) CPWD *GENERAL SPECIFICATIONS for HEATING, VENTILATION & AIR-CONDITIONING (HVAC) WORKS (2017)*~~

~~d) CPWD General Specifications for Electrical Works – Part-IV (substation) 2013 amended up to date~~

~~e) CPWD General Specifications for Electrical Works: Part V (Wet Riser & Sprinkler system) 2020).~~

f) Relevant BIS specifications amended up to date.

g) Indian Electricity Act 2013 and Indian Electricity Rules 1956 amended up to date.

h) Local Fire Regulations applicable at the place of installation.

i) Relevant and applicable foreign standards and specifications amended up to date.

j) Any other relevant act or rules and local byelaws.

k) Commercial and additional conditions and specifications for E & M works for this tender.

1.5.1. The work shall be carried out by CPWD enlisted contractor of appropriate Class as per Composite category with valid Electrical license and supervisor license only and other criteria as per norms. In case the main contractor is not fulfilled the criteria, he should engage an suitable agency as associated contractor, for execution of this work. Name of electrical agency shall be given in consent letter Performa along with enlistment details of the agency

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

1.5.2. Executive Engineer (Elect.) shall be the Engineer-in-Charge as far as electrical works are concerned. It will be obligatory on part of the main contractor to sign the tender documents for the entire component. The main contractor has to enter in agreement (MOU) with the Contractor associated by him for execution of minor component. Copy of such agreement shall be submitted to EE/DDH of minor component as well as EE in charge of major component

1.5.3. Running payment for Electrical/Mechanical components shall be made by the EE (E) directly to the main Contractor. The main contractor shall make the payment to associated Contractor within 15 days of receipt of each running account payment

1.5.4. The main contractor shall be responsible for coordinating the activities of all works and will ensure progress of works as per laid down program.

1.5.5 Normally, there shall be no change in associated contractor for minor component work during the execution of the work. If at all, a change is necessitated, the same should be acceptable to the department and such acceptable contractor shall fulfill the conditions laid down for the selection of the associated contractor in the tender document.

1.6. If the specifications for any item or its component are not available in the CPWD specifications cited above, relevant BIS specification as amended up to date shall be followed, whether or not the specific reference of a particular BIS specification has been made in this specification / tender document.

1.7. Wherever any reference to any Indian Standard specification occurs in the document relating to this contract the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of opening of tenders.

1.8. All materials should conform to relevant BIS specifications wherever the same exists in absence of stipulation in this tender document.

1.9.1. Where manufacturers furnish specific instructions / recommendations relating to the materials used in this job and/or their installation, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases and shall be deemed to be included in the schedule of work whether they have been specifically mentioned or not.

1.9.2. Manufacturer's catalogue / literature on installation, testing, maintenance and troubleshooting of major equipment's shall be submitted to the department while handing over the installation.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

1.10. MATERIALS TO BE USED IN THE WORK:

1.10.1. All materials used in the work shall be new and of good quality, conforming to the relevant specifications as per good engineering practice.

1.10.2. All the materials proposed to be used in the work should be got approved from Engineer in Charge before use in work.

1.10.3. The materials to be supplied / provided by the contractor in execution of the work should be ISI marked, wherever applicable and of make as specified in the agreement. Where the make of any particular material is not specified in the contract document, the material shall be supplied as per makes desired by the engineer-in-charge.

1.10.4. It will be the responsibility of the contractor / bidder to ensure use of genuine materials in the work. The department reserves the right to get (any / all materials / components) inspected by the manufacturer or their authorized representatives at any stage of the execution of work. If any of the materials, equipment's supplied and used in work is found spurious at any stage, then the department reserves the right to ask the contractor to replace it by genuine one and make suitable recovery and / or withheld suitable amount till it is done, even if any payment against that material is already made.

1.10.5. The department may ask for any valid document like manufacturer's test certificate, document for purchase of the material, document for import / shipment of imported materials etc. as deemed fit by the engineer-in-charge to ascertain genuinity of material supplied by / used in the work by the contractor. The contractor shall remain bound to submit all such documents to the department failing which payment may not be made or if already paid may be recovered / withheld from subsequent running account payment.

1.10.6. Copies of all purchase documents for all equipment's, accessories, fittings, fixtures etc. which carry guarantee / warrantee shall be handed over to the department in suitable form so that proper guarantee of materials are available to the department.

1.10.7. All the equipment's and their components and all the materials to be used in the work shall be suitable for the environmental conditions at the location of the work.

1.10.8. The materials to be supplied in this work shall be scheduled in such a way that miles stones are achieved and no shortfall is there. At the same time materials should be brought at sight in phases in such a manner so that they are not brought much in advance at site and dumped in work site for long period before installation and guarantee / warrantee of the materials are available for full period as per tender conditions. If the materials / equipment's are supplied at site much before actual use in work, the department shall not remain bound to make payment

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

for such items of work involving the said materials / equipment's. The decision of the engineer in charge will be final and binding on all.

1.10.9. Dismantle materials, if any, should be returned to the department unless otherwise anything in contrary has been specifically stated in the tender document / BOQ.

1.11. RATES:

1.11.1. **Unless otherwise provided in the schedule of quantities of the work the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.**

1.11.2. **The rates for all items of work shall, unless clearly specified otherwise, include cost of all labours, materials and other inputs involved in the execution of the item irrespective of whether they have been specifically mentioned in the tender document or not.**

1.11.3. **This being an indivisible works contract, GST etc. are not payable separately. The rates tendered shall be firm and inclusive of all taxes, duties, cess and levies as applicable, and all charges for packing, forwarding, insurance, freight and delivery, installation, testing and commissioning at site, watch and ward etc. including temporary constructional storage, risks, over head charges, general liabilities / obligations and clearance from local bodies and State Fire Services, as applicable. Nothing extra shall be paid. However, fees payable to the local bodies / authorities for such clearance etc. shall be borne by the department.**

1.11.4. **In case the same item (s) appear more than once in the schedule of work / BOQ under the same sub head or among the different subhead of works, the lowest rate quoted for that item (s) shall be considered for the particular item (s) wherever appeared in any part of BOQ / Schedule of works for the purpose of tender evaluation although web generated e-price bid may incorporate different quoted rate for same item (s) as per the quoting pattern of the tenderer. The tendered amount thus worked out shall be final & shall be binding on the contractor. (Applicable for item rate tender).**

1.12. ACCIDENT:

1.12.1. **The department (CPWD) shall not have any responsibility or liability in case of any accident injury to the personnel to the contractor at work site or to the general public at the work site due to mishandling equipment's by the personnel of the contractor or any other similar reason. The responsibilities and liabilities for such accidents and incidents shall be borne in full by the contractor.**

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

1.13 AFTER SALES SERVICE:

1.13.1. The contractor shall ensure adequate and prompt after sales service in the form of maintenance personnel and spares as and when required with a view to minimize the break down period. Particular attention shall be given to ensure that all spares are easily available during the normal life of the installation.

1.14 REMOVAL OF SURPLUS MATERIALS AND TOOLS:

1.14.1. **After completion of work the agency shall remove his men, materials and debris etc. from site.**

1.15 QUALITY OF WORK AND WORKMANSHIP:

1.15.1. The contractor shall be entirely responsible and answerable for all the works done by him regarding quality, adherence to the laid down specifications, terms and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.

1.15.2. Clause 1.15 of CPWD General Specifications for Electrical Works, Part – IV, Substation 2013 shall be applicable

1.15.3. The materials having ISI mark shall have precedence over the one conforming to IS Specifications.

1.15.4. The contractor is advised to visit the site before quoting for his tender to apprise himself about the site environments and other conditions. Drawings and inventories can be seen in the office of the Engineer – in – charge.

1.16 SITE ORDER BOOK:

1.16.1. The contractor or his authorized representative shall sign the site order book and comply with the remarks entered their in by the representative of the department.

1.17 WATCH AND WARD:

1.17.1. The contractor will make his own storage of his own materials. The watch and ward of the materials and of the installations would be responsibility of contractor till the work is completed / handed over to the department. Nothing extra shall be paid to the contractor on this account.

1.17.2. Making payment to the contractor in any form against supply of materials / equipment's / components or execution thereof shall not absolve the contractor of his responsibility of watch and ward of the equipment's / materials etc. and their satisfactory functioning until the same is taken over by the department after successful installation, testing, commissioning and running in period.

1.17.3. No separate storage space will be provided to the contractor for storage of his materials and equipment's to be brought at site and used in execution. The available open site space may

however be used by the contractor for storage purposes in which case he may build up temporary store at available site space at his own cost.

1.18 VARIATION IN QUANTITY:

1.18.1. Quantities shown against each item of work or supply are tentative which may vary on either side (plus or minus). This variation shall, in general, be governed by clause no. 12 of the clauses of contract of CPWD form 7 / 8. The contractor should ensure from the Engineer-in-charge and from the site condition the actual quantity required / to be used / to be supplied before bringing the materials at site. In case the actual quantity of material required at the site is less than the stipulated quantity, the contractor cannot claim to supply entire quantity stipulated in the schedule of quantities of work (Schedule – A) as well as cannot demand for payment thereof. The contractor shall therefore, be very careful about the quantity of materials to be supplied / brought at site. The decision of the Engineer-in-charge in this regard shall be final and binding on the part of the contractor. Even if initial payment for supply of materials is made in any form for bringing material at site and if it is found at later stage that the actual requirement is less as per site requirement or as per decision of the Engineer-in-charge, the contractor shall have to take back the additional quantity brought / supplied at site and necessary adjustment shall be made from his next bill on this account. No claim in this regard shall be entertained.

1.19 NATURAL CALAMITY:

1.19.1. No payment will be made to the contractor for any damage caused by rain, snow fall, floods, dampness, fire, sun or any other natural cause whatsoever during the execution of work. The damage to the work due to above reason, if any, shall have to be made good by the contractor at his own cost and no claim on this account shall be entertained.

1.20. INSPECTION AND TESTING:

1.20.1. The Engineer-in-charge or his authorized representative may inspect any material at manufacturers' works and may witness routine tests as per relevant Indian Standard Specifications or other relevant specifications at manufacturers' works.

1.20.2. The contractor shall give in writing advance notice to the Engineer-in-charge and arrange for such inspection / presence for testing at manufacturers work. The TA/DA etc. of the departmental personnel who will be deputed to witness the tests etc. shall be borne by the Department.

1.20.3. The Engineer-in-charge or his authorized representatives shall have, at all the reasonable times, access to the contractor's premises or works or other works where manufacturing / fabrication shall be done and shall have the power, at all reasonable times, to inspect and examine the materials and workmanship during its manufacture or fabrication.

1.20.4. Inspection of imported materials at foreign works shall however not be carried out by the department. These materials shall be inspected and tested at site. Manufacturers' original test

certificates and document of import / shipment should be provided to the department along with the materials without which no payment should be made to the contractor.

1.20.5. The contractor shall arrange for all the materials and labour required in connection with inspection of equipment or for any testing to be carried out at his works / manufacturers' works or at site of installation. Notice of such inspection / presence for testing shall be given by the contractor to the Engineer-in-charge at least fifteen days in advance.

1.20.6. Notwithstanding approval for such tests / inspection of equipment's / components by the Engineer-in-charge or his authorized representative, the contractor shall be required to perform site tests as desired by the Engineer-in-charge and prove the correctness of ratings and performance of equipment's / components and materials supplied and / or installed by him as per contract specifications and conditions at his own cost.

1.20.7. The Engineer-in-charge reserves the right to reject any equipment / machinery / material should it, on tests after installation, be found not to comply with contract specifications or its performance is not satisfactory.

1.20.8. Final inspection and testing will be done by the engineer-in-charge or his representative as per details to be indicated by the engineer-in-charge.

1.20.9. It shall be the responsibility of the contractor to get the installation inspected and passed by the local authorities concerned, as may be required by the local bye laws. The contractor will extend all help including test facilities to the representatives of the local bodies. In case the contractor fails to make desired facilities available during inspection, the department reserves the right to provide the same at the risk and cost of the contractor. The observation of the local authorities will be promptly attended by the contractor. The installation will be accepted by the department only after receiving clearance from the local bodies / fire authorities. The inspection charges leviable by the local / statutory authorities for the inspection shall however, be borne by the department.

1.21. COMPLETION DRAWING AND MANUAL :

1.21.1. In addition to the mode and form of submission of completion drawings and manuals as stipulated in the relevant CPWD Specifications for various sub-heads of E&M works, the contractor shall also submit soft copy of the completion drawings in CD / DVD.

1.22. POWER SUPPLY AND WATER SUPPLY:

1.22.1. No Power & Water Supply shall be provided by the department for the purpose of execution of the E&M work, except for testing and commissioning of installations. The contractor shall make his own arrangement in this regard. The power supply for testing and commissioning will be given at one point inside the premises and the contractor shall have to make arrangement for required cabling work and switch gears for extension of the power to the required location for testing. This will be applicable to all sub-heads of E&M works.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

1.23 WORKS TO BE DONE BY THE CONTRACTOR:

1.23.1. Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost – whether specifically indicated in the schedule of quantity / work or not:

a. Foundations for equipment's / structures / fuel tank / pumps including vibration isolation spring / pads.

b. All minor building works necessary for installation of equipment's such as making of openings in walls / floors, either of RCC or brick masonry, foundation trench for fuel line and cable, making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc. as required.

c. Dismantling of brick wall, if any, for inserting / positioning / placement of equipment's, Control panel / Diesel Tanks or for taking ducting / cable tray / pipes and rebuilding / making good the same to its original position / finish.

d. Making good all damages caused to the structure during installation and restoring the same to their original finish.

e. Supply and installation of all necessary angle / channel / flat iron supports and brackets etc. for installation of the substation equipment's, D.G. Sets / Diesel Tanks / Exhaust Piping / Water and fuel piping / Cabling / electric Panels / bus-trunking / pumps / air-conditioning ducts / air-conditioning equipment's and their sub-assemblies / accessories on floor / wall / Shaft / terrace and at other places, as may be necessary including their installations in position.

f. Responsibility to ensure safety of all materials against pilferage and damage till the installation is handed over to the department.

g. All scaffolding as may be necessary for installation of Exhaust piping / Cabling / Electric Panels / exhaust pipe / wet riser and sprinkler pipes / ducts and all other equipment's and their sub-assemblies / accessories on floor / wall / Shaft / terrace and at other places during erection work and subsequent removal.

h. Painting of all exposed metal surfaces of equipment's and components with appropriate / approved colour as required and as desired by the Engineer – in - charge.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

i. All electrical works including cables / wires, earthing etc as specified in Schedule of work.

j. 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.

k. Closing of the cable entry points in sub-station/electrical panel rooms etc wherever applicable against seepage of water rodents etc.

l. Approval / clearance of the complete installation shall be obtained by the contractor from CPCB / State Pollution Control Board / Local Bodies / Central Electricity Authority (CEA) / other licensing authorities wherever required. However, application shall be made by the Department and any statutory fee, as applicable, shall be paid by the department directly to the government authorities concerned.

1.24. DATE OF TAKING OVER OF THE INSTALLATION & DATE OF ACCEPTANCE:

1.24.1. The date of taking over of the installations under any sub-head of E&M works shall be the date of taking over the complete building (s) after due completion of the entire composite work and after complete test and trial run of all the major equipment's under all sub-heads of E&M works to the entire satisfaction of the engineer-in-charge.

1.24.2. Subject to the guarantee clause, date of taking over the installation after stipulated period of trouble-free operation of all the E&M works shall be the date of acceptance.

1.25. ORDER OF PREFERENCE:

Should there be any difference or discrepancy between the description of items as given in the Schedule of Quantities, technical specifications for individual items of work (including additional and commercial conditions) and IS Codes etc., the following order of preference shall be followed:

1. Schedule of quantities
2. Additional and Commercial Conditions
3. Technical specifications specified in the tender
4. General Conditions of Contract 2023 for Construction works of CPWD
5. Drawings
6. CPWD General Specifications
7. Indian standard specifications of BIS
8. Manufactures specifications & as decided by Engineer-in-charge
9. Relevant IS or any other international code in case IS code is not available

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

PART-*C*

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ADDITIONAL CONDITIONS AND SPECIFICATIONS FOR THE WORK OF INTERNAL & EXTERNAL ELECTRICAL INSTALLATIONS :

2.1. The wires / cables used for point wiring, circuit wiring, sub-main wiring, power wiring and other wirings shall be done by FRLS grade PVC insulated copper conductor single core cable of 1100 V grade and of makes as specified in the list of accepted makes of materials.

2.2. All the wires should be terminated to the switch box / DB / MCB etc. by crimping with suitable size tinned copper lugs, unless the wire is single stranded. For termination to switches soldering is permissible. Nothing extra shall be paid on this account.

2.3. Hidden / concealed items and earthing work shall be done in the presence of the Engineer-In-charge of the work or his authorized representative only. The contractor shall give due notice for such work in advance to the department.

2.4. **The wireman / electrician engaged shall possess valid electrical workman permit in appropriate category as per rule.**

2.5. The drawing showing layout of the main board, allied equipment, if any, shall be got approved by the contractor from the engineer-in-charge before fabrication and execution.

2.6. All hardware, fastening material viz nuts, bolts, washer and screws etc. to be used on work shall be of zinc / cadmium plated iron.

2.7. The contractor shall have to furnish the insulation test report, earth test report, along with all required detailed of electrical load on the prescribed Performa for the electric connection from the supply company.

2.8. The contractor shall submit the completion certificates and completion plan as per clause 1.26 of General specification for Electrical work (Part-I internal)-2013

2.9. The chases in wall shall be done by chase cutting machines, for which the contractor shall arrange adequate numbers of chase cutting machines (chase cutters) for cutting chases in wall etc. for laying of conduit within the scope of work nothing extra shall be paid.

2.10. The contractor shall be entirely responsible and answerable for all the works done by him regarding quality, adherence to the laid down specifications, terms and conditions, warranty/guarantee etc. and he shall be liable to bear any compensation that may be levied by the department under any of the clauses of the agreement.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

2.11. The contractor is advised to visit the site before quoting for his tender to apprise himself about the site environments and other conditions. Drawings and inventories can be seen in the office of the Engineer – in – charge.

2.12. The contractor will make his own storage of his own materials. The watch and ward of the materials and of the installations would be responsibility of contractor till the work is completed / handed over to the department. Nothing extra shall be paid to the contractor on this account.

2.13. The contractor should use only the approved makes of materials in the work specified in the NIT.

2.14. The agency will provide lay out drawing prepared by his Engineer with consultation with Engineer-In-Charge or his representative for approval before execute of work.

2.15. All multi data Mtrs specified in item shall be suitable to measure voltage, current, PF, Kwh, frequency etc.

2.16. The department reserves the right to send such materials to the manufacturers / authorizedtest laboratory to verify the genuineness and quality of the product.

2.17. The work shall be carried out in engineering like manner and bad workmanship shall be rejected summarily. For redoing the job, no claim of the contractor shall be entertained on this account.

2.18. Payment terms: On account payments for part work (after stipulated and statutory deductions) as assessed by the Engineer – in-charge for the applicable items in the Contract shall be payable at part rates not exceeding the percentage indicated against the stages of work mentioned below:

a) Items of MCBDB, MCB, MCCB, Ac units, CCTV

S.N	Stage of work	Percentage of Rate
a	On initial inspection of material and delivery at site in good condition on pro-rata basis	80%
b	On completion of installation on pro-rata basis	10%
c.	On completion of testing and commissioning	5%
d	At the time of payment of final bill	5%

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

b) Items connected with point wiring, circuit wiring, sub-main wiring, power point wiring and light plug wiring

SL	Stage of work	Percentage of Rate
a	On laying of conduits with accessories, switch boxes, etc. on pro-rata basis	40%
b	On drawing of wires including terminations, switches, sockets etc. on pro-rata basis	40%
c.	On completion of item and after testing and commissioning	15%
d	At the time of payment of final bill	5%

c) For other items, the part rates will be decided by the Engineer-In-Charge of the work and shall be binding on the contractor.

2.19. All MCCBs with Ics = 100% Icu shall only be provided except mentioned.

2.20. All the MCCBs / RCCBs/ MCBs/ MCB DBs shall be of similar make. MCBs shall be of 10 KA rating. For incomer MCCBs in panel's earth leakage protection shall be provided. The KA rating for MCCB shall be as per the item.

2.21. The contractor will have to arrange for insulation and other tests like cable test etc. as per rules in the presence of the representative of Engineer-in-Charge as and when required by him and submit the test report in triplicate before the work can considered as complete.

2.22. The contractor shall be responsible for the safe custody of the electrical installation in the building, including fitting and fixtures till the installations handed over to the department. He should make his own arrangement for proper watch and ward at his risk and cost. No claim will be entertained on this account.

2.23. The work is to be carried out in workman like manner and generally in accordance with the plans. However, the contractor will be bound to carry out the work with minor deviation over the plan supplied if desired by the Engineer-in-Charge of the work.

2.24. Stage payment to the contractor for various minor components of work shall be regulated as per CPWD Specifications. For works for which the % payment is not specially mentioned in the specification, the rate of stage payment shall be decided by Engineer-in-Charge.

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

2.25. Any Damage done to the building during the execution of electrical work shall be made good immediately at his own cost to the entire satisfaction of the Engineer-in-Charge.

2.26. All PVC insulated copper conductor cables used for the work shall be FRLS type with ISI mark and of make as per approved list.

2.27. Wherever makes of LT panels/Feeder pillars are not specifically mentioned in schedule/particular sub work specification, the same shall be fabricated by panel builders with in house facilities for seven or more tank treatment process and powder coating. They also shall have approval from CPRI for panels with rating not less than the bus bar rating of the item.

2.28. Drawings of all panels and fabricated equipment's shall be submitted to the Engineer-In Charge got approved before fabrication.

2.29. The connections, inter-connections, earthing and inter-earthing shall be done by the contractor wherever required to be done for energization of the installation and nothing extra shall be paid on this account.

2.30. General arrangement of Feeder Pillar shall be got approved before fabrication work starts. Drawing with details shall be submitted to the Engineer-in-Charge and got approved before fabrication.

2.31. Cable route and pole locations shall be marked in drawing / site and got approved by the Engineer-in-charge or his representative before commencement of work.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

ADDITIONAL CONDITIONS AND SPECIFICATIONS FOR THE WORK OF ON GRID TIED ROOFTOP SOLAR PLANT

GENERAL, COMMERCIAL AND ADDITIONAL CONDITIONS

1.1 General

1.1 This specification covers manufacture, testing as may be necessary before dispatch, delivery at site, all preparatory work, assembly and installation, commissioning putting into operation of E & M installations.

The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (internal) 2023, Part-II (external) 2023, and Part-IV (sub-station) 2013 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.

1.2 The tenderer should in his own interest visit the site and get familiarize with the site conditions be for e-tendering.

1.3 No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

1.4 The makes/models and Cat. No. etc. mentioned in NIT are indicative only. The firms shall be responsible for providing the system fulfilling the specifications, capacity and all other related requirement of system ensuring compatibility between different items of work.

1.5 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.

1.6 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.

1.7 The contractor shall discuss with EE(E) or his authorized representative / visit the site

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

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.**

2.0 Commercial conditions

2.1 Type of contract

The work to be awarded by this tender shall be treated as indivisible works contract.

3.0<u>Terms of payment</u>

3.1 Payment shall be made on the basis of running account bill as per progress of execution of work. **Stages of payment shall be as per following** on prorate basis:-

i) Against supply of material received at site in good condition-70%
ii) On completion of pro-rata installation-15%
iii) On commissioning and completion ofwork-10%
iv) After handing over along with Net Metering arrangement-5%

4. Rates

a. The rates quoted by the tenderer, shall be firm and inclusive of all taxes including, GST, labour cess, duties, levies, etc. and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc at site including temporary construction of storage, risks, overhead charges, general liabilities/obligations and clearance from Local Bodies. However, the fee for the Local Body inspections shall be borne by the department**.**

b. No payment will be made to the contractor for any damage caused by rain, snow fall, floods, dampness, fire, sun or any other natural cause whatsoever during execution of work. The damage to the work due to above reasons, if any shall be made good by the contractor at own cost and no claim on this account shall be entertained.

c. Some restrictions may be imposed by the Client on the working and/ or movement of labour,

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

materials etc. on account of security reasons. The contractor shall be bound to follow such restrictions/ instructions and nothing extra shall be payable on this account. No claim for idle labour shall be entertained.

d. The department will not issue Octroi exemption certificate.

e. The contractor has to carry out Operation & Routine maintenance of the Solar Photovoltaic power generation system by deputing man power for cleaning of solar PV module, checking & routine maintenance the system for satisfactorily operation as per manufacturer's standards, recording the various electrical parameters in log book, watch & ward for the system for a period of 60 months from the date of handing over i/c fortnightly visit by Engineer for checking the healthiness of the system i/c repair/replacement of the defective part or to attend the major complaint whenever informed by the Department as per terms & condition attached. (Supply of spare parts shall be included in the scope of the work under guarantee period) from the date of handing over.

5.0 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 the system shall be deemed to have been included in the tender irrespective of such items are specifically mentioned in the tender documents or not.

6.0Storage and Custody of Materials

For storage of sundry materials and erection of equipment's, the agency has to make his own arrangements. No separate storage accommodation shall be provided by 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.

7.0Care of the Building

Care shall be taken by the contractor while handling and installing the various equipment's 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.

8. Completion Period

8.1 The completion period as mentioned in the Tender documents is for the entire work of planning, designing, approval of drawings etc. i/c arrangement of materials & equipment's, delivery at site including transportation, installation, testing, commissioning and handing over the entire system to the satisfaction of the Engineer-in-charge.

8.2 The Contractor shall be responsible for handing over the Inventory of entire system in operational to the Client/Department to the satisfaction of the Engineer-in-Charge before recording of completion Certificate & making the final payment.

9.0 Guarantee

9.1 All equipment shall be guaranteed for a period of 12 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. The equipment or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in-charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. If the performance of Solar PV system found unsatisfactory during the guarantee period or contractor repeatedly fails to replace/repair the defective solar PV system within 15 days time after written complaint in this regard, the amount of performance guarantee shall be forfeited absolutely. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

9.2 The tenderer shall guarantee among other things the following:

a) Quality, strength and performance of the materials used as per manufacturers standards.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

b) Safe mechanical and electrical stress on all parts under all specified conditions of operation.

10. Acceptable Makes of Various Equipment's

10.1 The acceptable makes of various equipment's/components/accessories have been indicated in "List of Preferred Makes". The tenderer shall work out the cost of the offer on this basis. Alternate makes are not acceptable.

10.2 The firm will be required to procure material directly from the manufacturer/authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor.

11. The successful tenderer should furnish well in advance three copies of detailed instructions and manuals of manufacturers for all items of equipment's regarding installation, adjustments operation and maintenance including preventive maintenance trouble shooting together with all the relevant data sheets, spare parts catalogue etc. All in triplicate.

12. Extent of work

12.1 The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipment's covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender documents in connection with this contract as this is a turnkey job.

12.2 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 equipment's, foundation, making of opening in walls or in floors and restoring them to their original

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

condition / finish and necessary grouting etc as required.

b) The contractor shall not damage the existing water proofing while working on the terrace floor. Any damage caused to the water proofing/terrace flooring shall be made good at no extra cost.

c) All supports for cables and MS channels for erection of panels etc as are necessary.

d) Getting Local Body inspection done & obtaining approval for energizing the installation if required. However, necessary fees for inspection shall be borne by the Department.

e) 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.

f) Closing of the cable entry points in sub-station/D.G Set room/buildings to arrest seepage of water, rodents etc.

g) Tools and tackles required for handling and installation.

h) Necessary testing equipment's for commissioning.

i) Watch and Ward of materials and/or installation and equipment's till their handling over to the department.

j) Provision of supports/clamps for equipment's, cables etc. wherever required.

k) Arrangement of networking on requirement.

13. Inspection and Testing

13.1 All the tests certificate of the equipment's are required to submit along with delivery of material.

13.2 Copies of all documents of routine and type test certificates of the equipment, / cable carried out at the manufacturers premises shall be furnished to the Engineer-in- charge and consignee.

13.3 After completion of the work in all respects the contractor shall offer the installation for

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

testing and operation.

14. Compliance with Regulations and Indian Standards

14.1 All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following:

i) Factories Act

ii) Indian Electricity Rules

iii) BIS & other standards as applicable

iv) Workmen's compensation Act

v) Statutory norms prescribed by local bodies, Power supply co., etc

14.2 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

14.3 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs. 500/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

15. Indemnity

The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipment's and ancillary equipment under the supervision of the successful tenderer in so far as the latter is

responsible. The successful tenderer shall also provide all insurance including their party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

16. Erection Tools

No tools and tackles either for unloading or for shifting the equipment's for erection purposes would be made available by the department. The successful tenderer shall make his own arrangement for all these facilities.

17. Cooperation with Client/Occupants

The successful tenderer shall coordinate with occupants and client to carry out the work with least disturbance and shut down shall be taken after consultation with client department.

18. Painting

This shall include cost of painting of the entire installation, wherever required.

19. Interpreting specifications

In interpreting the specifications, the following order of decreasing importance shall be followed in case of contradictions:

a) Schedule of quantities
b) Technical specifications
c) General, Commercial and Additional Conditions
d) Drawing (if any)
e) MNRE Guidelines
f) CPWD General specifications
g) Relevant BIS codes or other international code in case BIS code is not available.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

20. Warranty:

25 Years performance warranty shall be provided by manufacturer on SPV modules with degradation in performance maximum 10% after 10 years and 20% after 25 years as per industrial standard warranty conditions on complete system from the date of commissioning of the system. If SPV modules do not perform satisfactorily as above then the manufacturer of the solar PV modules shall make proper check of the quality of material and should replace the unsatisfactorily solar PV modules with free of cost. Otherwise department may take action to debar the manufacturer for CPWD works and may intimate to MNRE to take suitable action against such defaulting manufacturer.

21. The scope of work for the bidder include obtaining No Objection Certificate (NOC) from Distribution Company (~~GESCOM~~/~~HESCOM/~~**MESCOM**~~/CESCOM~~) for grid connectivity, complete design, engineering, manufacture, supply, storage, civil work, erection, testing and commissioning of the grid connected rooftop Solar PV project

22. The support mounting structure / elevated structure & foundation of solar PV modules shall be so designed to withstand a wind speed 150 km/hr. The contractor shall arrange vetting/approval of the Structural drawing of mounting Structure/elevated structure for solar PV modules from Qualified structural Consultant/ IIT / NIT of so required by the Engineer – in – Charge, the agency shall also arrange the visit of structural Engineer to ascertain that existing R.C.C slab is strong enough to take this additional load of mounting structure along with solar PV modules. All co-ordination and necessary fees for approval of drawings shall be paid by the Firm. Nothing extra shall be paid on this account.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

SPECIAL CONDITIONS

1. The trial run of electrical work / equipment's shall be carried out by the firm in the presence of Engineer-in-charge or his representative at the site as per requirement of department.

2. The application for Net Metering / bidirectional meters shall be furnished by the client / department and necessary fees also shall also be paid by the Department. The Contractor shall liaison with the ~~GESCOM~~/~~HESCOM/~~**MESCOM**~~/CESCOM~~ for the necessary documentation and obtaining the Net metering arrangement. The agency has to liaison for obtaining the Net metering.

3. **All equipment's and materials to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after sales service. The Department reserves right to inspect Solar PV Panels at factory/Manufacturers premises during the course of manufacturing at any stage and the department shall be provided with the proof of using the approved make of PV Cells in the manufacturing of solar PV Modules. The Contractor shall intimate the schedule of manufacturing of modules at factory prior to taking up in the production.**

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

TECHNICAL SPECIFICATIONS

SCOPE OF WORK

1. The scope of work involves design, supply, installation, testing and commissioning of complete Solar PV system as per BOQ and these specifications. The drawings along with detailed design and equipment datasheet shall be submitted for approval before starting the work. The work shall be carried out as per designs approved by the Department. The contactor shall submit the design of SOLAR PV system for each building immediately after the award of work.

2. The Solar PV module shall be installed on the existing roof / and elevated structure asper the site conditions and as per the drawing approved by the Engineer-in-charge.

3. The agency shall connect the output of the SPV module with suitable sq.mm SLPO copper cable to the inverter through the junction boxes. From the inverter, suitable size of 1.1 kv copper cable shall be connected to the AC DB / Panel as approved by the Engineer-in-charge. From the AC DB / Panel, the required size of LT cabling shall be provided as per the requirement and approval of Engineer-in-charge.

4. The agency shall provide 2 Nos. earthing for each installations and to be connected to the Solar PV Panel, using GI strips / copper cable duly laid as per the CPWD Specifications and drawings. This shall be got approved from the department prior to execution.

TECHNICAL SPECIFICATIONS: -

1. AMBIENT CONDITION & SOLARINSOLATION

LOCATION / SITE DETAILS FOR THE SPV POWER PROJECT

- Address of site : SIB Shivamogga, SIB Davangere, SIB Bhatkal. .
- Location : Shivamogga, Davangere, Bhatkal.
- Ambient temperature : 35.5^{0}C max., 20^{0}C min, 95% Humidity (Average)

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

CONTRACTORS ARE ADVISED TO VISIT THE SITE BEFORE QUOTING THE RATES. OTHERWISE IT WILL BE ASSUMED THAT THE PARTY HAS ALREADY VISITED THE SITE BEFORE QUOTING THE TENDER.

Bidders shall seek from relevant database / source, all the data pertaining to the ambient conditions like temperature, humidity, wind load, rain, weather condition and historical solar radiation etc., pertaining to the site location and optimize the design accordingly. All design calculations and installation details shall be submitted after the award of work.

2. EQUIPMENT'SPECIFICATION

2.1 Solar PV Module (Electrical Features)

Solar PV module array will be made by utilizing Poly/mono crystalline high efficiency Silicon Solar PV cells. Minimum power output guarantee offered for the SPV Module shall not be less than25 years. Individual solar module rating will not be less than 330 Wp at Standard test conditions. Each Solar PV module offered shall meet following min. requirement.

- Efficiency of module, Ef,m - >23%

SPV module conversion efficiency should be equal to or greater than 23% (cell) under STC of 1000w/m2 and cell operating temp of 250 C and AM 1.5 radiation. Modules must qualify to relevant IEC standards Part I and II for safety qualification testing.

Note: I-V curve of each PV module with Sl. Nos. should be submitted along with modules. Solar PV modules shall conform to IEC-61215 standards. Documentary evidence towards IEC- 61215 certification shall be submitted after award of work. Minimum following parameters should be provided:

- Maximum Power,Pmax
- Minimum Power,Pmin
- Open Circuit Voltage,Voc
- Short Circuit Current,Isc

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

- Voltage at Max PowerVmp
- Current at Max powerlmp
- Fill Factor,FF
- Efficiency of cell,Ef,c
- Efficiency of module,Ef,m

Necessary I-V curves at 25c, 45c, 60c and at NOCT are required to be furnished after award of work. Offers to provide PV module warranty of 25 years with no more than 10% degradation in performance/output over 10 years.

The rated output power of any supplied module shall not have negative tolerance.

2.2 Solar PV Module (Mechanical Features)

Solar PV Module design will conform to following Mechanical requirement

- Toughened, anti reflective, low iron content, high transmissivity front glass.
- Anodized Aluminium Frame
- Ethyl Vinyl Acetate (EVA)encapsulate
- Silicon edge sealant around laminate
- Tedlar / Polyester trilaminate back surface
- ABS plastic terminal box for the module output termination with gasket to prevent water moisture.
- Resistant to water, abrasion, hail impact, humidity &other environment factor for the worst situation at site.
- By pass diode.
- Except where specified, the front module surface shall consist of impact resistant, low-iron and high-transmission toughened glass.
- The module frame, if any, shall be made of a corrosion-resistant material which shall be electrolytic ally compatible with the structural material used for mounting the modules.
- The module shall be provided with a junction box with either provision of

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP65 rated

2.3Module mounting structure

Wherever required, suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design either I or L sections.

Structural material shall be corrosion resistant and electrolytic ally 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 80-100 microns on steel as per IS5905, if steel frame is used. Aluminum frame structures with adequate strength and in accordance with relevant BIS/international standards can also be used.

Structures shall be supplied complete with all members to be compatible for allowing easy installation at the ground site.

The structures shall be designed to allow easy replacement of any module & can be either designed to transfer point loads on the ground as per site conditions and design to be approved by CPWD.

Each structure shall have a provision to adjust its angle of inclination to the horizontal as per the site conditions by way of Manual operation.

Each panel frame structure be so fabricated as to be fixed on the ground. The structure should be capable of withstanding a wind load of Min. 150 km/hr after grouting & installation. The front end of the solar array must be one meter above the ground. Grouting material for SPV structure shall be as per M 15(1:2:4) concrete specification.

The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Contractor shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of Goods.

The Contractor shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;

a) Determination of true south at the site;

b) Array tilt angle to the horizontal, with permitted tolerance;

c) Details with drawings for fixing the modules;

d) Details with drawings of fixing the junction/terminal boxes;

e) Interconnection details inside the junction/terminal boxes;

f) Structure installation details and drawings;

g) electrical grounding (earthing);

h) Inter-panel/Inter-row distances with allowed tolerances; and

i) Safety precautions to be taken.

The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the ground columns properly. All nuts and bolts shall be of very good quality stainless steel. Detailed design and Drawing shall have to be submitted to CPWD for acceptance and approval before execution of work.

NOTE: The structural design of the complete system should be compatible with the structural strength and load bearing capacity of the site/ ground, design calculations and certificate to this effect shall be provided by a qualified chartered structural engineer.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

The array structure shall be made of hot dip galvanized MS angles of size not less than 50mm x 50mm x 6mm size. The minimum thickness of galvanization shall be at least 70 microns. All nuts & bolts shall be made of good quality steel.

The work should be completed with supply, fitting fixing of clamps, saddles, nut & bolts etc. While quoting the rate, the bidder may mention the design & type of structure offered. All nuts & bolts shall be made of very good quality steel.

The structure shall be designed to allow easy replacement of any module and shall be in line with site requirements.

The structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly. There shall be no requirement of welding or complex machinery at site.

The array structure shall be so designed that it will occupy minimum space without sacrificing the output from SPV panels & shall withstand heavy winds.

The supplier / manufacturer shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings.

The agency shall provide an elevated structure, wherever required as per site conditions, with G.I. pipe as per the drawing duly approved by the department. The agency shall also obtain the certification from the structural Engineer for withstanding a wind speed of 150 KMPH.

2.4 Junction Boxes

The junction boxes shall be dust, vermin and waterproof and made of FRP / Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper size. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable marking shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. The junction boxes shall have suitable arrangement for the following:

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

- Combine groups of modules into independent charging sub-arrays that shall be wired to the controller.
- Provide arrangement for disconnection for each of the groups.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation.
- The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.
- Metal oxide varistors shall be provided inside the Array Junction Boxes.

2.5 Power Conditioning Unit(PCU):

The PCU is a combination of Inverter, AC Charger and data logger all housed in a singleunit. Maximum power point tracker (MPPT) shall be integrated into the PCU to maximize energy drawn from the solar PV array. MPPT shall be microprocessor/micro controller based to minimize power losses and maximize energy utilization. The efficiency of PCU shall not be less than 97%.

PCU shall include self-protective and self-diagnostic features to protect itself and the PV array from damage in the event of PCU component failure.

Power conditioning unit will comply the following requirements.

- 415V AC $\pm$ 5% 50Hz, 3Phase
- Overload capacity – 150% for60sec.
- Output wave shape: sine wave with <3% total harmonic distortion(THD).
- Adjust the Voltage and Frequency Levels to suit the MAIN LT panel/feeder pillar BUS near the individual building.

2.6 MODES OF PCU

2.6.1 STAND BY MODE:

The control system shall continuously monitor the output of the solar power plant until pre-set value is exceeded and that value to be indicated.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

2.6.2 BASIC SYSTEM OPERATION (FULL AUTOMODE):

The system shall automatically 'wake up' in the morning and begin to export power provided there is sufficient solar energy and the grid voltage and frequency is in range.

2.6.3 SLEEP MODE:

Automatic 'sleep' mode shall be provided so that unnecessary losses are minimized at night. The power conditioner must also automatically re-enter standby mode when threshold of standby mode reached.

2.6.4 INVERTER

The inverter output shall always follow the grid in terms of voltage and frequency. This shall be achieved by sensing the grid voltage and phase and feeding this information to the feedback loop of the inverter. This control variable then controls the output voltage and frequency of the inverter, so that inverter is always synchronized with the grid. The grid islanding shall be ensured.

The typical specification of PCU is listed below:

a.	**AC side**	**As per Tender design**
i	Nominal AC Power	AS per BOQ item
ii	Output AC Voltage (as per manufacturer practice	415V+/- 10%
iii	Frequency	50 Hz
iv	Total harmonic distortion	< 3% at nominal power
v	AC over / under voltage over voltage / under frequency protection.	Yes
vi	Phase Shift (COS Phi)	1
b.	**DC Side**	
i	Maximum DC Voltage	1000V
ii	MPPT Voltage range	350 V -800V
iii	Maximum DC Current *	
iv	DC voltage ripple	<3%
v	DC over voltage protection	Yes

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

c.	**Other Parameters**	
i	Minimum efficiency (CE)	>97%
ii	Ambient temperature	0-50º C
iii	Humidity (Non Condensing)	95%
iv	Degree of protection	Minimum IP-65 for outdoor and Minimum IP 21 for indoor
v	Dimension / Weight	As per Manufacture design.
vi	Noise level	< 65 dBA
vii	Cooling	Natural Air
viii	Input Range	420-850 V DC
ix	Power Factor	0.99
x	Input / Output cable Termination	Top

Other important Features/Protections required in the INVERTER

- Automatic morning wake-up and night shutdown
- PCU must have the feature to work in tandem with other similar PCUs and be able to be successively switched ON and OFF automatically based on solar radiation variations during the day.
- Mains (Grid) over-under voltage and frequency protection
- **Fool proof protection against ISLANDING**.
- Included authentic tracking of the solar array‘s maximum power operation voltage (MPPT).
- Array ground fault detection.
- LCD and piezoelectric keypad operator interface Menu driven Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
- MOV type surge arresters on AC and DC terminals for over voltage protection from lightning-induced surges.
- INVERTER should be rated to operate at 0–55 deg. Centigrade unless provision for air conditioning is included in INVERTER
- All parameters should be accessible through an industry standard communication link.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Protection against lightning

Surge voltage induced at output due to external source Set point pre-selection for VAR control Remote control via telephone modem or mini web server Integrated protection in the DC and three phase system Insulation monitoring of the PV array Ground fault detector – which is essential for large PV generators in view of appreciable discharge current with respect to ground.

Over voltage protection against atmospheric lightning discharge to the PV array is required.

The power conditioner must be entirely self-managing and stable in operation. Aself-diagnostic system check should occur on startup. Functions should include test of key parameters on startup.

2.6.5 DC distribution board/Array Junction Box

DC distribution board shall be provided in between solar array and PCU. The junction boxes shall be made of FRP / Thermo Plastic with impact resistant transparent cover, waterproof, dust free, vermin with IP65 protection. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. Array junction box shall have suitablereverse blocking diodes of minimum DC blocking voltage of 800 V with suitable arrangement for its connecting. The array box shall also have suitable surge protection.

The junction boxes shall have suitable arrangement for the following: Combine groups of modules into independent charging sub-arrays that shall be wired to the controller. Provide arrangement for disconnection for each of the groups.

Provide a test point for each sub-group for quick fault location. To provide group array isolation. The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

By pass Diode

Fuses of suitable rating for Overloading protection of array section.

2.6.6 Surge protection system

The DIN channel mountable pluggable surge protection shall be installed in a network configuration, consisting of a single block MOV (Metal Oxide Varistor) based surge arrester having nominal surge handling capacity of 15 KA 8/20 μs &maximum surge handling capacity of 30 KA 8/20 μs to provide protection between (L+, L-, earth). All surge arresters in these network configurations shall be of same manufacturer. The Protection unit shall be based on Single block High Capacity Metal Oxide Varistors (MOV), capable of handling 15 KA 8/20 μs surges and shall be able to give an indication in the event module failure and shall be pluggable to facilitate the on-site replacement without disturbing the lines. One extra set of replacement protective device shall be furnished to the job site. Protection shall be manufactured to withstand a maximum continuous operating voltage of not less than 115% of normal RMS system voltage

2.6.7 AC Distribution Board (ACDB)

AC DB shall be provided in between PCU and loads.

3. APPROVAL &CLEARANCE

All associated activities required for necessary clearances / permissions / approvals / licenses from concerned Electrical authorities so their govt / strategy / Local bodies are in the scope of contractor.

4. EARTHING AND PROTECTION

The array structure of the PV plant at roof top shall be grounded properly using adequate number of earthing kits. All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant. Earthing shall be in line with IE rules. The earthing & grounding shall also meet the requirement of PV module/cell manufacturer. Detailed specifications have been provided in the Earthing section.

5. Cable and accessories

All the cables shall be supplied conforming to IS 694 & shall be of 650 V/ 1.1 kV grade as per requirement. Only FRLS PVC copper cables shall be used. The size of the cables

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

between array interconnections, array to junction boxes, junction boxes to DCDB, DCDB to PCU and PCU to main grid (~~GESCOM~~/~~HESCOM/~~**MESCOM**~~/CESCOM~~) etc. shall be so selected to keep the voltage drop and losses to the minimum and all cables are included in the scope of work. For DC connections, the cable shall be of XLPO type Solar cables.

Bidders are required to mention each size of cables used and should consider their resistance / impedance in the design optimization. Such calculation should be submitted along with the bid. The contractor shall supply all cables, installation accessories, which are required to install and successfully commission the power plant.

6. Space for Solar Array and Control room

The bidder shall give the details of array layout before execution for approval.

Bidders are advised to visit the site and conduct a survey for deciding the most suitable layout from the installation & maintenance point of view.

7. Type tests

Type test reports of all major equipment (Solar modules& PCU) shall be submitted to the Engineer in Charge. The type test report shall be within 5 years from bid opening date, in absence of which fresh type test shall be done without any extra cost.

8. Installation and commissioning

Detailed project execution program shall be submitted along with the offer. The contractor will be responsible for arranging all tools & plants for installation and commissioning the complete system.

The contractor shall also submit the erection, testing & commissioning procedure for approval to the owner. These procedures will form integral part of the acceptance report for successful erection and commissioning the system. These reports will be prepared and signed by contractor's representative &representative of Client/CPWD.

9. Packing, shipping and marking

The bidder shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment, packaging and shipping costs shall be borne by the supplier.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

10. Insurance

The bidder shall provide insurance coverage ex-factory until commissioning and acceptance for replacement of repair of any part of the consignment due to damage or loss.

11. Inspection

All major equipment like solar PV modules shall be inspected by the Engineer- In- Charge or his representative before their dispatch. For other items, the contractor shall obtain the prior approval before dispatch.

The contractor shall obtain approval for all equipment drawings & data sheets from the Engineer- In- Charge before commencement of the manufacturing / procuring / outsourcing.

12. Training & after sales service

Training and after sales service is an important component of supply and is included the scope of work. An explanation of preventative maintenance schedule, plan of operation, scope and implementation of the after sales service shall be imparted to the Operating personnel of the Client/ CPWD.

13. Documentation

Three sets of installation manual / user manual shall be supplied along with the each power plant. The manual shall include complete system details such as array layout, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals. The contractor shall supply three sets of soft copies (in CD form) of all documents including drawings and user manual and three sets in hard copy.

14. Standard to be followed:

PV Modules IEC 61215/ IEC61730

Power Conditioners IEC 61683/ IEC60068-2

Charge Controller/MPPT Units: IEC 62093/ IEC 60068-2

Cables IEC 60189/ IS 694/ IS7 0 9 8

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

15. SPECIFICATIONS FOR PV PANEL SUPPORT/MODULE MOUNTINGSTRUCTURE

Sl. No	Description	Specification Requirement
1	Material	Hot dip galvanized steel with min. 70 micron galvanizing Or as per manufacturer Standard Capable of with stand wind pressure as stipulated.
2	Thickness of member	Suitable wind Speed of 150 kmph. STAAD analysis to be submitted.
3	Over all dimensions	As per manufacturer standard
4	Wind rating	150 Km / hour
5	Tilt angle and adjustment	Tilt angle shall be calculated to provide the maximum annual energy output to take maximum insulation. This shall be decided based on the location of array installation.
6	Pitch of structure	Max. 7 Mtr or as per manufacturer standard
7	Hardwares& fastener	SS 304
8	Foundation	The foundation of the array mounting structure / elevated structure shall be provided with 1:2:4 CC design as certified by the Structural consultant and approved by the department. The minimum clearance between roof slab and panel shall be 600 mm

16. PLANT METERING / DATA LOGGING

a) PV array energy production: Digital Meters to log the actual value of AC/ DC Voltage, Current One**-way LT energy meter (Export metering) Class 0.2S ABT Compliant shall be incorporated in the system on the main AC Grid supply complete with electrical switchgear in the main plant.**

17. DANGER NOTICE BOARDS

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Danger notice boards should be provided as and where necessary as per IE Act / IE rules as amended up to date.

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Clause-18

List of mandatory machinery, tools and plants to be deployed by the contractor at site

1)	Steel/Aluminum Ladder 1.5 m to 8 m.	2 Nos .
2)	Chase cutting machines.	2 Nos .
3)	Electrical wire drawing equipment.	2 Set .
4)	Torque wrench for nut/bolt/screws.	2 Nos .
5)	Conduit die set.	2 Set .
6)	Pipe vice.	1 No .
7)	Bench vice.	1 No .
8)	L.T. Megger 500/1000 volts.	1 No .
9)	Tong Tester.	1 No .
10)	Multimeter.	1 No .
11)	Hydraulically operated & hand Operated crimping machine.	1 No .
12)	Earth tester.	1 Nos .
13)	Portable Ordinary drilling machine.	2 Nos .
14)	Portable Hammer drilling machine.	2 Nos .
15)	Overhead conduit puller.	1 No .

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

LIST OF PREFERRED MAKE OF MATERIALS

NOTE:

1. A List of Preferred Brand Names of Various Materials / Products are shown below for usage in execution of work. However, Approved equivalent material of any other Specialized Companies / Firms may also be used, in case it is established that the Brands Specified below are not available in the market or in other unavoidable circumstances and subject to Approval of the alternate Brand by the Superintending Engineer, CPWD, Mysore.
2. It must be ensured, in general, that all materials to be used in the works shall bear BIS Certification mark. In case where for a particular material / product, BIS Certification Mark is not available, then the material proposed to be procured can be used subject to the condition that it should conform to CPWD specifications and relevant BIS codes. In such cases written approval of the Engineer – in – Charge shall be obtained before use of such material in their works.
3. The list given below does not absolve the Executing Agency from their responsibility for using these products. It is only after, they are satisfied about the quality and performance, the products shall be used. To achieve this, proper check on the quality of the product, actually to be used, should be exercised.

S.No.	Component	Preferred make
1.	SPV Modules	Havells/ HHV/Emvee/TATA Power Solar / Waree
2.	Power Conditioning Unit	Havells/ Growatt/ Hitachi/ Rishabh/ Waree/ Sun grow / Solis
3.	Accessories/Connecters	MC/ Tyco/ Solarlok
4.	Indicating Lamps LED type and Push Buttons	Schneider/L&T/Siemens/Vaishno/Telemechanic /Omron
5.	Digital Meters	Conzerv / L&T / AE / MECO/Secure/HCL
6.	LT Jointing Kit / Termination	Raychem /Mahindra/ M – Seal /3M
7.	Cable Glands Double compression with earthing links	COMET/DOWELLS / JAINSONS

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

8.	Bimetallic /Copper/ Aluminium Cable Lug	Comet/ Dowell's/ Jainsons
9.	MCB / MCB DB /MCCB/Isolator / Time Switch / Contractor / Cable End Box / ACB'S etc.	Legrand/Siemens/Schneider/ Lauritz Knudsen Electrical and Automation (L&T)
10.	UTP Data Cable	Legrand / Systimax/ Commscope
11	GI pipes	SAIL / Jindal-Hissar/ TATA
12	Phenolic laminated sheet	Hylam/ Greenlam
13	XLPE aluminum / copper conductor cables	Polycab/Havells/KEI /RR KABEL
14	Solar Cables(XLPO)	Polycab/Havells/KEI /RR KABEL

Note : In case make of any equipment or material is not specified in the NIT the decision of Engineer-In-Charge in this regard will be final

EXECUTIVE ENGINEER (E)

CPWD, Mysore

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

PART-D

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)

Schedule of Work

Name of work : SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore. (Recall)

SI. No.	Description of item	Qty	Unit	Rate i/c. C.I	Amount
1	Supply, Installation, Testing and Commissioning of on-grid Solar Photovoltaic Power Plant conforming to various applicable standards BIS, IEC, MNRE guidelines, the Central Electricity Authority Regulations and CPWD Specifications as amended up to date, consisting of Mono/Poly Crystalline silicon solar cells module, net metering facility, necessary control, protections, earthing, cabling, mounting structure, junction boxes, power conditioning units, Real time online web interfaced Data Monitoring System, Distribution panels, grid connecting arrangement, conduits, pipes, cable trays and other accessories etc. as required. **a)** High Energy Efficiency Solar Photovoltaic Module of capacity 330 Wp or above, manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730-Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 23% at STC with temperature coefficient of Pmax better than -0.30% per degree Celsius. 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. Solar Modules shall be designed to operate in relative humidity upto 100% with temperature between -10 Deg C and +85 Deg C. Further, each PV module used in any solar power project must have Radio frequency identification tag with information such as name of manufacturer, month and year of manufacturing, country of origin (separately for Solar cell and module), I-V curve, Unique Serial No and Model No of the module, Wattage, Im, Vm and FF, name of test lab issuing IEC certificate.				
	b)Power Conditioning Unit (PCU) of 350-800 V DC Input voltage range and 415 V AC, three phase, 4 wire, 50Hz +/- 2.5 Hz, output voltage suitable to generate AC with a variation of 10% at nominal voltage. Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 degree C , Minimum IP-65 for outdoor and Minimum IP 21 for indoor, Built-in meter and data logger, MPPT, switching devices IGBT/MOSFETs and controller Microprocessor /DSP . PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown. The PCU shall be able to withstand unbalanced load conforming to IEC standard with shutdown/standby mode.It must be provided with grid islanding				
	along with manual disconnect pole isolation switch besides automatic disconnection. Minimum protections: Mains Under / Over Voltage, Over current, Over/Under grid frequency, Over temperature, Surge voltage induced at output due to external source, Shortcircuit, Lightening, Anti Islanding (for grid synch. Mode) and other protections as per applicable standards. LCD/LED display of minimum parameters: DC input voltage, DC current, AC Voltage and current (all 3 phases, in case of 3 phase), Instantaneous & cumulative AC output power, Daily DC energy produced and other parameters applicable standard. Communication interface RS 485 / RS 232. **c) Module mounting structure: The roof top solar plant generation units shall be installed by using supporting Aluminium/Galvanized MS structure base frame (mass of zinc coating shall be as per IS4759) on the existing tin shed including properly securing with the tin shed with clamps, nuts & bolts etc., as required. The suitable arrangements for maintenance and cleaning shall be provided.**				

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

	d) Real time online web interfaced Data Monitoring System complete with accessories for various parameters such as Solar Irradiance, temperature, AC Output Voltage and current, Output Power, Power factor, DC Input Voltage and Current, Time Active, Time disabled, Time Idle, Power produced and other parameters as per standard practices. **e)** Array junction box & Main junction box with IP 65 protection and termination arrangement for incoming and outgoing cable along with glands, lugs and other accessories etc. as required. Each junction box shall be made of GRP/FRP/Powder Coated Aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement with High quality Suitable capacity Metal Oxide Varistors(MOVs) (semiconductor diode with resistant applied voltage)/ surge arrestors and suitable Reverse Blocking Diodes, isolation switches isolate the DC input to Inverter, copper bus bar etc. **f)** Lightning ,surge voltage protection, earthing protection and grid islanding.				
	g) Cables: Connections & Interconnections by required size IR/UV protected XLPE insulated copper conductor 1.1 kV grade armored power and control cables(ISI Marked) along with supplying & fixing of necessary channel/conduit, GI cable trays , supports, lugs, thimble and other accessories etc. as required. **h)** DC Distribution Board And AC Distribution Panel Board: IP65, free standing, metal cladded, having copper bus bar, having required protection and control gears, connectioninterconnection, etc. as required.				
	Note: Obtaining net metering approval from MESCOM is in the scope of the agency. All the required works including liasoning work with local DISCOMs shall be carried out within the quoted price, nothing extra shall be paid. However, the stauatory fee to be paid by agency, the same amount will be reimbursed upon reciept.	5	per kWp	60020.00	300100.00
				Total	**300,100.00**

Executive Engineer (E)
CPWD, Mysore

I	Nil	
O	Nil	
C	Nil	AE(E)(P) EE(E)

GENERAL ABSTRACT

SCHEDULE OF QUANTITY

Name of work : SITC of 5kWP Roof-top Solar Photo Voltaic Power Generation plant at NSO, FOD SRO, Mangalore. (Recall)

NIT No. 39/EE(E)/Mysuru/2026-27 (Recall)

Name of the Contractor

Sl.No.	Name of component	Estimated cost (Rs)	Percentage above or below the estimated cost	% in Figures	Total Cost (Rs)
1	As per Schedule	300,100.00			
	Total	**300,100.00**			

1. The Column Nos 4&5 are mandatory to be filled by the bidders/ tenderers. If all these columns are left blank, the tender become invalid.

2. The amount in figures in column No.6 shall appear automatically corresponding to the percentage quoted in column No.4 & 5.

3. The tenderer is need to quote the percentage only above or below or at par with the estimated cost to cover all the rates of item covered under the respective packages.

4. The percentage shall be written in 2 (two) place of decimal.

5. If the percentage selection in column No 4 is " At Par", by default the percentage will be considered as " Zero" only. In other words if "At par" is selected in column No.4, then no need to fill column No.5

6. The rate for the payment of each item will be - measured quantity x estimated cost of that particular item x tender percentage corresponding package respectively.

Signature of Contractor

Executive Engineer(E),
CPWD, Mysuru

I	Nil		
O	Nil		
C	Nil	AE(E)(P)	EE(E)