



**WEST BENGAL TOURISM DEVELOPMENT CORPORATION LIMITED**  
 (A GOVERNMENT OF WEST BENGAL UNDERTAKING)  
**OFFICE OF THE SUPERINTENDING ENGINEER (NORTH)**  
**MAINAK TOURIST LODGE COMPLEX, MALLAGURI, SILIGURI**  
**P.O. & P.S. - PRADHAN NAGAR, DIST – DARJEELING, PIN-734003**  
**Phone: (0353)251-1979 e-mail : [sewbtdcl@gmail.com](mailto:sewbtdcl@gmail.com) Website: [www.wbtdcl.com](http://www.wbtdcl.com)**

Memo. No. 250/Computer No: 349690/File No: WBTDC-14099(13)/4/2021-TA (WBTDC)-WBTDC

Dated: -01.12.2021

**NOTICE INVITING e-TENDER**

**e-NIO No- 38 /WBTDC/ SE (North) OF 2021-22**

e-Tender is invited by **Superintending Engineer (North)**, West Bengal Tourism Development Corporation Limited from the reputed bonafide financially sound contractor having sufficient experience in execution of the following works.

List of Schemes:

Sl. No	Name of the work	Estimated Amount put to Tender (Rs.)	Earnest Money (Rs.)	Period of Completion	Eligibility of the Bidder
1.	SITC of 10KW Roof Top Solar PV power project with State of the art Technology at Batabari Tourism Property with allied work on LT side (WBSEDCL) in the dist. Of Jalpaiguri.	NIL (Item Rate Tender)	RS. 25,000/-	30(Thirty) Days (From the date of Layout)	Contractors/ Bonafied Resourceful agencies having experience in similar nature of work.(The eligibility criteria is stated in clause no. 5 below)
2.	SITC of 10KW Roof Top Solar PV power project with State of the art Technology at Moorti Tourism Property with allied work on LT side (WBSEDCL) in the dist. Of Jalpaiguri.	NIL (Item Rate Tender)	RS. 25,000/-	30(Thirty) Days (From the date of Layout)	Contractors/ Bonafied Resourceful agencies having experience in similar nature of work.(The eligibility criteria is stated in clause no. 5 below)
3.	SITC of 10KW Roof Top Solar PV power project with State of the art Technology at Tilottama Tourism Property with allied work on LT side (WBSEDCL) in the dist. Of Jalpaiguri.	NIL (Item Rate Tender)	RS. 25,000/-	30(Thirty) Days (From the date of Layout)	Contractors/ Bonafied Resourceful agencies having experience in similar nature of work.(The eligibility criteria is stated in clause no. 5 below)
4.	SITC of 10KW Roof Top Solar PV power project with State of the art Technology at Aranya Tourism Property with allied work on LT side (WBSEDCL) in the dist. Of Alipurduar.	NIL (Item Rate Tender)	RS. 25,000/-	30(Thirty) Days (From the date of Layout)	Contractors/ Bonafied Resourceful agencies having experience in similar nature of work.(The eligibility criteria is stated in clause no. 5 below)

- 1) In the event of e-filling, intending bidder may download the tender documents from the website <http://wbtdenders.gov.in> directly with the help of Digital Signature Certificate. Necessary Earnest Money has to be deposited by the bidder through the following payment mode as per Memorandum of Finance Department vide No. 3975- F (Y) dated 28<sup>th</sup> July, 2016.
  - i. Net banking (any of the banks listed in the ICICI Bank Payment gateway) in case of payment through ICICI bank payment gateway.
  - ii. RTGS/ NEFT in case of offline payment through bank account in any bank.
- 2) Both **Technical Bid** and **Financial Bid** are to be submitted concurrently duly digitally signed in the website <http://wbtdenders.gov.in>

Seal and Signature of the Tenderer

- 3) Tender documents may be downloaded from website and submission of Technical Bid and Financial Bid will be done as per Time Schedule stated in clause mention as here under.
- 4) The **FINANCIAL OFFER** of the prospective tenderer will be considered only if the **TECHNICAL BID** of the tenderer is found qualified by the 'Tender Evaluation Committee' formed by the Managing Director, WBTDCL. The decision of the 'Tender Evaluation Committee' will be final and absolute in this respect. The list of Qualified Bidders will be displayed in the website.

5) **Eligibility criteria for participation in the tender.**

- i) a. The prospective bidders shall have satisfactorily completed **similar nature work as a prime agency** during the **last 3 (Three) years** from the date of issue of this Notice at least one work of similar nature under authority of State / Central Government, State / Central Government undertaking / Statutory Bodies Constituted under the Statute of the Central / State Government at least in the magnitude of **40% (Forty percent)** of the amount put to tender and as per G.O.
- b. Intending tenderers should produce credentials of **2 (two) similar nature of work**, each of the minimum value of **30% (Thirty Percent)** of the estimated amount put to tender during **3 (Three) years** prior to the date of issue of the tender notice.
- c. Intending tenderers should produce credentials of one single running work of similar nature (which has been completed to the extent of **80% or more** and value of which is not less than the desired value at (i) above; In case of running works, only those tenderers who will submit the certificate of satisfactory running work from the concerned Superintending Engineer (North), or equivalent competent authority will be eligible for the tender. In the required certificate it should be clearly stated that the work in progress satisfactorily and also that no penal action has been initiated against the executed agency, i.e., the tenderer.

**Similar nature of work covers:**

Manufacture/Procurement, supply and delivery of all the materials like PV Module, Module Mounting Structure, Grid Connected Inverters, Array Junction Boxes, Inverter LT Panel, Grid Interfacing LT Panel, Web based monitoring system Weather Monitoring System, Cables, System protection and other accessories conforming to the Technical Specification as required for successful Design & Engineering , Testing & installations commissioning of roof top on Grid connected Solar PV Power Plants of at least one array capacity upto 10 kWp as per MNRE specification including 3 (Three) years comprehensive maintenance & who have Satisfactorily completed as a prime agency during the last 3 (Three) years from the date of issue of this NIT under authority of State/Central Government, State/Central Government undertaking, Statutory Bodies Constituted under the statute of the Central/State Government or in Private Organization at least in the magnitude of 40% (forty percent) of the amount put to tender.

Bidder have to mandatorily submit proof regarding successfully installation commissioning of one Rooftop Grid connected solar PV Power Plant as per MNRE specification as per Financial capability.

Bidder has to mandatorily submit Test Certificate for Solar Roof top grid System from a MNRE Authorized Testing Centre. (Test Certificate should have been issued on or after 1st January 2013).

Shall have to submit authorization of Solar PV manufacturer / solar inverter with the tender as per approved make of WBTDCL. **(On Non judicial stamp paper and duly notarized)**

**N.B.:- Estimated amount, Date of Completion of project and detail communicational address of client must be indicated in the Credential Certificate.**

- ii) Income Tax Acknowledgement Receipt for the latest Assessment year, P.T. Deposit Challan for the year 2020-2021, Pan Card, GST certificate with latest return, are to be accompanied with the Technical Bid Documents.
- iii) The prospective bidders or any of their constituent partner shall neither have abandoned any work nor any of their contract have been rescinded during the last 5 (*five*) years. Such abandonment or rescission will be considered as disqualification towards eligibility. (A declaration in this respect through affidavit has to be furnished by the prospective bidders without which the Technical Bid shall be treated as non-responsive.)
- iv) The prospective bidders shall have in their full time engagement experienced technical personnel, the minimum being one Electrical engineering Degree/Diploma holder ( Authenticated document shall be furnished).

Seal and Signature of the Tenderer

- v) The available Bid capacity (to be calculated on the basis of prescribed format) of the prospective applicant shall not be less than the estimated amount put to tender.
- vi) In case of Proprietorship, Partnership Firms and Company, and Co-Operative, Tax Audit Report in **3CD Form** are to be furnished last 3 (Three) Years along with the Balance Sheet and Profit and Loss Account, and all the documents along with schedules forming the part of Balance Sheet and Profit & Loss Account should be in favour of applicant. No other name along with applicant's name in such enclosure will be entertained.
- vii) The prospective bidders should own or arrange through lease hold registered agreement, the required plant and machineries. Conclusive proof of ownership in favour of owner or leaser of plant and machineries in working condition shall have to be submitted. (Ref. Section – B, Form –IV)
- viii) Registered Partnership Deed for Partnership Firm only along with Power of Attorney is to be submitted. The company shall furnish the Article of Association and Memorandum.
- ix) Registered Labour Co-operative Societies and unemployed Co-Operative societies are required to furnish valid Bye Law, last three years statutory Audit Report authenticated by A.R.C.S., Minutes of last A.G.M. , valid certificate from A.R.C.S. along with other relevant supporting papers.
- x) Joint Ventures will not be allowed.**
- xi) A prospective bidder shall be allowed to participate in a particular job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job, all his applications will be rejected for that job, without assigning any reason thereof.
- [Non-statutory documents]*
- 6) Running payment for work may be made to the executing agency as per availability of fund. The executing agency may not get a running payment unless the gross amount of running bill is 20% of the tendered amount.
- 7) **No mobilization advance and secured advance will be allowed.**
- 8) **Security Deposit:**  
Retention money towards performance Security amounting to 10% (*ten percent*) of the value of the work shall be deducted from the running account bill of the tenderer as per prevailing order. No interest will be paid on Security Deposit.
- 9) Agencies shall have to arrange land for erection of Plant & Machineries, storing of materials, labour shed, laboratory etc. at their own cost and responsibility.
- 10) All materials required for the proposed work shall be of specified grade and approved brand inconformity with relevant code of practice (latest revision) and manufactured accordingly and shall be procured and supplied by the agency at their own cost including all taxes. Authenticated evidence for purchase of materials are to be submitted along with challan and test certificate. If required by the Engineer-in-Charge, further testing from any Government approved Testing Laboratory shall have to be conducted by the agency at their own cost.
- 11) Constructional Labour Welfare CESS @ 1% (*one percent*) of cost of construction will be deducted from every Bill of the selected agency.
- 12) **There shall be no provision of Arbitration.**
- 13) Bid shall remain valid for a period not less than 120 (*one hundred twenty*) days from the last date of submission of Financial Bid / Sealed Bid. If the bidder withdraws the bid during the validity period of bid, the earnest money as deposited will be forfeited forthwith without assigning any reason thereof.

Seal and Signature of the Tenderer.

14) Date and Time Schedule:

Sl. No.	Particulars	Date & Time
1	Date of uploading of N.I.T. Documents (online) (Publishing Date)	15.12.2021 - 10.30 Hrs,
2	Documents download/sell start date (Online)	15.12.2021 - 11.00 Hrs,
3	Documents download/sell end date (Online)	28.12..2021 - 17:00Hrs
4	Bid submission start date (On line)	15.12.2021 - 11.00 Hrs
5	Bid Submission closing (On line)	28.12..2021 - 17:00Hrs
6	Bid opening date for Technical Proposals (Online)	31.12.2021 - 11:30Hrs

15) The Prospective Bidder shall have to execute the work in such a manner so that appropriate service level of the work is maintained during progress of work and a period of **3 (three) years** to be made from the date of successful completion of the work to the entire satisfaction of the Engineer-in-Charge. If any defect / damage is found during the period as mentioned above, the contractor shall make the same good at his own cost to the specification at par with instant project work. On failure to do so, penal action against the contractor will be imposed by the Corporation as deem fit. The contractor may quote his rate considering the above aspect.

**Refund of Security Deposit** will only be made after successful maintaining of appropriate service level of the work as mentioned above **3 (three) years** from the date of completion of the work. The word ‘work’ means and includes road work, bridge work, building work, sanitary and plumbing work, electrical work and/ or any other work contemplated within the scope and ambit of this contract. The work may be of original or special repair in nature or a combination thereof, or of original or special repair in nature in combination with the work (s) or repair and /or maintenance in nature; Provided that in respect of the work of repair or maintenance in nature or a combination thereof, the words three years wherever appearing in this clause shall be deemed to in which case the security deposit of the contractor held with the Government under the provision of Clause 1 hereof shall be refundable to the contractor on expiry of one year after the issuance of certificate of completion of work by the Engineer-in-Charge.

16) The Security deposit of the contractor shall not be refunded before the expiry of **3(three) years** after the issuance of the certificate, final or otherwise, or completion of work by the Engineer-in-Charge; Provided that the work shall not be deemed to have been completed unless the **“Final Bill”** in respect thereof shall have been passed and certified for payment by the Engineer-in- Charge. Provided further that the Engineer-in-charge shall pass the **“Final Bill”** and certify thereon, within a period of **forty five** days with effect from the date of submission thereof by the contractor, the amount payable to the contractor under this contract and shall also issue a separate certificate of completion of work to the contractor within the said period of **forty five** days. The certificate of Engineer-in-charge whether in respect of the amount payable to the contractor against the “Final Bill” or in respect of completion of work shall be final and conclusive against the contractor.

However, the security deposit of the contractor held with the Corporation under the provision of **Cluase-1** hereof shall be refundable to the contractor in the manner provided hereunder:-

- (i) **30%** of the security deposit shall be refunded to the contractor or expiry of one year after issuance of certificate of completion of work.
- (ii) Further **30%** of the security deposit shall be refundable to the contractor of expiry of **Two years.**
- (iii) The balance **40%** of the security deposit shall be refunded to the contractor on expiry of **Three years.**

**No interest would be paid on the Performance Security Deposit.**

Seal and Signature of the Tenderer

- 17) Site of work and necessary drawings may be handed over to the agency phase wise. No claim in this regards will be entertained.
- 18) The Bidder, at his own responsibility and risk is encouraged to visit and examine the site of works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the work as mentioned in the Notice Inviting Tender, before submitting offer with full satisfaction, the cost of visiting the site shall be at his own expense.
- 19) The intending Bidders shall clearly understand that whatever may be the outcome of the present invitation of Bids, no cost of Bidding shall be reimbursable by the WBTDC. The Managing Director, WBTDC Ltd. or concern authority reserves the right to accept or reject any offer without assigning any reason whatsoever and is not liable for any cost that might have been incurred by any Tenderer at the stage of Bidding.
- 20) Refund of EMD: The Earnest Money of all the unsuccessful tenderers deposited in favour of the WBTDC will be refunded on receipt of application from tenderers.
- 21) Prospective applicants are advised to note carefully the minimum qualification criteria as mentioned in ‘**Instructions to Bidders**’ stated in Section – ‘A’ before tendering the bids.
- 22) **Conditional / Incomplete tender will not be accepted under any circumstances.**
- 23) **The intending tenderers are required to quote the rate online.**
- 24) Contractor shall have to comply with the provisions of (a) the contract labour (Regulation Abolition) Act.1970(b) Apprentice Act.1961 and (c) minimum wages Act.1948of the Notification thereof or any other laws relating thereto and the rules made and order issued there under from time to time. Guiding Schedule of Rates: Rates have been taken from PWD (W.B.) Schedule of Rates for Electrical Works Volume–I November-2017 along with up-to-date corrigendum & amendment approved rates of the Managing Director Of W.B.T.D.C Ltd.
- 25) During scrutiny, if it comes to the notice of the tender inviting authority that the credential or any other paper found incorrect / manufactured / fabricated, that bidder would not be allowed to participate in the tender and that application will be rejected without any prejudice.
- 26) The Managing Director Of W.B.T.D.C Ltd. or concern authority reserves the right to cancel the N.I.T. at any stage before issuance of latter of acceptance due to unavoidable circumstances and no claim in this respect will be entertained.
- 27) If there be any objection regarding prequalifying the Agency that should be lodged to the Chairman of Tender Evaluation Committee within **2 (two) days** from the date of publication of list of qualified agencies and beyond that time schedule no objection will be entertained by the Tender Evaluation Committee. Before issuance of the WORK ORDER, the tender inviting authority may verify the credential and other documents of the lowest tenderer if found necessary. After verification if it is found that the documents submitted by the lowest tenderer is either manufactured or false in that case work order will not be issued in favour of the said Tenderer under any circumstances.
- 28) If any discrepancy arises between two similar clauses on different notification, the clause as stated in later notification will supersede former one in following sequence:
  - 1) N.I.T.
  - 2) Special Terms & Conditions.
  - 3) Technical Bid.
  - 4) Financial Bid.
  - 5) Qualification criteria.
  - 6) P.W.D schedule of rates.
  - 7) Tender Form.

Seal and Signature of the Tenderer

- 29) The tender inviting and Accepting Authority through a “Tender Evaluation Committee” will determine the eligibility of each bidder. The bidders shall have to meet all the minimum criteria regarding:
- 1) Financial Capacity.
  - 2) Technical Capability comprising of personnel & equipment capability.
  - 3) Experience /Credential.
- The eligibility of a bidder will be ascertained on the basis of the document(s) in support of the minimum criteria as mentioned above and the declaration executed through prescribed affidavit in non-judicial stamp paper of appropriate value duly notarized. If any document submitted by a bidder is either manufactured or false, in such cases the eligibility of the bidder / tenderer will be rejected at any stage without any prejudice
- 30) Escalation of Price on any ground and consequent cost overrun shall not be entertained under any circumstances. Rates should be quoted accordingly.
- 31) **No price preference and other concession will be allowed.**
- 32) “Where an individual person holds a digital certificate in his own name duly issued to him against the company or the firm of which he happens to be a director or partner, such individual person shall, while uploading any tender for and on behalf of such company or firm, invariably upload a copy of registered power of attorney showing clear authorization in his favour, by the rest of the directors of such company or the partners of such firm, to upload such tender. The power of attorney shall have to be registered in accordance with the provisions of “the Registration Act, 1908.”

Sd/-

Superintending Engineer (North)  
West Bengal Tourism Development Corporation Limited

Memo. No. 250/Computer No: 349690/File No: WBTDC-14099(13)/4/2021-TA (WBTDC)-WBTDC

Dated: -01.12.2021

Copy forwarded for information to:-

1. The Managing Director, WBTDC, Kolkata.
2. The General Manager-1, WBTDC, Kolkata.
3. The General Manager-2, WBTDC, Kolkata.
4. The General Manager (F&A), WBTDC, Kolkata.
5. The General Manager (N), WBTDC, Siliguri.
6. The Executive Engineer, WBTDC, Kolkata.
7. The Assistant Engineer, WBTDC, Siliguri.
8. The Publicity-1, Kolkata with request for publishing the NIT in Daily News Paper as per G.O.
9. Sri Ratan Debnath, DBA, Tourism Center, WBTDC, Kolkata with request to upload to in [www.wbtcd.com](http://www.wbtcd.com) website.
10. Office Copy.

Sd/-

Superintending Engineer (North)  
West Bengal Tourism Development Corporation Limited

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**SECTION - A**

**INSTRUCTION TO BIDDERS**

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**General guidance for e-Tendering:**

Instructions / Guidelines for electronic submission of the tenders have been annexed for assisting the contractors to participate in e-Tendering.

i. Registration of Contractor:

Any contractor willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement System, through logging on to <http://wbtenders.gov.in> The contractor is to click on the link for e-Tendering site as given on the web portal.

ii. Digital Signature certificate(DSC):

Each contractor is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount. Details are available at the Web Site stated in Clause A.1. above. DSC is given as a USB e-Token.

iii. The contractor can search & download N.I.T. & Tender Document(s) electronically from computer once he logs on to the website mentioned in Clause A.1. Using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

iv. Participation in more than one work:

A prospective bidder shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job all his applications will be rejected for that job.

v. Submission of Tenders:

Tenders are to be submitted through online to the website stated in Clause A.1. in two folders at a time for each work, one in Technical Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents are to be uploaded virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

**Technical Proposal:**

The Technical proposal should contain scanned copies of the following in two covers (folders).

**(a). Statutory Cover Containing the following documents:**

i. Prequalification Application (Sec-B, Form –I)

1) Tender Form & N.I.T. (*download properly and upload the same Digitally Signed*). **The rate will be quoted in the B.O.Q.** Quoted rate will be encrypted in the B.O.Q. under Financial Bid. **In case quoting any rate in Tender Form, the tender is liable to be summarily rejected.**

2) NIT with Special terms & conditions and specification of works.

Seal and Signature of the Tenderer

**(b). Non-statutory Cover Containing the following documents:**

- i. Professional Tax (P.T.) deposit receipt challan for the financial year 2020-21, Pan Card, IT Return for the Assessment year 2020-21, GST certificate with latest return.
- ii. Registration Certificate under Company Act. (If any).
- iii. Registered Deed of partnership Firm / Article of Association & Memorandum.
- iv. Power of Attorney (For Partnership Firm / Private Limited Company, if any).
- v. Statutory audit report or Tax Audited Report in 3 CD/ 3 CA form along with Balance Sheet & Profit & Loss A/c. for the last 3 (*Three*) years (year just preceding the current Financial Year will be considered as year –I)
- vi. Clearance Certificate for the Current Year issued by the Assistant Register of Co-Operative Society (ARCS), bye laws are to be submitted by the Registered Labour Co-Operative Society / Engineers' Co-Operative Society.
- vii. List of machineries possessed by own / arranged through lease hold agreement along with authenticated copy of invoice, challan & way bill [Ref.:- Sl. No. 5(vii) of this N.I.T. and (Section –B, Form IV)]
- viii. List of Technical staffs along with structure & organization (Section – B, Form –III).
- ix. Financial Statement (Section – B, Form –II).

The prospective bidders shall have satisfactorily completed **as a prime agency** during the last 3 (*Three*) years from the date of issue of this Notice at least one work of similar nature under authority of State / Central Government, State / Central Government undertaking / Statutory Bodies Constituted under the Statute of the Central / State Government at least in the magnitude of 40% (*Forty percent*) of the amount put to tender.

[Ref. Sl. No. 5(i) of this NIT and (Section – B, Form – V)]. Scanned copy of Original Credential Certificate as stated in Sl. No. 5.(i). of N.I.T. shall have to submit (online).

- x. Affidavits (Ref:- format for general affidavit shown in “X” , “Y” & ‘Z” Section -B)
- xi. Certificate of revolving line of credit by the Bank (if required).
- xii. The electrical items the bidders must have valid **Electrical Contractors' License** with full time engagement of an **Electrical Supervisor Competency on the parts 1, 2, 3, 6(A), 6(B), 7(A), 7(B), 10, 11 & 12 Certificate of competency** (Self Attested scan copy of valid “Electrical Contractors' License,” “Supervisors' Certificate of Competency” and authentic Notarized document regarding engagement of Electrical Supervisors as submitted to the licensing board, “Govt. of West Bengal” require in Non-Statutory document).
- xiii. Works related to the electrical item is to be executed through authorized supervisory License Holder issued by Chief Electrical Inspector. Requisite paper also to be uploaded at the time of submission of bid. Prospective tenderers must have sufficient credentials to participate in the tender. (Electrical Works) as per the NIT criteria.

N.B.: Failure of submission of any of the above mentioned documents as stated in Sl. No. A.5 may render the tenderer liable to be rejected for both statutory & non statutory cover.

Sd/-

Superintending Engineer (North)  
West Bengal Tourism Development Corporation Limited

Seal and Signature of the Tenderer



**THE ABOVE STATED NON-STATUTORY/TECHNICAL DOCUMENTS  
SHOULD BE ARRANGED IN THE FOLLOWING MANNER**

Click the check boxes beside the necessary documents in the My Document list and then click the tab “Submit Non Statutory Documents” to send the selected documents to Non-Statutory folder.

Next Click the tab “Click to Encrypt and upload” and then click the “Technical” Folder to upload the Technical Documents.

Sl. No	Category Name	Sub-Category Description	Detail(s)
A.	Certificate(s)	Certificate(s)	a. GSTIN Certificate with Latest Challan. b. PAN. c. Professional Tax Certificate with deposit receipts Challan Latest. d. IT-Saral for Assessment year Latest. e. OEM authorization for 10 KW Solar PV power project along with Test Certificate & 3 years warranty declaration. f. Electrical Contractors’ License with full time engagement of an Electrical Supervisor Competency on the parts 1, 2, 3, 6(A), 6(B),7(A), 7(B),10, 11 & 12 by concern authority.
B.	Company Detail(s)	Company Details (Participant should have their registered or full functioning branch office in west bengal for minimum last two years and for which they have to submit the relevant documents to proof the same in the tender.)	a. Proprietorship Firm ( <i>Trade License</i> ) b. Partnership Firm ( <i>Partnership Deed, Trade License</i> ) Ltd. c. Company ( <i>Incorporation Certificate, Trade License</i> ) d. Co-Operative Society ( <i>Society Registration Copy, Trade License, Audit report</i> ) Power of Attorney. Authorized dealer or Channel partner of respective OEM.
C.	Credential	Credential (As per Clause no-5)	Prescribed type of work (i.e. On Grid Solar System) done & completion certificate from competent authority which is applicable for eligibility in this tender. (Original Scanned copy of Credential Certificate) during the last 3 (three) years.
D.	Man Power	Technical Personnel	List of Technical Staffs along with Structures & Organization ( <i>as per N.I.T. Form No. III</i> )
E.	Declaration(s)	Declaration(s)	Fill-up all the details with Seal and signature for Section-B ; Form NO.- I to V and Affidavit “X”, ”Y”& “Z”

i. Tender Evaluation Committee (TEC)

1. Opening of Technical Proposal:

Technical proposals will be opened by The Superintending Engineer (North), WBTDCL. And his authorized representative electronically from the website using their Digital Signature Certificate (DSC).

2. Intending tenderers may remain present if they so desire.

3. Cover (folder) for Statutory Documents will be opened first and if found in order, cover (folder) for Non-Statutory Documents will be opened. If there is any deficiency in the Statutory Documents the tender will summarily be rejected.

4. Decrypted (transformed into readable formats) documents of the non-statutory cover will be downloaded & handed over to the Tender Evaluation Committee.

5. Summary list of technically qualified tenderers will be uploaded online.

- 6. Pursuant to scrutiny & decision of the Tender Evaluation Committee the summary list of eligible tenderers & the serial number of work for which their proposal will be considered will be uploaded in the web portals.
- 7. During evaluation the committee may summon of the tenderers & seek clarification / information or additional documents or original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

**ii. Financial Proposal**

- I. The financial proposal should contain the following documents in one cover (folder) i.e. Bill of Quantities (BOQ). The contractor is to quote the rate (Presenting Above / below / at per) online through computer in the space marked for quoting rate in the BOQ.
- II. Financial capacity of abider will be judged on the basis of working capital and available bid capacity as mentioned in the N.I.T. to be derived from the information furnished in FORM-I&II (Section-B) i.e., Application for Pre-qualification & Financial Statement. If an applicant feels that his/their Working Capital beyond own resource may be insufficient, he / they may include with the application a letter of guarantee issued by a nationalized bank / authorize bank of RBI to supplement the applicant. This letter of guarantee should be addressed to the Tender Inviting/Accepting Authority and should guarantee duly specifying the name of the project that in case of contract is awarded to the Bidder, the Bidder will be provided with a revolving line of credit. Such revolving line of credit should be maintained until the works are taken over by the Engineer-in-Charge/Employer. The audited Balance sheet for the last **3(three) years**, net worth, bid capacity, etc. are to be submitted which must demonstrate the soundness of Bidder's financial position, showing long term profitability including an estimated financial projection of the next two years.
- III. Only downloaded copies of the above documents are to be uploaded virus scanned & Digitally Signed by the contractor.
- IV. Penalty for suppression / distortion off acts:
  - a. If any tenderer fails to produce the original hard copies of the documents like Completion Certificates and any other documents on demand of the Tender Evaluation Committee within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies, it may be treated as submission of false documents by the tenderer and action may be referred to the appropriate authority for prosecution as per relevant IT Act.
- V. Rejection of Bid:
  - a. Employer reserves the right to accept or reject any Bid and to cancel the Bidding processes and reject all Bids at any time prior to the award of Contract without  
  
Thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for Employer's action.
- VI. Award of Contract:
  - a. The Bidder who's Bid has been accepted will be notified by the Tender Inviting & Accepting Authority through **acceptance letter / Letter of Acceptance.**
  - b. The notification of award will constitute the formation of the Contract.
  - c. The Agreement in Tender From will incorporate all agreements between the Tender Accepting Authority and the successful bidder. All the tender documents including N.I.T. & B.O.Q. will be the part of the contract documents. After receipt of Letter of Acceptance, the successful bidder shall have to submit requisite copies of contract documents duly purchased from the office of the WBTDCL as stated in concerned.

SECTION – B

FORM – I

PRE-QUALIFICATION APPLICATION

To  
The Superintending Engineer (North)  
West Bengal Tourism Development Corporation Limited

Ref : Tender for (Name of work):-

e-N.I.Q. No.: 38/WBTDCL/ SE (North) OF 2021-22 dated 01.12.21

Dear Sir,

Having examined the Statutory, Non-statutory & N.I.T. documents, I /we hereby submit all the necessary information and relevant documents for evaluation.

The application is made by me / us on behalf of

.....  
in the capacity

.....  
duly authorized to submit the order.

The necessary evidence admissible by law in respect of authority assigned to us on behalf of the group of firms for Application and for completion of the contract documents is attached herewith.

We are interested in bidding for the work(s) given in Enclosure to this letter.

We understand that:

- 1) Tender Inviting & Accepting Authority / Engineer-in-Charge can amend the scope & value of the contract bid under this project.
- 2) Tender Inviting & Accepting Authority / Engineer-in-Charge reserve the right to reject any application without assigning any reason.

**Enclosure(s): e-Filing:-**

- 1) Statutory Documents.
- 2) Non Statutory Documents.

Date:

Signature of applicant including title and capacity in which application is made.

**SECTION – B**

**FORM – II**

**FINANCIAL STATEMENT**

B. 1 Name of Applicant:

B. 2 Summary of assets and liabilities on the basis of the audited financial statement of the last **03 (three)** financial years.

(Attach copies of the audited financial statement of the last three financial years)

	Year (Rs. in lakh)	Year (Rs. in lakh)	Year (Rs. in lakh)
(a) Current Assets: (It should not include investment in any other firm)			
(b) Current liabilities: (It should include bank overdraft)			
(c) Working capital : (a) – (b)			
(d) Net worth : (Proprietors Capital or Partners Capital or Paid up Capital + Resource & surplus)			
(e) Bank Loan / Guarantee :			

Seal and Signature of the Tenderer

B.3 Annual value of construction works undertaken:

Work in hand i.e. Work order issued	As on	As on	As on

Work in progress				Work order issued but work not started		
Sl. No.	Name of the work with Tender No.	Estimated Amount	% of work executed	Sl. No.	Name of the work with Tender No.	Tendered Amount

B.4 Bid Capacity:

[A.N.2 –B]

- A = Maximum value of work done in a single year during last 3 (*three*) years.
- B = Value at current price level of existing commitments and ongoing works to be completed in the next N years.
- N = Time of completion of the work in years for which tender has been invited.

**N.B.** The Audited Balance Sheet and Profit & Loss Account with all the schedules and annexure forming part of the Balance Sheet and Profit & Loss Account for the last 3(*three*) years should be given. All these Financial Statements should be signed by a competent authority for the last 3 (*three*) years.

.....  
Signed by an authorized officer of the firm.

.....  
Title of the officer

.....  
Name of the Firm with Seal

Date: .....

**SECTION – B**

**AFFIDAVIT – “X”**

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized)

Work in progress				Work order issued but work not started		
Sl. No.	Name of the work with Tender No.	Estimated Amount	% of work executed	Sl. No.	Name of the work with Tender No.	Tendered Amount

.....  
Signed by an authorized officer of the firm.

.....  
Title of the officer

.....  
Name of the Firm with Seal

Date: .....

SECTION – B

AFFIDAVIT – “Y”

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized)

- 1) I, the under-signed do certify that all the statements made in the attached documents are true and correct. In case of any information submitted proved to be false or concealed, the application may be rejected and no objection/claim will be raised by the under-signed.
- 2) The under-signed also hereby certifies that neither our firm M/S..... nor any of constituent partner had been debarred to participate in tender by the West Bengal Tourism Development Corporation Limited Department during the last 5 (five) years prior to the date of this N.I.T.
- 3) The under-signed would authorize and request any Bank, person, Firm or Corporation to furnish pertinent information as deemed necessary and/or as requested by the WBTDCL to verify this statement.
- 4) The under-signed understands that further qualifying information may be requested and agrees to furnish any such information at the request of the WBTDCL.
- 5) Certified that I have applied in the tender in the capacity of individual/ as a partner of a firm and I have not applied severally for the same job.

Signed by an authorized officer of the firm.

Title of the officer

Name of the Firm with Seal

Date:.....

SECTION – B

AFFIDAVIT – “Z”

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized)

PROFORMA FOR LEGAL BINDING AGREEMENT BETWEEN OEM AND THEIR AUTHORIZED SYSTEM INTEGRATOR

This agreement is made on ..... day of....., 2021 between .....and, a firm having it’s..... (Hereinafter called the system integrator) of the other part.

Whereas, the OEM has designed, developed and manufactured Solar PV module which is the key component to be used in Solar Power Plants.

Whereas, the System Integrator has the expertise in installation and commissioning of Solar Power Plants and desires to quote, represent and obtain order of Supply, Installation, Testing and commissioning of Solar Power Plants from WBTDCL against [Notice Inviting Tender e-NIQ no. 38/WBTDCL/SE \(North\) OF 2021-22 dated 01.12.21.](#)

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. The system integrator shall submit Performance Bank Guarantee if any as per NIT of WBTDCL and shall meet the entire Warranty related obligation as per the terms and condition of bid documents.
2. The OEM undertakes to give back to back support and ensure that the Warranty Commitments by the System Integrator would meet for the entire warranty period of 5 years.
3. The OEM assures that in the event of the system Integrator not being able to fulfil its obligation, the OEM would continue to meet the support obligation as per standard terms directly or through alternate arrangements and also provide spares for the warranty period.
4. The Original Equipment Manufacturer (OEM) shall continue to be liable for the equipments designed, supplied, installed, tested and commissioned during the warranty period in consultation with the system integrator.
5. That the material will bear ISI/MNRE accreditation laboratory Certificate.

IN WITNESS WHEREOF THE parties herein have set their hands and seals the date and year above written.

Signed on behalf of the OEM  
Designation

Signed on behalf of System Integrator  
Designation



**SECTION – B**

**FORM – III**

**STRUCTURE AND ORGANISATION**

---

- 1) Name of Applicant : \_\_\_\_\_
- 2) Office Address : \_\_\_\_\_
- 3) Name and Address of Bankers : \_\_\_\_\_
- 4) Telephone No. : \_\_\_\_\_
- 5) Fax No : \_\_\_\_\_
- 6) Attach an organization chart showing the Structure of the company with names of Key Personnel and technical Staff with Bio-data. :  
.....  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Note: Application covers Proprietary Firm, Partnership, Limited Company or Corporation.

\_\_\_\_\_  
Signature of applicant including title and capacity in which application is made.



**SECTION – B**

**FORM – V**

**Experience Profile**

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Name of the Firm:

List of projects completed that are similar in nature to the works having more than 40% (*forty percent*) of the project cost executed during the last 3(*Three*) years as per this NIT clause no. 5(i).

Name of Employer	Name, Location & nature of work	Name of Consulting Engineer responsible for supervision	Contract price in Indian Rs.	Percentage of Participation of company	Original Date of start of work	Original Date of completion of work	Actual Date of starting the work	Actual Date of completion of work	Reasons for delay in completion (if any)

Note:

- 1) Certificate from the Employers to be attached.
- 2) Non-disclosure of any information in the Schedule will result in disqualification of the firm.

.....  
Signature of applicant including title  
and capacity in which application is made.

## Special Terms and Conditions

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**1) General:**

Unless otherwise stipulated all the works are to be done as per general conditions and general specifications as mentioned either in—

- i. PWD (West Bengal) Schedule of Rates for Building Works, Sanitary & Plumbing Works and Electrical works in force including up-to-date addenda and corrigenda, if any, issued from competent authority as applicable for the working area at the time of submission of tender.

**2) Definition of Engineer-in-Charge and commencement of work:**

The word “Engineer-in-Charge” means the Superintending Engineer (North), WBTDCL. The word “Department” appearing anywhere in the tender documents mean WBTDCL. The word “approved” appearing anywhere in the documents means approved by the Managing Director Tender Issuing Authority WBTDCL. The work shall have to be taken up within **07 (seven) days** of the receipt of the work order or otherwise mentioned therein. Failure to do so will constitute a violation of the contract stipulation as regards of proportionate progress and timely completion of work and the contractor will thereby make himself liable to pay compensation or other penal action as per stipulation of the printed tender form.

**3) Terms & Conditions in extended period:**

As per Clause 5 of Tender Form if an extension of time for completion of the work is granted by the Engineer-in-Charge for cogent reasons for which the contractor have no control, it will be taken for granted by the working contractor that the validity of the contract is extended automatically upto the extended period with all terms and conditions, rates etc. remaining unaltered, i.e., the tender is revalidated upto the extended period.

**4) Co—operative with other agencies, damages and safety of road users:**

All works are to be carried out in close co-operation with the WBTDCL and other contractor(s) that may be working in the area of work. The work should also be carried out with due regard to the convenience of the road users and occupants of the adjacent locality, if any. All arrangements and programme of work must be adjusted accordingly. All precautions must be taken to guard against chances of injury or accidents to workers, road users, occupants of the adjacent locality, etc. The contractor must see that all damages to any property which, in the opinion of the Engineer-in-Charge, are due to the negligence of the contractor are promptly rectified by the contractor at his own cost and expenses and according to the direction and satisfaction of the Engineer-in-Charge.

**5) Transportation arrangement:**

The contractor shall arrange for all means of transport required for carriage and supply of materials and also the materials required for the construction work. The contractor must consider this aspect while quoting rate.

**6) Contractor’s Site Office:**

The contractor shall have an office adjacent to the work as may be approved by the Engineer-in-Charge where all directions and notice of any kind whatsoever, which the Engineer-in-Charge or his representative may desire to give to the contractor in connection with the contract, may be left or sent by post to such office or delivered to the contractor’s authorized agent or representative. For such intimation to the contractor’s site office, it shall be deemed to be sufficient enough to be served upon the contractor.

**7) Incidental and other charges:**

The cost of all materials, hire charges to tools and plants, labour, Corporation / Municipal fees for water supply, royalty for materials (if any), electricity and other charges of Municipalities or statutory local bodies, ferry charges, toll charges, loading and unloading charges, handling charges, overhead charges and other charges like Sales Tax (Central and/or State), Income Tax, Octroi Duty / Terminal Tax, Turnover Tax, GST, etc. will be deemed to have been covered by the rates quoted by the contractor. All other charges for the execution of the specified work, including supply of materials and related carriage, complete or finished in all respect upto the entire satisfaction of the Engineer-in-Charge of the work. No extra claim in this regard beyond the specified rate as per work schedule whatsoever in this respect will be entertained.

**8) Authorized Representative of Contractor:**

The contractor shall not assign the agreement or sublet any portion of the work. The contractor may however, appoint an authorized representative in respect of one or more of the following purpose only.

- 1) General day to day management of work.
- 2) To give requisition for departmental materials, Tools & Plants, etc. and to receive the same and sign hand receipts thereof.
- 3) To attend measurements when taken by the WBTDCL Officers and sign the records of such measurements which will be taken of acceptance by the contractor.

The selection of the authorised representative shall be subject to the prior approval of the Engineer-in-Charge concerned and the contractor shall in writing seek such approval of the Engineer-in-Charge giving therein the name of work, Tender No., the Name, Address and the specimen signature of the representative whom he wants to appoint and the specific purposes as specified here-in-above, for which the representative will be authorised. Even after first approval, the Engineer-in-Charge may issue at any subsequent date, revised directions about such authorised representative and the contractor shall be bound to abide by such directions. The Engineer-in-Charge shall not be bound to assign any reason for his Revised directions. Any notice, correspondences, etc. issued to the authorised representative or left at his address, will be deemed to have been issued to the contractor.

**4) Power of Attorney:**

The Provision of the power of attorney, if any, must be subject to the approval of the WBTDCL. Otherwise, WBTDCL shall not be bound to take cognizance of such power of attorney.

**5) Extension of time:**

For cogent reasons over which the contractor will have no control and which will retard the progress, extension of time for the period lost will be granted on receipt of application from the contractor before the expiry date of contract. No claim whatsoever for idle labour, additional establishment, enhanced cost of materials and labour and hire charges of tools & plants, etc. would be entertained under any circumstances. The contractor should consider the above factor while quoting his rate. Applications for such extension of time should be submitted by the contractor in the manner indicated in Clause-5 of the printed Tender form.

**6) Contractor Godown:**

The contractor must provide suitable godowns for cement and other materials including Electrical materials at the site of work. The cement godown is to be sufficient in capacity and it must be water tight with either an elevated floor with proper ventilation arrangement underneath the floor or if solid raised floor is made, cement is to be stored on bamboo or timber dunnage to the satisfaction of the Engineer-in-Charge. No separate payment will be made for these godowns

or for the store yard. Cement, which is found at the time of use to have been damaged, shall be rejected and must immediately be removed from the site by the contractor as per direction of the Engineer-in-Charge.

**7) Arrangement of Land:**

The contractor will arrange land for installation of his Plants and Machineries, his godown, store yard, labour camp etc. at his own cost for the execution of the work. WBTDCL land, if available and if applied for, may be spared for the purpose on usual charges as fixed by the Competent Authority

The contractor shall make his own arrangements for storage of tools, plant, equipment's, materials, etc. of adequate capacity and shall clear and remove on completion of work, the shed, huts, etc. which he might have erected in WBTDCL land. If after such use, the contractor failed to clear the land, WBTDCL will arrange to remove those installation and adequate recovery will be made from the dues of the contractor.

**8) Clearing of Materials:**

Before starting any work, work site, where necessary, must be properly dressed after cutting clearing all varieties of jungles, shrubs, bamboo clusters or any undesirable vegetation from the alignment or site of works. On completion of works all temporary structure or obstruction including pipes in underground work, if any, must also be removed. All scars of construction shall be obliterated and the whole site shall be left in a clear and neat manner to the satisfaction of the Engineer-in-Charge. No separate payment shall be made for all these works, the cost thereof being deemed to have been included in the rates of various items of works quoted by the contractor in the schedule of probable items of works.

**9) Sundry Materials:**

The contractor must erect temporary pillars, master pillars, etc. as may be required in suitable places as directed by the Engineer-in-Charge at his own cost before starting and during the work by which the WBTDCL staff will check levels, layout of different works and fix up alignment and the contractor shall have to maintain and protect the same till completion of the work. All machineries and equipments like Level Machine, Staff, The odalite etc. and other sundry material like, pegs, strings, nails, flakes, instruments, etc. and also skilled labour required for setting out the levels, laying out different structures, etc. shall also be supplied by the contractor as per direction of Engineer-in-Charge at his own cost.

**10) Supplementary / Additional items of Works:**

Notwithstanding the provisions made in the related printed tender form, any item of work which can legitimately be considered as not stipulated in the specific price schedule of probable items of work but has become necessary as a reasonable contingent item during actual execution of work will have to be done by the Contractor, if so directed by the Engineer-in-Charge and the rates will be fixed in the manner as stated below:-

- i) Rate of Supplementary items shall be at per with corresponding current PWD Schedule of rates / analyzed in the 1<sup>st</sup> instant extended possible from the rates of the allied items of work appearing in the tender schedule.
- ii) Rate of supplementary items shall be analyzed to the maximum extent possible from rates of the allied items of work appearing in the P.W.D. schedule of rates of probable items of work as will be in force at the time of N.I.T.
- iii) If the rates of the supplementary items cannot be computed even after application of clauses stated above, the same shall be determined by analysis from market rates of material, labour and carriage cost prevailing at the time of execution of such items of work. Profit and overhead charges (both together) @ **10% (ten percent)** will be allowed only. **The contractual percentage will not be applicable.**
- iv) Black market rates shall never be allowed.
- v) Contractual percentage shall only be applicable with regard to the portions of the analysis based on clauses C. 15 (i) and C. 15 (ii) stated above only.
- vi) It may be noted that the cases of supplementary items of claim shall not be entertained unless supported by entries in the Work Order Book or any written order from the tender accepting authority.

**11) Covered up works:**

When one item of work is to be covered up by another item of work the latter item shall not be done before the former item has been measured up and has been inspected by the Engineer-in-Charge or the Sub-Assistant Engineer, as the authorized representatives of the Engineer-in-Charge and order given by him for proceeding with the latter item of work. If this is not possible for practical reasons, the PMC, if so authorized by WBTDCCL, may do this inspection in respect of minor works and issue order regarding the latter item.

**12) Approval of Sample:**

Samples of all materials those to be supplied by the contractor and to be used in the work shall have to be approved by the Engineer-in-Charge.

**13) Water and Energy:**

The contractor shall have to arrange at his own cost the energy required for operation of equipment's and machineries, pumping set, illuminating work site, office, etc. that may be necessary in different stages of execution of work. No facility of any sort will be provided for utilization of the WBTDCCL sources of energy existing at site of work. Arrangement for obtaining water for the work should also be made by the contractor at his own cost. All cost for getting energy and / or for any purpose whatsoever will have to be borne by the contractor for which no claim will be entertained.

**14) Amenities for contractors:**

All materials, tools and plants and all labour (skilled and unskilled) including their housing, water supply, sanitation, light, procurement of food for staff & crews, medical aids, etc. are to be arranged by the contractor at his own cost. The cost of transport of labour, materials and all other incidental items as required for work shall also have to be borne by the Contractor without any extra claim from WBTDCCL.

**15) Drawings:**

All works shall be carried out in conformity with the drawings supplied by WBTDCCL. The Contractor shall have to carry out all the works according to the Detail Working Drawings to be supplied by WBTDCCL from time to time.

**16) Serviceable Materials:**

The responsibility for stacking the serviceable materials (as per decision of the Engineer-in- Charge) obtained during dismantling of existing structures/roads and handing over the same to WBTDCCL and nothing will be paid on this account. In case of any loss or damage of serviceable materials prior to handing over the same to WBTDCCL, full value will be recover from the Contractor's bill at rates as will be assessed by the Engineer-in-Charge.

**17) Unserviceable Materials:**

The Contractor shall remove all unserviceable materials, obtained during execution at place as directed. The contractor shall dressed up and clear the work site after completion of work as per direction of the Engineer-in-Charge. No extra payment will be made on this account.

**18) Contractor's risk for loss or damage:**

All risk on account of railway or road carriage or carriage by boat including loss or damage of vehicles, boats, barges, materials or labour, if any, will have to be borne by the contractor without any extra claim towards department.

**19) Idle labour & additional cost:**

Whatever may be the reason for claim on idle labour, enhancement of labour rate, additional establishment cost, cost of Toll and hire and labour charges of tools and plants, railway freight, etc. would not be entertained under any circumstances.

**20) Charges and fees payable by contractor:**

- 1) The contractor shall receive all notices and pay all fees required to be given or payable to by any statute or any regulation or by-law of any local or other statutory authority which may be applicable to the works and shall keep WBTDCL free against all penalties and liabilities of every kind for breach of such statute regulation or law.
- 2) The Contractor shall indemnify WBTDCL from and against all claims, demands, suit and proceedings for or on account of infringement of any patent rights, design, trade mark of name or other protected right in respect of any constructional plant, machine, work, materials, thing or process used for or in connection with works or temporary works or any of them.

**3) Realization of Departmental claims:**

Any sum of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the WBTDCL and set off against any claim of WBTDCL for the payment of sum of money arising out of this contract or under any other contract made by the contractor with the WBTDCL.

**4) Compliance of different Acts:**

The contractor shall comply with the provisions of the Apprentices Act, 1961, Minimum Wages Act, 1848. Contract Labour (Regulation and Abolition) Act 1970 and the rules and orders issued hereunder from time to time. If he fails to do so, Engineer-in-Charge of the work may at his discretion, take necessary measure over the contract.

The Contractor shall also make himself liable for any pecuniary liabilities arising out on account of any violation of the provision of the said Act(s). The Contractor must obtain necessary certificate and license from the concerned Registering Office under the Contract Labour (Regulation & Abolition) Act, 1970.

The contractor shall be bound to furnish the Engineer-in-Charge all the returns, particulars or date as are called for from time to time in connection with implementation of the provisions of the above Acts and Rules and timely submission of the same, failing which the contractor will be liable for breach of contract and the Engineer-in-Charge may at his discretion take necessary measures over the contract.

**5) Safety, Security and Protection of the Environment:**

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

- 1) have full regard for the safety of all persons and the Works (so far as the same are not completed or occupied by the department),
- 2) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer-in-Charge for the protection of the Works or for the safety and convenience of the public or others,
- 3) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation,
- 4) Ensure that all lights provided by the Contractor shall be screened so as not to interfere with any signal light of the railways or with any traffic or signal lights of any local or other authority.

**5) Commencement of work:**

The work must be taken up within the date as stipulated in the work order and completed in all respects within the period specified in Notice Inviting Tender.



**6) Programme of work:**

Before actual commencement of work the contractor shall submit a programme of construction of work with methodology clearly showing the required materials, men and equipment. The contractor will submit a programme of construction in the pattern of Bar Chart or Critical Path Method and a time table divided into four equal periods of progress of work to complete the work within the specific period for approval of the Engineer-in-Charge who reserves the right to make addition, alterations and substitutions to such programme in consultation with the contractor and such approved programme shall be adhered to by the contractor unless the same is subsequently found impracticable in part or full in the opinion of the Engineer-in-Charge and is modified by him. The contractor must pray in writing, showing sufficient reasons therein for modification of programme. The conditions laid down in clause 2 of the printed tender form regarding the division of total period and progress to work and the time table there for as provided in the said clause shall be deemed to have been sufficiently complied with the actual progress of work and does not fall short of the progress laid down in the approved time table for one fourth, half and three fourth of time allowed for the work.

**7) Setting out of the work:**

The contractor shall be responsible for the true and perfect setting out of the work (Electrical and Civil) and for the correctness of the position, levels, dimensions and alignments of all parts of work. If any rectification or adjustment becomes necessary the contractor shall have to do the same at his own cost according to the direction of the Engineer-in-Charge. During progress of works, if any, error appears or arises in respect of position, level, dimensions or alignment of any part of the work contractor shall at his own cost rectify such defects to the satisfaction of the Engineer-in-Charge. Any setting out that may be done or checked by either of them shall not in any way relieve the contractor of his responsibility for correctness and rectification thereof.

**8) Precautions during works:**

The contractor shall carefully execute the work without disturbing or damaging underground or overhead service utilities viz. Electricity, Telephones, Gas, Water pipes, Sewers etc. In case disturbances of service utilities is found unavoidable the matter should immediately be brought to the notice of the Engineer-in-Charge and necessary precautionary measures as would be directed by the Engineer-in-Charge shall be carried out at the cost and expenses of the contractor. If the service utilities are damaged or disturbed in any way by the contractor during execution of the work, the cost of rectification or restoration of damages as would be fixed by the Engineer-in-Charge concerned will be recovered from the contractor.

**9) Testing of qualities of materials & workmanship:**

All materials and workmanship shall be in accordance with the specifications laid down in the contract and also as per M.O.R.T. & H's specification for Road and Bridge Works (Latest Revision) and relevant IS codes and the Engineer-in-Charge reserves the right to test, examine and measure the materials/workmanship direct at the place of manufacture, fabrication or at the site of works or any suitable place. The contractor shall provide such assistance, instrument, machine, labour and materials as the Engineer-in-Charge may require for examining, measuring and testing the works and quality, weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Engineer-in-Charge without any extra cost. Besides this, he will carry out tests from outside Laboratory as per instruction of Engineer-in-Charge. The cost of all such tests shall be borne by the agency and that must be considered during quoting rate.

**10) Timely completion of work:**

All the supply and the work must have to be completed in all respects within the time specified in Notice Inviting Tender from the date of commencement as mentioned in work order. Time for completion as specified in the tender shall be deemed to be the essence of the contract.

**11) Procurement of materials:**

All materials including Electrical, cement and steel required to complete the execution of the work shall be supplied by the contractor after procurement from authorised and approved source.

**12) Rejection of materials:**

Materials brought to the site must be approved by the Engineer-in-Charge. Rejected materials must be removed by the Contractor from the site within 24 hours of the issue of order to that effect. In case of non-compliance of such order,

the Engineer-in-Charge shall have the authority to cause such removal at the cost and expense of the contractor and the contractor shall not be entitled to any claim for any loss or damage on that account.

**13) Implied elements of work in items:**

Except such items as are included in the Specific Priced Schedule of probable items and approximate quantities, no separate charges shall be paid for traffic control measures, shoring, shuttering, dewatering, curing etc. and the rates of respective items of works are to be deemed as inclusive of the same.

**14) Force Closure:**

In case of force closure or abandonment of the works by the WBTDCL the contractor will be eligible to be paid for the finished work and reimbursement of expenses actually incurred thereof by him but not for any losses.

**15) Tender Rate:**

The contractor should note that the tender is strictly based on the rates quoted by the Contractor on the priced schedule of probable item of work. The quantities for various other items of works as shown in the priced schedule of probable items of works are based on the drawing and design prepared by WBTDCL. If variations become necessary due to design consideration and as per actual site conditions, those have to be done by the contractor at the time of execution at the rate prescribed in the tender clause. **No conditional rate will be allowed in any case.**

**16) Delay due to modification of drawing and design:**

The contractor shall not be entitled for any compensation to any loss due to delays arising out of modification of the drawing, addition & alterations of specifications.

**17) Additional Conditions:**

A few additional conditions under special terms and conditions:

- 1) Rate quoted shall be inclusive of clearing site as per direction of the Engineer-in- Charge.
- 2) Rate quoted shall be inclusive of West Bengal Sales Tax, Income Tax, Octroi and all other duties, if any.
- 3) **Display board (Informatory) of size 150 cm X 90 cm** is to be provided at the work-site with aluminum plate hoisted on steel tubular pipe/angle post to a height of 1.5 Meter at the cost of the contractor including fitting, fixing, painting, lettering, etc. complete as per direction of Engineer-in-Charge.
- 4) The Contractor is to display caution board at his own cost as per direction of Engineer- in-Charge.
- 5) Deep excavation of trenches and left out for days shall be avoided.
- 6) Labour welfare CESS will be deducted @ 1% (one percent) of gross bill value as per rule.
- 7) The whole work will have to be executed as per drawings supplied in this connection at the tender rate.
- 8) Income Tax will be deducted from each bill of the contractor as per applicable rate and rules in force.
- 9) In accordance with the West Bengal Taxation Laws (amendment) Ordinance, 1993 amending the West Bengal Finance (Sales Tax) Act, 1994 necessary S.T / GST will be deducted as per rate in force from the bill in addition to other deduction as per extent rules.

**18) Special Condition:-**

- 1) Mobilization advance @ 30% (Thirty Percent) of tendered value may be given against unconditional bank guarantee from any nationalized bank is claimed.
- 2) Balance payment would be given, after completion of work.

**SECTION – D**

**Specification of Works**

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**1) General:**

The information given hereafter is without any prejudice. The intending bidders should satisfy themselves regarding the latest conditions of the site and its surroundings by personal check and investigation.

**2) Name of Work:**

As mentioned in N.I.T.

**3) Scope of Work:**

The Work shall, interalia, broadly consist of:-

- 1) Works as mentioned in specific Priced Schedule of probable items of work.

**2) Location of Worksite:**

As mentioned in N.I.T.

**3) Working condition:**

During execution of work, contractor will remain responsible for providing unhindered passage to traffic on road adjacent to site, providing lighting and guarding arrangement during night for safety and no extra cost will be paid on this account.

It is to be noted that there will not be any electrical facility at work site. Bidder should make his own arrangement for water, necessary power of lighting, welding, running of pumps etc. and the cost for such arrangement shall be deemed to have been included in the rates quoted by the bidder.

Work shall have to be executed in accordance with the rules and regulations in vogue of Government of West Bengal and local authorities.

**4) Specifications:**

Details of Specifications to be followed in the Proposed Construction are given here-in-after, in the Price Schedule.

N.B. Specifications of any item of works not covered here in above shall be guided by the PWD Schedule of Rates in force at the time of N.I.T. and latest edition of relevant Indian Standard Specifications and Codes of Practice.

In case of inadvertent typographical mistake found in specific price schedule of rates / NIT / Terms & Condition, the same will be treated to be so corrected as to conform to the relevant PWD (WB) schedule of rates of building / S&P and or Technical sanction or WBF:2911\_ii as the case may be.

Sd/-

Superintending Engineer (North)

West Bengal Tourism Development Corporation Limited.

# Technical Specification

## General Technical Specification for 10 Kwp solar PV Power Project with state of the art technology (rooftop) solar PV systems.

### 1. Introduction:-

- (i) In grid-connected solar photo-voltaic (PV) systems, solar energy is fed into the building loads that are connected to the WBSEDCL/CESC grid through a service connection with surplus energy being fed into the grid and short fall being drawn from the grid. Production of surplus energy may happen when solar energy produced exceeds the energy consumption of the building. This surplus is fed into the grid. During the night, or when during the day energy demand in the building exceeds solar energy generation, energy is drawn from the grid. Grid-connected solar PV systems have no battery storage and will not work during grid outage. For buildings with grid-connected solar PV systems, the service connection meter needs to be of the bidirectional type, whereby import kWh and export where separately recorded
- (ii) A grid-connected solar PV system consists of the solar panels, solar panels mounting structure, one or more solar grid inverters, protection devices, meters, inter connection cables and switches.
- (iii) Components and parts used in solar PV systems should conform to the BIS or IEC or other international specifications, wherever such specifications are available and applicable.

### 2. Quality and Workmanship:-

- (i) Solar PV modules are designed to last 25 years or more. It is therefore essential that all system components and parts, including the mounting structures, cables, junction boxes, distribution boxes and other parts also have a life cycle of at least 5 years. Therefore all works shall be undertaken with the highest levels of quality and workmanship. During inspection special attention will be given to neatness of work execution and conformity with quality and safety norms. Non-compliant works will have to be redone at the cost of the Installer.

### 3. System Sizing:-

As per the solar net metering orders of the West Bengal Electricity Regulatory Commission (WBSERC) of 13-11-2013, crediting of energy for the purpose of net-metering is limited to 90% of the consumed energy during a 12 month settlement period. The maximum recommended solar PV capacity for grid-connected solar PV systems is therefore a capacity that produces not more than 90% of the annual energy consumption of the building.

### 4. Certification:

PV Modules - Crystalline Silicon Terrestrial PV Modules IEC 61215 / IS14286. In addition, the modules must conform to IEC 61730 Part 1- requirements for construction & Part 2 - requirements for testing, for safety qualification or Equivalent IS. PV modules shall be suitable to be used in North Bengal areas.

#### BALANCE OF SYSTEM (BOS) ITEMS/ COMPONENTS:-

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

BOS Item /System	Applicable BIS /Equivalent IEC Standard Or MNRE Specifications	
	Standard Description	Standard Number
Charge Controller / MPPT		IEC 60068-2 (1,2,14,30) /
Units	Environmental Testing	Equivalent BIS Std.
Power Conditioners/	Efficiency Measurements	IEC 61683 / IS 61683

Inverters** including MPPT and Protections	Environmental Testing	IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std. IEC 62116
Cables	General Test and Measuring Method PVC insulated cables for working voltage up to and including 1100 V and UV resistant for outdoor Installation	IEC 60227 / IS 694 IEC 60502 / IS 1554 (Pt. I & II)
Switches/Circuit Breakers /Connectors	General Requirements Connectors –safety A.C. /D.C.	IEC 60947 part I,II, III / IS 60947 Part I,II,III EN 50521
Junction Boxes Enclosures for Inverters/Charge Controllers/Luminaries	General Requirements	IP 65(for outdoor)/ IP21(for indoor) as per IEC 529

#### 5. Specification of Solar PV Modules:-

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

Type	Crystalline silicon, Mono Perc.
Origin	Manufactured in India
Efficiency	$\geq 16\%$
Fill factor	$\geq 77\%$
Degradation warranty	Panel output ( $W_p$ ) capacity to be $\geq 90\%$ of design nominal power after 10 years and $\geq 80\%$ of design nominal power after 25years.
Module frame	Non-corrosive and electrolytic ally compatible with the mounting structure material
Termination box	Thermo-plastic, IP 65, UV resistant
Module minimum rated power	The nominal power of a single PV module shall not be less than 400 $W_p$ .
RF Identification tag for each solar module	Shall be provided inside the module and must be able to withstand environmental conditions and last the lifetime of the solar module.
RF Identification tag data	a) Name of the manufacturer of PV Module b) Name of the Manufacturer of Solar cells c) Month and year of manufacture (separately for solar cells and module) d) Country of origin (separately for solar cells and module) e) I-V curve for the module f) $W_m$ , $I_m$ , $V_m$ and FF for the module
	Certificate j) Other relevant information on traceability of solar cells and module as per ISO 9000 standard
Power output rating	To be given for standard test conditions (STC). I-V curve of the sample module shall be submitted.
Compliance with standards and codes	IEC 61215 / IS 14286 IEC 61730 Part 1 and 2

<i>Salt Mist Corrosion Testing</i>	As per IEC 61701
<i>Modules shall be PID resistance</i>	

6. Solar PV Modules Mounting Structure:-

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

(II) Detailed specifications for the mounting structure are given below:-

<i>Wind velocity withstanding capacity</i>	As per the IS of that area. STAAD Pro or any other authentic software report signed by structural engineer has to be provided.
<i>Structure material</i>	Hot dip galvanized steel with a minimum galvanization thickness of 85 microns or aluminum alloy.
<i>Bolts, nuts, fasteners, panel mounting clamps</i>	Stainless steel SS 304/316
<i>Mounting arrangement for RCC-flat roofs</i>	With removable concrete ballast made of pre-fabricated PCC (1:2:4), with concrete foundation of M25 grade.
<i>Mounting arrangement for metal sheet roofs</i>	Mounting directly on the sheet metal, ensuring stability and wind withstanding capacity, or penetrating the sheet metal and fixing to the sub- structure, ensuring that the roof remains water proof and ensuring stability and wind withstanding capacity.
<i>Mounting arrangement for elevated structures</i>	The elevated structure has to be securely anchored to the supporting surface. Concrete foundations of appropriate weight and depth for elevated structures mounted directly on the ground; Bolted with anchor bolts of appropriate strength for elevated structures mounted on RCC surfaces.
<i>Mounting arrangement for ground installations</i>	With removable concrete ballast made of pre-fabricated PCC (1:2:4), M25 grade; assuring enough ground clearance to prevent damage of the module through water, animals and other environmental factors.
<i>Installation</i>	The structures shall be designed for simple mechanical on-site installation. There shall be no requirement of welding or complex machinery at the installation site.
<i>Minimum distance between roof edge and mounting structure</i>	0.3m
<i>Access for panel cleaning and maintenance</i>	All solar panels must be accessible from the top for cleaning and from the bottom for access to the module- junction box.
<i>Panel tilt angle</i>	As per the maximum generation.( <b>22degree true south</b> )

(ii) The prospective Installer shall specify installation details of the solar PV modules and the support structures with lay-out drawings and array connection diagrams. The work shall be carried out as per the designs approved by the Customer.

7. Solar Array Fuse:

(i) The cables from the array strings to the solar grid inverters shall be provided with DC fuse protection. Fuses shall have a voltage rating and current rating as required. The fuse shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

8. Solar Grid Inverter:

(i) The solar grid inverter converts the DC power of the solar PV modules to grid-compatible AC power.

(ii) The detailed specifications of the solar grid inverter are given below.

<i>DC power input</i>	Shall be <b>more than the panel capacity in Wp.</b>
<i>Total output power (AC)</i>	To match solar PV plant capacity while achieving optimum system efficiency
<i>Input DC voltage range</i>	As required for the solar grid inverter DC input.
<i>Maximum power point(MPPT) tracking</i>	Shall be incorporated
<i>Number of independent MPPT inputs</i>	2 or more
<i>Operation AC voltage</i>	Single phase 230V or Three phase 415V (+ 12.5%, -20%)
<i>Operating Frequency range</i>	47.5 – 52.5 Hz
<i>Nominal frequency</i>	50 Hz
<i>Power factor of the inverter</i>	>0.98 at nominal power
<i>Total harmonic distortion</i>	Less than 3%
<i>Built-in Protection</i>	AC high / low voltage; AC high /low frequency
<i>Anti-islanding protection</i>	As per VDE 0126-1-1, IEC 60255.5 / IEC 60255.27
<i>Operating ambient temperature range</i>	-10 °C - +60°C
<i>Humidity</i>	0 – 95% Rh
<i>Inverter efficiency</i>	>=98.2%
<i>Inverter weighted (EURO) efficiency</i>	>=95%
<i>Protection degree</i>	IP 65 for outdoor mounting, IP 54 for indoor mounting
<i>Communication interface</i>	RS 485 / Wi-Fi
<i>Safety compliance</i>	IEC 62109-1, IEC 62109-2
<i>Environmental Testing</i>	IEC 60068-2 (1,2,14,30)
<i>Efficiency Measurement Procedure</i>	IS/IEC 61683
<i>Cooling</i>	Smart Cooling
<i>Display type</i>	LCD for data display. LCD / LED for status display
<i>Display parameters to include</i>	Output power (W), cumulative energy (Wh), DC voltage (V), DC current (A), AC voltage (V), AC frequency (Hz), AC current (A), cumulative hours of operation (h).

9. DC Combiner Box:-

- (i) A DC Combiner Box shall be used to combine the DC cables of the solar module arrays with DC fuse protection for the outgoing DC cable(s) to the DC Distribution Box.

10. DC Distribution Box if any:-

- (i) A DC distribution box shall be mounted close to the solar grid inverter. The DC distribution box shall be of the therm o-plastic IP65 DIN-rail mounting type and shall comprise the following components and cable terminations:
- (ii) Incoming positive and negative DC cables from the DC Combiner Box;
- (iii) DC circuit breaker, 2 pole (the cables from the DC Combiner Box will be connected to this circuit breaker on the incoming side);
- (iv) DC surge protection device (SPD), class 2 as per IEC 60364-5-53;
- (v) Outgoing positive and negative DC cables to the solar grid inverter.

- (vi) As an alternative to the DC circuit breaker a DC isolator may be used inside the DC Distribution Box or in a separate external thermoplastic IP 65 enclosure adjacent to the DC Distribution Box. If a DC isolator is used instead of a DC circuit breaker, a DC fuse shall be installed inside the DC Distribution Box to protect the DC cable that runs from the DC Distribution Box to the Solar Grid Inverter.

#### 11. AC Distribution Box:-

- (i) An AC distribution box shall be mounted close to the solar grid inverter. The AC distribution box shall be of the thermo plastic IP65 DIN rail mounting type and shall comprise the following components and cable terminations:

- Incoming 3-core / 5-core (single-phase/three-phase) cable from the solar grid inverter
- AC circuit breaker, 2-pole/4-pole
- AC surge protection device (SPD), class 2 as per IEC 60364-5-53
- Outgoing cable to the building electrical distribution board.

#### 12. Connection to the Building Electrical System:-

- (i) The AC output of the solar grid inverter shall be connected to the building's electrical system after the WBSEDCL/CESC service connection meter and main switch on the load side. The solar grid inverter output shall be connected to a dedicated module in the Main Distribution Board (MDB) of the building. It shall *not* be connected to a nearby load or socket point of the building. The connection to the electrical system of the building shall be done as shown in typical wiring diagram 1 in the Annexure 2.
- (ii) For buildings or loads with diesel generator back up, the wiring of the solar grid inverter shall be such that the solar grid inverter *cannot* run in parallel with the diesel generator. This implies that the solar grid inverter must be connected to a distribution board on the grid side of the automatic or manual change-over switch as shown in typical wiring diagram 2 in the Annexure 2.

#### 13. Cables:-

- (i) All cables shall be supplied conforming to IEC 60227 /IS694 & IEC 60502/ IS1554. Voltage rating: 1,100 V AC, 1,500 VDC
- (ii) For the DC cabling, XLPE or XLPO insulated and sheathed, UV stabilized single core flexible copper cables shall be used. Multi-core cables shall not be used.
- (iii) For the AC cabling, PVC or XLPE insulated and PVC sheathed single or multi-core flexible copper cables shall be used. Outdoor AC cables shall have a UV-stabilized outer sheath.
- (iv) The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.
- (v) The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%
- (vi) The DC cables from the SPV module array shall run through a UV- stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
- (vii) Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers.
- (viii) All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm. The minimum DC cable size shall be  $4.0 \text{ mm}^2$  copper. The minimum AC cable size shall be  $4.0 \text{ mm}^2$  copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires. The following colour coding shall be used for cable wires:
- (ix) DC positive: red (the outer PVC sheath can be black with a red line marking)
- (x) DC negative: black
- (xi) AC single phase: Phase: red; neutral: black
- (xii) AC three phase: Phases: red, yellow, blue ;neutral :black



- (xiii) Earth wires: green
- (xiv) Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipe sleeve.
- (xv) Cable conductors shall be terminated with tinned copper end-ferrules to prevent fraying and breaking of individual 1 wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instructions of the manufacturer, which in most cases will include the use of special connectors.

14. Earthing:

- (i) The PV module structure components shall be electrically interconnected and shall be grounded.
- (ii) Earthing shall be done in accordance with IS 3043-1986, provided that earthing conductors shall have a minimum size of 6.0 mm<sup>2</sup> copper, 10 mm<sup>2</sup> aluminium or 70 mm<sup>2</sup> hot dip galvanized steel. Unprotected aluminium or copper-clad aluminium conductors shall not be used for final underground connections to earth electrodes.
- (iii) A minimum of three separated earth electrodes and inter connected earth electrodes must be used for the earthing of the solar PV system support structure with a total earth resistance not exceeding 5 Ohm.
- (iv) The earth electrodes shall have a precast concrete enclosure with a removable lid for inspection and maintenance. The entire earthing system shall compression-corrosive components.

15. Surge Protection:

- (i) Surge protection shall be provided on the DC side and the AC side of the solar system
- (ii) The DC surge protection devices (SPDs) shall be installed in the DC distribution box adjacent to the solar grid inverter.
- (iii) The AC SPDs shall be installed in the AC distribution box adjacent to the solar grid inverter.
- (iv) The SPDs earthing terminal shall be connected to earth through the above mentioned dedicated earthing system. The SPDs shall be of type 2 as per IEC60364-5-53

16. Junction Boxes:

- (i) Junction boxes and solar panel terminal boxes shall be of the thermo plastic type with IP 65 protection for outdoor use and IP 54 protection for indoor use.
- (ii) Cable terminations shall be taken through thermo-plastic cable glands. Cable ferrules shall be fitted at the cable termination points for identification.

17. Tools, Tackles and Spares:

- (i) The Installer shall keep ready stock of tools, tackles and essential spares that will be needed for the day-to-day maintenance of the solar PV system. This shall include but not be limited to, the following:
- (ii) Screw driver suitable for the junction boxes and combiner boxes
- (iii) Screw driver and / or Allen key suitable for the connectors, power distribution blocks, circuit breaker terminals and surge arrestor terminals;
- (iv) Spanners / box spanners suitable for the removal of solar PV modules from the solar PV module support structure;
- (v) Solar panel mounting clamps;
- (vi) Cleaning tools for the cleaning of the solar PV modules;

Spare fuses

18. Caution Signs:

- (i) In addition to the standard caution and danger boards or labels as per Indian Electricity Rules, the AC distribution box near the solar grid inverter, the building distribution board to which the AC output of the solar PV system is connected and the Solar Generation Meter shall be provided with anon-corrosive caution label with the following text:

WARNING – DUAL POWER SOURCE EB & SOLAR
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- (ii) The size of the caution label shall be 105mm (width) x 20mm (height) with white letter on a red background.
- (iii) Caution labels as may be prescribed by WBSEDCL/CESC shall be fixed as per WBSEDCL/CESC specifications.

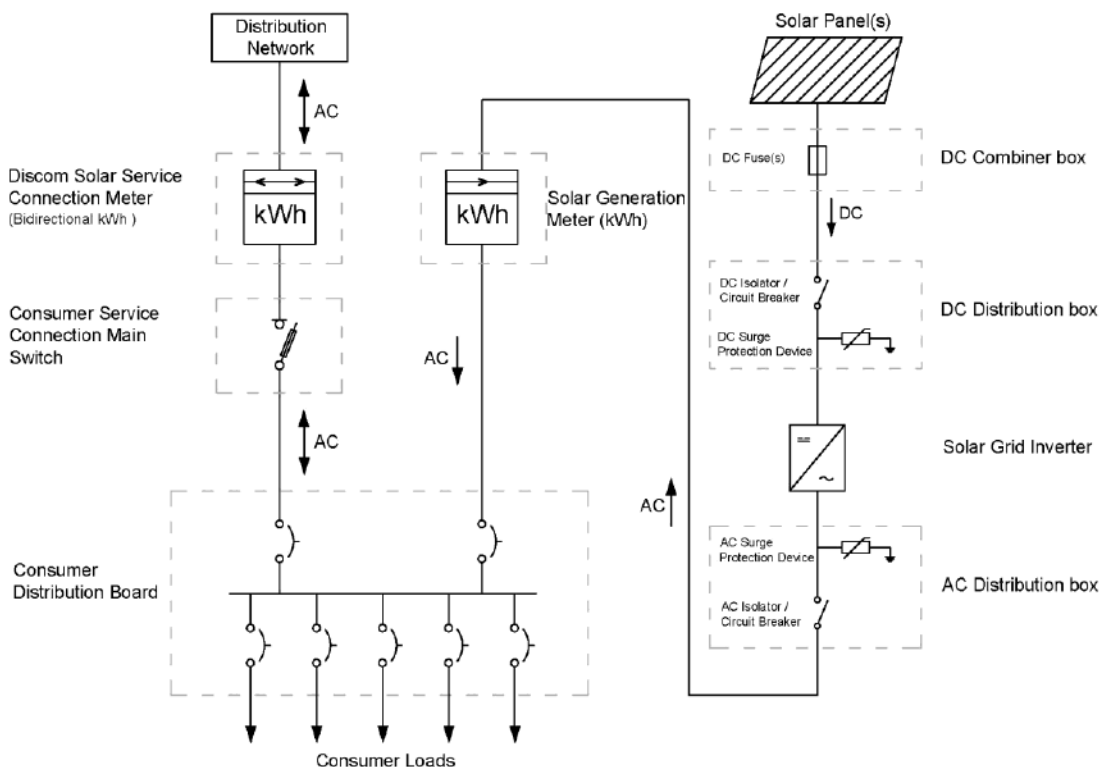
19. Metering:

- An energy meter shall be installed in between the solar grid inverter and the building distribution board to measure gross solar AC energy production (the “Solar Generation Meter”). The Solar Generation Meter shall be of the same accuracy class as the WBSEDCL/CESC service connection meter or as specified by WBSERC.
  - The existing service connection meter needs to be replaced with a bidirectional (import kWh and export kWh) service connection meter (the “Solar Service Connection Meter”) for the purpose of net-metering. Installation of the Solar Service Connection Meter will be carried out by WBSEDCL/CESC and is not in the scope of the work of the Installer.
20. Test Certificates / Reports from IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard for quoted components shall be furnished. Type Test Certificates shall be provided for the solar modules and the solar grid inverters to provide evidence of compliance with standards as specified in articles 4.0 and 7.0 of this technical Specification. Customer reserves the right to ask for additional test certificates or (random) tests to establish compliance with the specified standards.

Annexe to General Technical Specification

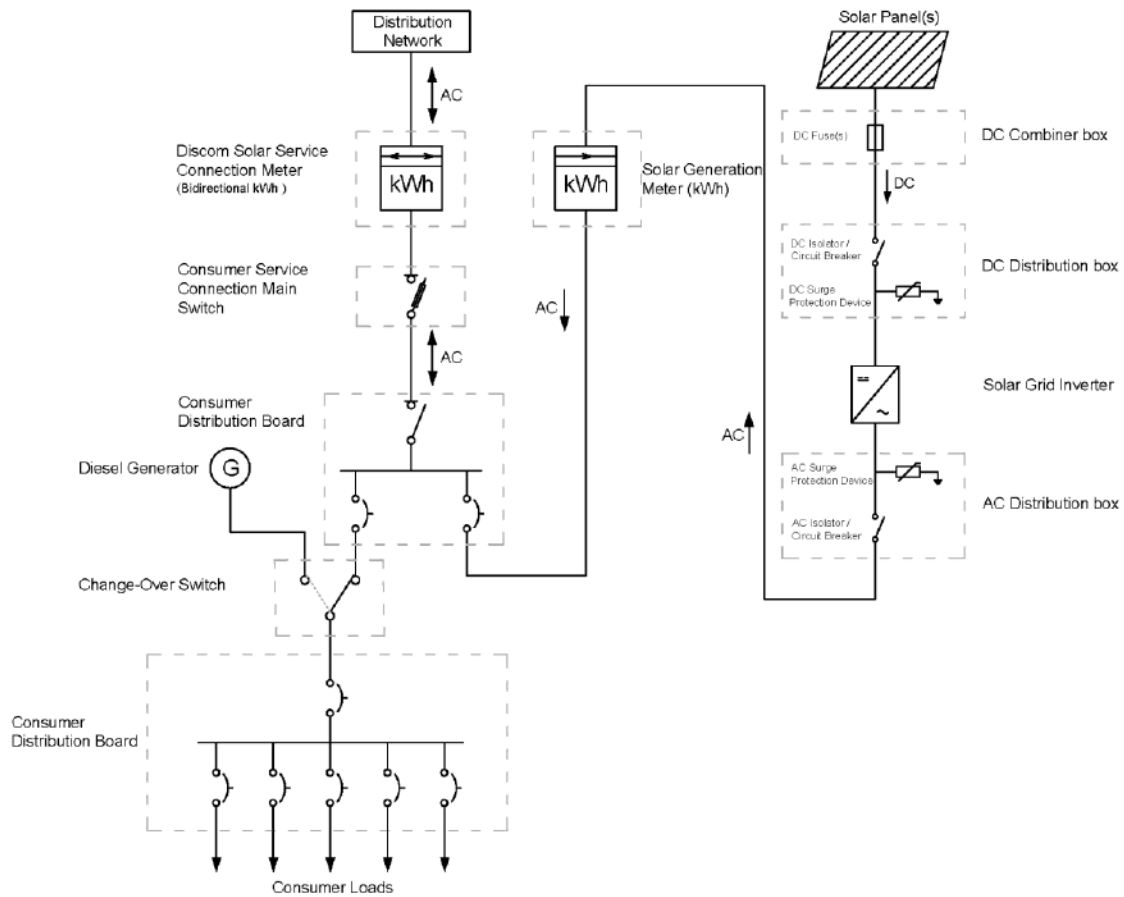
Typical Wiring Diagrams for Grid-Connected Solar System

1. Typical wiring diagram for grid-connected solar PV system *without* diesel generator.



Note: The Solar Generation Meter shown above is mandatory for consumers who avail of a generation-based incentive (GBI) and is optional for others.

2. Typical wiring diagram for grid-connected solar PV system with diesel generator.



*Note:* The Solar Generation Meter shown above is mandatory for consumers who avail of a generation-based incentive (GBI) and is optional for others.

**List of Main Equipments and Preferred Vendor:-**

List of Item	Capacity	Preferred Vendor
Solar PV panel	Each panel shall be minimum 400 Wp.	<b>TATA POWER, TOPSUN, RATTIKA, VIMAL, SOVA SOLAR, WAAREE, ADANI, Iysert, Adani, Havells or equivalent</b> As approved by Tender Inviting Authority.
Inverter	Each inverter shall be minimum of <b>10 KW</b>	DELTA , EMERSON, ABB
Structure	Shall be made with IS compliance	As per the specifications
DC cables	Shall be as per the specifications	POLYCAB, FINOLEX, KEI
DC combiner box	Shall be as per the specifications	DO
AC distribution box	As per the specification	Reputed
Surge Protection Device	As per the specification	Reputed
Meter	As per the specification	Reputed
Earthing	As per the specification: Chemical	Reputed
Lightening Arrestor	As per the IS	Reputed

**BOQ shall have be filled by the vendor:-**

<b>List of Item</b>	<b>Unit</b>	<b>Size</b>	<b>Total Capacity</b>
Solar PV panel			
Inverter			
Structure			
DC cables : Aray to Aray:			
DC cables Aray to Array JB or DC combiner box			
DC cables from DC combiner box to Inverter			
AC cable from Inverter to ACDB			
AC cable from ACDB to Grid			
Earthing Cable or wire from Panel Structure to Earth			
Earthing Cable or wire from DC combiner box to to Earth			
Earthing Cable or wire from Inverter to to Earth			
DC combiner box			
AC distribution box (ACDB)			
Surge Protection Device			
Meter			
Earthing			
Lightening Arrestor			

Seal and Signature of the Tenderer