



# **VADODARA MUNICIPAL CORPORATION**

**TENDER BID FOR DESIGN, ENGINEERING, SUPPLY AND PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION AND MAINTENANCE FOR A PERIOD OF TEN YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG. (Re-Invite)**

## **PART – I**

## **TECHNICAL BID**

**Bid No: [VMC/SL/SETC/SOLAR/2026-27]**

**OFFICE OF THE EXECUTIVE ENGINEER (ELECTRICAL)  
STREET LIGHT DEPARTMENT  
VADODARA MUNICIPAL CORPORATION  
VADODARA  
GUJARAT STATE**

**JUNE - 2026**

## **TENDER NOTICE**



### **VADODARA MUNICIPAL CORPORATION.**

OFFICE: Khanderao Market Building, Rajmahal Road, Vadodara-390001.

#### **E-TENDER NOTICE**

Vadodara Municipal Corporation invites tender in two parts (Technical Bid & Price Bid) from registered Contractors in appropriate class either with VMC, Central/ State/ PWD/ M.E.S./ Semi Government or other such institutions for the TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite) Throughon line e-tendering system.

Estimated cost (In Rs.)	Completi on Period	E.M.D Rs.	Tender fee Rs.	Stamp DutyRs.	Downloading onlinetender Documents from.	Last Date for Online Submission of Completed Tender Documents.
					Date/Time	Date/Time
Rs, 29,96,135/-	60 Days	Rs.60,000/-	4000/-	As per rule	21.06.2026 to 08.07.2026up to 11:00 hrs.	08.07.2026 up to 13:00 hrs

- (1) The tender bid document will be available and downloaded from [www.tender.n procure.com](http://www.tender.n procure.com) website  
(2) Tender document should be accepted only by E-tendering method on [www.tender.n procure.com](http://www.tender.n procure.com) website  
(3) Conditional tender shall not be accepted. If any condition in the price bid is found, the tender will liable to be rejected. (4)Hard copy of Pre-qualification bid along with EMD & tender fee shall be submitted by Registered A.D. / Speed Post only & should be addressed to Executive Engineer, Street light department, Room No.202, Vadodara Municipal Corporation, Khanderao Market Building, Rajmahal Road, Vadodara-390001 till dt.10.07.2026 up to 16:00 hrs. (5) The Advertisement is also available on Website of Vadodara Municipal Corporation. (6) VMC reserves the right to accept or reject any or all tenders without assigning any reason thereof. (7) This Tender notice shall form a part of contract document.

**PRO No. / 2026-27**

**Deputy Municipal commissioner**

Visit us at : [www.vmc.gov.in](http://www.vmc.gov.in)

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**INVITATION FOR BID**  
**(IFB)**

## **NATIONAL COMPETITIVE BIDDING**

1. The Executive Engineer, Streetlight Department, Vadodara Municipal Corporation invites bids for the works detailed in the table.

The bidders may submit bids for the following works.

**TABLE**

Packag e No.	Name of work	Approximate value of works (Rs.)	Bid security (Rs.)	Cost of document	Period of completion	#Class of Registration / Category of contractor if required
1	2	3	4	5	6	7
<b>1.0</b>	TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)	Rs. 29,96,135/-	Rs. 60,000/-	Rs.4,000./-	60 Days	Appropriate class for electrical category

2. Prospective / Interested bidder may download the Bid Documents from website <https://www.tender.nprocure.com> free of cost till the Time and Date as mentioned on online NIT at website <https://www.tender.nprocure.com>.
3. However, Bidder who is submitting the Bid Online will have to pay the Bid Document Fee/ Tender Fee through Demand Draft only of any Schedule Bank payable at Vadodara and in favor of 'Municipal Commissioner, Municipal Corporation, Vadodara. Once the Bid is received online, Bid Document / Tender Fee will not be refundable.

The Demand Draft for Bid Document / Tender fee / ~~Bank Guarantee~~ against Bid Security / EMD shall be submitted in electronic format through online (by scanning) while uploading the bid, this submission shall mean that bid document / tender fee and Bid Security / EMD has been received. Accordingly, the offer of only

those shall be opened whose Bid Document / Tender Fee and Bid Security / EMD have been received electronically. However, for the purpose of realization of Demand Draft / ~~Bank Guarantee~~ bidder shall send the same in original through R.P.A.D. so as to reach to "Executive Engineer, Streetlight department, 2nd floor, room no.-202, Vadodara Municipal Corporation, Khanderao Market Building, Rajmahal Road, Vadodara-390001 on or before 10.07.2026 up to 16.00 Hrs.

Note : If any bidder will fill the online documents & price bid but fail to submit hard copy before last date & time of submission than a bidder will going to be abeyance to fill any tender for next Six (06) months in VMC.

Penetrative action for not submitting Demand Draft / ~~Bank Guarantee~~ in original to Executive Engineer / Tender Inviting Authority by bidder shall be initiated. Bidder will be abeyance from filling tender for next six months in VMC.

4. Bids received online, will be opened on the time, date and place as specified in the online NIT at website <https://www.nprocure.com> in the presence of the bidders or their authorized representatives, who wish to remain present.  
If the office happens to be closed on the day of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue.
5. Deleted
6. Other Information is asunder:
  - A. Agencies can prepare and edit their offers a number of times before the end of the tender submission date and time. After the tender submission date and time, the bidder cannot modify / edit / withdraw their submitted offer in any case. No written or online request in this regard shall be granted.
  - B. Offers in physical form will not be accepted in any case.
  - C. Demand Draft purchased by the other then bidder and issued after the last date of submission of Bids, will not be considered or accepted.
  - D. The cost incurred by the contractor for this offer for clarification or attending discussion, conferences or site visits will not be reimbursed by the Employer or Engineer-in-Charge.
  - E. Conditional tender shall not be accepted.
  - F. Any changes, addition, alternation made in the prescribed form attached with tender are liable to be rejected.
  - G. Any change in format or conditional Bank Guarantee will not be accepted and the bidder will be considered non-responsive.
  - H. All the bidders are instructed to fill in information strictly in accordance with the format given in the checklist / qualification document / tender document.
  - I. It is mandatory for the bidders to supply each and every information as asked strictly in electronic format at appropriate places only.
  - J. Blank / insufficient information shall be treated as nil information and shall result in disqualification.

- K. Even if the bidder has been qualified in a similar or larger size of project in the past, it shall not be deemed to be a ground / reason for not giving required information for this work /bid.
- L. Information supplied for earlier projects shall not be considered while evaluation of this bid. The Government will not ask for any other information, unless it is found absolutely necessary by the competent authority.
- M. If found necessary, the contractor will be intimated for negotiation,

Works following documents shall be submitted in electronic format only through online by scanning and the (i) Bid Document Fee / Tender Fee (ii) Bid Security / EMD should be sent in original to the Tender opening authority through RPAD, so as to reach the Executive Engineer on or before 10.07.2026 up to 16.00 Hrs.

This is a two bid tendering system and the tender documents consists of –

Part I: Technical Bid

Part II: Price Bid.

The Tenderer shall submit this tender in accordance with the various instructions included in the tender documents.

**PREQUALIFICATION / TECHNICAL BID:-**

**The Tenderer shall have to submit Prequalification Bid with related documents “On Line” through (n) procure website and “Hard Copy” through RPAD / Speed Post.**

This cover shall contain following:

- 1) Rs. 4,000/- (Four Thousand Only)** in the form of Demand Draft/Pay Order from any Nationalized bank or banks approved as per government of Gujarat finance department GR NO FD/MSM/e-file/04/2023/4020/DMO Date 11/03/2024 and GR No FD/MSM/e-File/4/023/0057/D.M.O Date 21/04/2023 only and it should be in favour of “Municipal Commissioner”, Vadodara Municipal Corporation at Vadodara only to be forwarded towards non-refundable Tender Fee.
- 2) Rs. 60,000/- (Rupees Sixty thousand Only)** in the form of Demand Draft or Pay Order or ~~Bank Guarantee~~ of any Nationalized Bank or banks approved as per government of Gujarat finance department GR NO FD/MSM/e-file/04/2023/4020/DMO Date 11/03/2024 and GR No FD/MSM/e-File/4/023/0057/ D.M.O Date 21/04/2023 only and it should be in in favour of Municipal Commissioner, Vadodara Municipal Corporation only to be forwarded towards EMD. Validity period minimum 6 months.

Forwarding letter along with conditions/clarifications, if any and necessary documents as below.

- a) Copies of original documents defining the constitution of legal & stable power of attorney of the signatory of the tender to commit the Tender.
- b) Copies of Provident Fund, GST, ESIC Registration certificate shall be submitted along with tender
- c) The Tenderer must have registered in appropriate class for electrical category either with Vadodara Municipal Corporation, Central / State / PWD / M.E.S./Semi Govt. organizations/MGVCL/UGVCL/DGVCL/PGVCL/DISCOM/GEDA and MSME. If contractor have not registered with the VMC, then after getting work order contractor should get registered with the VMC within 30 days.
- d) The Tenderer must have Electrical valid license from the State Licensing Board.
- e) The Bidder should be original manufacturer /their sole selling agents / authorized distributors / dealers / channel partner. In case other than the Original manufacturer, a specific authorization letter of the manufacturer is required to be submitted on company letter head for PV Module and Invertor (PCU).
- f) Valid Solvency Certificate of Rs. 8.98 Lac shall be attached along with tender documents.
- g) Bidder shall have financial capability of average annual financial turnover during the last three years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost (Rs 8.98 Lac).
- h) Tenderer should have carried out single similar nature job works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-

- Three similar completed works costing not less than the amount equal to 40% of the estimated cost of SETC **Work (Rs. 11.98 lac).**

**Or**

- Two similar completed works costing not less than the amount equal to 50% of the estimated cost of SETC **Work (Rs. 14.98 lac).**

**Or**

- One similar completed works costing not less than the amount equal to 80% of the estimated cost of SETC **Work (Rs.23.96 lac).**

Similar work means “ Supply Installation testing and commissioning of PV solar power plant on roof top /Ground mounting /Existing Structure in Municipal Corporation, Central / State / PWD / M.E.S. / Semi Govt. and Big reputed PVT organizations.” Copies of work order and completion certificate from the concerned organization in the name of tenderer shall be submitted. Following enhancement factors will be use for the cost of work executed and financial figures to common base for the value of work order.



Consider M.F. as mentioned here under Year	Rupees	Multiplying Factor	Total Amount in Rs	Remarks
2025-26		x 1.0		
2024-25		x 1.10		
2023-24		x 1.21		
2022-23		x 1.33		
2021-22		x 1.46		
2020-21		x 1.61		
2019-20		X 1.77		
2018-19		x 1.94		

- d) Organization setup.
  - e) Detailed technical literature/catalogue shall be submitted along with the tender.
  - f) Audited balance sheet for last three years duly attested by C.A.
  - g) Last receipt of Provident fund, GST and ESIC
- 3) The contractor should have not been debarred from any Central/ State Govt. Department/ Agency. i.e. Contractor should not be under debarment at the time of submission of bid.
  - 4) The company/ its product of SPV modules must be registered with MNRE (as per ALMM List).
  - 5) The Bidder shall have experience in Solar PV Power Project (s) from last five (5) years from the date of submission of Bid. A copy of Work Order/ LoI and Completion Certificate shall be furnish along with the bid in support of above.
  - 6) The Bidder shall have designed, engineered, procured, supplied, erected, and commissioned and Operation & Maintenance of Grid Connected Solar Photovoltaic Power Plant (s) as EPC Contractor (Sole Bidder) of cumulative installed capacity of 100KW or above in India from 1 April 2016 as on the Deadline for Submission to meet the cumulative capacity out of which . At least one single Solar PV Power Plant should have been of 30 kW capacity or above
  - 7) The Bidder shall also submit documentary proof of achievement of targeted performance generation (CUF) Certificate of at least one solar PV power plant of 30 kW or above installed in India and have completed minimum two (2) years operation & maintenance and the same shall be certified by the Developer/Client/Owner of that particular solar PV power plant.
  - 8) The Bidder shall have qualified manpower with relevant design, engineering, procurement, supply, project execution expertise and experience for development of Solar PV power Plant.

- 9) The bidder should have denotable track record of executive solar project a minimum of one solar project with a capacity of 30kW must have been successfully commissioned. The bidder should attach purchase order and Work Completion certificate for such commissioned project. This is Mandatory.
- 10) Joint venture prohibition: - joint venture (JV) OR Consortium bids shall not be allowed.
- 11) The bidder should submit the "NEEGG"(Net Electrical Energy Generation Guarantee) as per Tender Technical Specification on Rs 300 Non Judicial stamp paper with Notarized. If this document is not found enclosed in the Technical bid part-I then the tender will be outright reject.

**Tenderer is not allowed to mention rates in Technical Bid. All the Tender pages must be duly sealed & signed. Original tender documents must be submitted as it is. This cover must be superscripted as "Prequalification/Tender Bid, Name of Work, and Date of Opening & PRO No.**

**PRICE BID :-**

- 1) Price Bid cover (Hard Copy) shall not be accepted by Vadodara Municipal Corporation by post or personally. **The Price Bid shall be submitted through the website of (n) procure only.** The bidder who had completed the formalities of registration with the agency "(n) procure" are only eligible to quote the price bid of this tender through the web site <https://www.tender.nprocure.com> within the stipulated time limit mentioned in the advertisement.
- 2) All bidders can submit the price bid only on web site. The prices for offer are to be quoted by the bidders at specified spaces. No condition will be accepted along with the price bid.

**IMPORTANT NOTE :-**

- 1) Technical Bid along with EMD & Tender fee must be sealed & super scribed and shall be submitted to the Executive Engineer, Street light department, Room No.202, Vadodara Municipal Corporation, Khanderao Market Building, Rajmahal Road, Vadodara-390001 by Speed Post/Registered Post only on or before up to 16.00 hours of due date . **In absence of physical & On Line Technical bid the tender is liable to be rejected.**
- 2) Tenders received after due date will be rejected. Tender received or due to be received after the time limit is over will not be accepted and if inadvertently accepted will not be opened and will be returned unopened. The tenders who may get opened before the due date with no indication having been given on the outside of the envelope are liable to be rejected.

- 3) On Line Technical Bid and Price Bid shall be submitted on or before 13:00 hr. on the due date.
- 4) If EMD & Tender Fee are not found enclosed in part-I, than the tender will be out right rejected.
- 5) Price- Bid will be opened after scrutiny of pre-Qualification Bid. Price bid shall not be opened if Tenderer is disqualified at pre- qualification stage.
- 6) Evaluation of Technical Bid (P.Q. Bid) shall be done on the basis of submitted authentic documents only.
- 7) Once the pre-qualification bid is opened the Tenderer shall not submit any documents/ clarifications without request/approval of authority. Conditional Tenders shall not be accepted & shall be rejected.
- 8) Demand Draft of tender fee should separately attached with prequalification documents only in case the Tenderer who download tenders from website.
- 9) The Cost of Bid Document will not be refunded under any circumstance.
- 10) Tender copy should be reached only by Registered post / Speed post at Executive Engineer, Street light department, Room No.202, Vadodara Municipal Corporation, Khanderao Market Building, Rajmahal Road, Vadodara-390 001
- 11) The Tenderer are advised to read carefully & study all the pages of tender document which forms part & parcel of the contract Document.
- 12) Tender shall visit the site before quoting tender to understand site condition to execute the work and if required get necessary data at their own cost.
- 13) Municipal Commissioner reserves right to accept any or reject all tenders without assigning any reason thereof.
- 14) Original manufacturer / their sole selling agents /authorized distributors /dealers /channel partner shall not be required to registered in appropriate class for electrical category in Vadodara Municipal Corporation. If make of the material is not registered in VMC, vendor registration of material shall be required in VMC after receiving work order.

15) Tenderer shall have to submit checklist with pre-qualification Bid. It should be properly typed with seal & signature. Checklist should be as per format given in this tender elsewhere.

16) Bidder submit online Tender PQ bid but not submit hardcopy of Tender PQ Bid at Schedule time period than Bidder have Abeyance 06 month for fill up tender in VMC

-SD-

**HOD Streetlight Department**  
Municipal Corporation  
Vadodara

**SECTION - 1**  
**INSTRUCTIONS TO BIDDERS**  
**(ITB)**

## Section-1 Instruction to Bidders

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## **A. GENERAL**

### **1. Scope of Bid**

- 1.1 The Employer (The Executive Engineer) invites bids for the ARC of works (as defined in these documents and referred to as 'the works') detailed in the table given in IFB. The bidders may submit bids for any or all of the works detailed in the table given in IFB.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
- 1.3 Throughout these bidding documents, the terms 'bid' and 'tender' and their derivatives (bidder/ tenderer, bid / tender, bidding/ tendering, etc.) are synonymous.

### **2. Source of Funds**

- 2.1 The expenditure on this project will be met from the budget of Govt. of Gujarat / Govt. of India for centrally sponsored projects.

### **3. Eligible Bidders**

- 3.1 This Invitation for Bids is open to all eligible bidders.
- 3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the works, and any of its affiliates, shall not be eligible to bid.

### **4. Qualification of the Bidder**

- 4.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include a program of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.
- 4.2 Deleted
- 4.3 Deleted
- 4.4 Deleted

### **4.5 QUALIFICATION CRITERIA:**

Experience of having successfully completed similar works during last 7 (Seven) years ending last day of month previous to the one in which applications are invited should be either of the following: -

- Three similar completed works costing not less than the amount equal to 40% of the estimated cost of SETC Work **(Rs. 11.98 lac)**.

**Or**

- Two similar completed works costing not less than the amount equal to 50% of the estimated cost of SETC Work **(Rs. 14.98 lac)**.

**Or**

- One similar completed works costing not less than the amount equal to 80% of the estimated cost of SETC Work **(Rs.23.96 lac)**.

Similar work means “Supply Installation testing and commissioning of PV solar power plant on roof top /Ground mounting /Existing Structure in Municipal Corporation, Central / State / PWD / M.E.S. / Semi Govt. and Big reputed PVT organizations.” Copies of work order and completion certificate from the concerned organization in the name of tenderer shall be submitted. Following enhancement factors will be use for the cost of work executed and financial figures to common base for the value of work order.

**4.5.1** Qualification will be based on Applicant’s meeting all the following minimum pass/fail criteria regarding the Applicant’s general and particular experience, personnel and equipment capabilities and financial positions, as demonstrated by the applicant’s responses in the forms attached to the letter of application (specified requirement for joint ventures are given under para 4.6 below) Subcontractors experience and resources shall not be taken in to account in determining the applicants compliance with the qualifying criteria

To qualify for more than one contract, the applicant must demonstrate having experience and resources sufficient to meet the aggregate of the qualification criteria for each contract given in paragraphs 4.5.4, 4.5.5 and 4.5.9 below

#### **4.5.2 Base year and Escalation**

The base year shall be taken as Current financial year

Following enhancement factors will be used for the costs of works executed and the financial figure to a common base value for works completed in India.

<u><b>Year</b></u>	<u><b>Financial Year</b></u>	<u><b>Multiplying factor</b></u>
Base year of inviting tender	2025-26	1.00
-1	2024-25	1.10
-2	2023-24	1.21
-3	2022-23	1.33
-4	2021-22	1.46
-5	2020-21	1.61
-6	2019-20	1.77
-7	2018-19	1.94

Applicant should indicate actual figures of costs and amount for the works executed by them without accounting for the above-mentioned factors.

In case the financial figures and value of completed works are in foreign currency the above enhanced multiplying factors will not be applied. Instead, the current market exchange rate (State Bank of India BC Selling rate as on the last date of submission of the bid) will be applied for the purpose of conversion of the amount in foreign currency into India rupees.



#### **4.5.3. General Experience.**

The Applicant shall meet with the following minimum criteria:

- (a) Average Annual Financial Turnover during the last 3 years, should be at least 30% of the estimated cost
- (b) Deleted

#### **4.5.4. Personnel Capabilities.**

Availability for his work of personnel with adequate experience as required; as per **Appendix.**

#### **4.5.5. Equipment Capabilities**

Based on the studies carried out by the Engineer, the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule are shown in the Appendix.

The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

#### **4.5.6. Financial Position**

The Applicant should give undertaking that he has access to, or has available, liquid assets (aggregate of working capital, cash in hand and uncommitted ~~bank~~ **guarantees**) and / or credit facilities up to 25 percent of the value of the contract / contracts applied.

- 4.5.7.** The audited balance sheets for the last five years should be submitted, which must demonstrate the soundness of the applicant's financial position, showing long – term profitability including an estimated financial projection for the next two years. If necessary, the employer will make inquiries with the applicant's bankers.

#### **4.5.8. Litigation History**

The Applicant should provide accurate information on any litigation or arbitration resulting from contracts completed or under execution by him over the last five years. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the applicant.

#### **4.5.9. Disqualification**

Even though the applicants meet the above criteria, they are subject to be disqualified if they have:

Made misleading or false representation in the forms, statements submitted, and / or Record of poor performance such as abandoning the work, rescinding of contract for which the reasons are attributable to the non – performance of the contractor; consistent history of litigation awarded against the applicant or financial failure due to bankruptcy. The rescinding of contract of a joint venture on account of reasons other than non – performance, such as Most Experienced partner of joint venture

pulling out, court directions leading to breaking up of a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the qualification of the individual partners.

**#4.6 ~~JOINT VENTURE: (Maximum 3 Members i.e. 1 Lead & 2 Others)~~  
(Applicable only for estimated project cost of 50 Crore and above)**

**~~4.6.1. Joint ventures must comply with the following requirement:~~**

~~(a) Following are the minimum qualification requirements:~~

~~I. The lead partner shall meet not less than 50 percent of all criteria given in para 4.5.3 & 4.5.6 above. The joint venture must collectively satisfy the criteria of para 4.5.3 & 4.5.6 above. The experience of the other joint venture partners shall be considered if it is not less than 30 percent of the qualifying criteria in para 4.5.3 & 4.5.6 above.~~

~~II. Individually each member must satisfy the requirements of para 4.5.7 & 4.5.8 above.~~

~~(b) Bid shall be signed so as to legally bind all partners, jointly and severally, and shall be submitted with a copy of the joint venture agreement providing the joint and several liabilities with respect to the contract.~~

**~~4.6.2. Qualification of a joint venture does not necessarily qualify any of its partners individually or as a partner in any other joint venture. In case dissolution of a joint venture, each one of the constituent firms may qualify if they meet all the qualification requirements, subject to the written approval of the Employer.~~**

**4.7. Bid Capacity.**

~~Applicants who meet the minimum qualification criteria will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:~~

**Assessed Available Bid Capacity = (A\*N\*2-B), where**

~~A = Maximum value of work executed in any one year during the last five years (updated to the price level of the year indicated in appendix) taking into account the completed as well as works in Progress.~~

~~B = Value at current price level of the existing commitments and ongoing works to be completed during the next (period of completion of work for which bids are invited); and~~

~~N = Number of years prescribed for completion of the works for which the bids are invited.~~

**4.8 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:**

- Made misleading or false representation in the forms, statements and Attachments the submitted in proof the qualification requirements; and /or Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delay in completion, litigation history, or financial failures etc.; and/or

- Participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

**5. One bid per bidder**

- 5.1. Each bidder shall submit only one bid for one package. A bidder who submits or participates in more than one bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the bidder's participation to be disqualified.

**6. Cost of Bidding**

- 6.1. The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

**7. Site Visit**

- 7.1. The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of work and its surrounding and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works.

The costs of visiting the site shall be at the Bidder's own expense.

## BIDDING DOCUMENTS

### 8. Content of Bidding Documents

- 8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause10:

Section	Particulars	Volume No.
-	Invitation for Bids	I
1	Instructions to Bidders	
2	Qualification Information, and other forms	
3	Conditions of Contract	
4	Contract Data	
5	Technical Specifications	II
6	Form of Bid	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawings	IV
10	Documents to be furnished by bidder	V

- 8.2. Volumes I, II, III and IV are available online and documents to be furnished by the bidder in compliance to section 2 will be prepared by him and furnished as Volume-V in two parts (refer clause12).
- 8.3. The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, and technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. **Pursuant to clause 26 hereof**, bids which are not substantially responsive to the requirements of the Bid Documents shall berejected.

### 9. Clarification Bidding Documents

- 9.1 A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or through E-mail at the Employer's address indicated in the invitation to bid. The Employer will respond to any request for clarification which he received earlier than 15 days prior to the deadline for submission of bids. Employer's response will be published on website including a description of the enquiry but without identifying its source.

## **9.2. Pre-bid meeting**

- ~~9.2.1. The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in the appendix. Or send queries via Email on or before Prebid Date. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.~~
- ~~9.2.2. The bidder shall be required to submit any questions in writing or e-mail to reach the Employer not later than 03 days before the meeting.~~
- ~~9.2.4. Minutes of the meeting, including the question raised (Without identifying the source of enquiry) and the responses given will be published without delay on the tender website i.e. [www.nprocure.com](http://www.nprocure.com). Any modification of the bidding documents listed in sub-Clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.~~
- ~~9.2.5. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.~~

## **10. Amendment of Bidding Documents**

- 10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda.
- 10.2. Any addendum thus issued shall be part of the bidding documents. The Employer will assume no responsibility for the same.
- 10.3. To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

## B. PREPARATION OF BIDS

### 11. Language of the Bid

11.1 All documents relating to the bid shall be in the English language.

### 12. Documents Comprising the Bid

12.1. The bid be submitted by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

**Part I shall be named “Technical Bid” and shall comprise**

- (i) Bid Security in the form specified in Section-8
- (ii) Qualification Information and supporting documents as specified in Section2
- (iii) Certificates, undertakings, affidavits as specified in Section2
- (iv) Any other information pursuant to Clause 4.5 of these instructions
- (v) Undertaking that the bid shall remain valid for the period specified in Clause 15.1

**Part II shall be named “Financial Bid” and shall comprise**

- (i) Form of Bid as specified in Section6
- (ii) Priced Bill of Quantities for items specified in Section-7

12.2. The Bidder shall submit the details / information pertaining to each part i.e. technical as well as financial and must be submitted onlineonly.

12.3. Following documents will be deemed to be part of thebid.

Section	Particulars	VolumeNo.
<b>Invitation for Bids (IFB)</b>		
1	InstructiontoBidders	Volume-I
3	Conditions ofContract	
4	ContractData	
5	Specifications	Volume-II
9	Drawings	Volume-IV

### 13. Bid Prices

13.1 The Contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by theBidder.

13.2 The bidder shall fill in rates and prices and line item total (both in figures and words) for all items of the Works described in the Bill of Quantities along with total bid price

(Both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the Bill of Quantities.

- 13.3 All duties, taxes, and other levies except GST payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.

13.4 Deleted

- 13.5 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Condition of Contract **(Irrespective of the time limit and Bid Amount)**

#### **14. Currencies of Bid and Payment**

- 14.1 The unit rates and the prices quoted by the bidder shall be entirely in Indian Rupees. All payments shall be made in Indian Rupees.

#### **15. Bid Validity**

Tenders submitted by Tenderer shall remain valid for acceptance for a period of 120 days from the date of opening of the Price-Bid. The Tenderer shall not be entitled during the said period of 120 days, without the consent of writing of the owner to revoke or cancel his tender or to vary the tender given or any terms thereof. In case of tenderer revoking or cancelling his tender or vary any term in regard to thereof without the consent of owner in writing, the owner shall forfeit earnest money paid by him along with the tender.

- 15.1 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified period. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his security for a period of the extension, and in compliance with Clause 16 in all respects.

#### **#16. Bid Security**

##### ☐ **EARNEST MONEY DEPOSIT**

The Tenderer must pay earnest money as given in the notice inviting Tenders and attach with the technical bid of Tender. The earnest money can be paid Nationalized Bank's Demand draft/Pay Order in favor of Municipal Commissioner; Vadodara EMD shall be attached with Technical Bid. Nationalized Bank or banks approved as per government of Gujarat finance department GR NO FD/MSM/E-file04/2023/4020/DMO Date 11/03/2024 and GR No FD/MSM/e-File/4/2023/0057/D.M.O Date 21/04/2023

It will be released after one year from the completion of the O&M work

**Note:** No interest shall be paid on the earnest money deposit. The earnest money of the unsuccessful Tenderer will be refunded within reasonable period without any interest.

The earnest money deposited by successful Tenderer will be retained towards the Security Deposit for the fulfillment of the Contract, but shall be forfeited, if the Tenderer fails to execute the agreement within 15 days after the letter of acceptance of Tender.

□ **SECURITY DEPOSIT**

The person/persons whose tender is accepted (herein after called the contractor) shall pay 3% Security Deposit of the order value within 15 days from the date of receipt of the order in the form of D.D. of any Nationalized Bank in favour of Municipal commissioner, Vadodara Municipal Corporation. It will be released after completion of the o&m work.

□ **PERFORMANCE SECURITY DEPOSIT**

The person/persons whose tender is accepted (herein after called the contractor) shall pay 10% Performance Security Deposit of the O&M order value shall be submitted within 15 days from the date of the O&M work start in the form of D.D. of any Nationalized Bank in favour of Municipal commissioner, Vadodara Municipal Corporation. It will be released after completion of the o&m work.

- ~~16.1. The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This Bid security shall be in favor of Employer as named in Appendix and may be in one of the following forms;~~
- ~~a. Bank Guarantee from any scheduled Indian bank, in the format given in Volume III. **(Bank Guarantee is applicable only for Bid Estimated Amount of Above 01 Crore)** and Bank Guarantee of Schedule and Private Banks shall be considered as per GoG Finance Department's Circular No. FD/MSM/e-file/4/2023/0057/D.M.O. Date 21/04/2023 or as per their latest amendment.~~
- ~~16.2. Bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall be valid for 45 days beyond the validity of the bid validity period specified in sub clause 15.1 employer shall not pay any interest and bid security of L2 will be given after work order /LOI to Lowest bidder. i.e. total validity of 120+45 =165Days~~
- 16.3. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.
- 16.4. The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1 except L2 Agency.
- 16.5. The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.



**16.6. The bid Security may be forfeited**

- (a) If the Bidder withdraws the bid after Bid opening during the period of Bid validity.
- (b) If the Bidder does not accept the correction of the Bid Price, if any or
- (c) In the case of a successful Bidders, if the Bidder fails the specified time limit to
  - (i) Sign the Agreement; or
  - (ii) Furnish the requirement Performance Security.
  - (iii) #If found necessary, the bidder will be intimated for negotiation, He will be intimated maximum three times within the validity period for negotiation, If contractor does not respond in time, his Bid Security (EMD) will be forfeited and his tender will be rejected. Punitive action will be taken on such contractors. (As per GoG R&B Dept's Gr. No. S/22/2017/6369/D, Dt.08/06/2018).

**17. Alternative Proposals by Bidders.**

- 17.1. Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilization advance or time for completion), basic technical design as indicated in the drawing and specifications. Conditional offers or alternative offers will not be considered further in the process of tender evaluation.

**18. Format and Signing of Bid**

- 18.1. The Bidder shall prepare documents comprising the bid as described in Clause 12 of these Instructions to bidder as the "Technical Bid" and "Financial Bid" in separate parts to be uploaded.

**19. Deleted**

**C. SUBMISSION OF BIDS**

**20. Deadline for Submission of the Bids**

- 20.1. Complete Bids must be received online by the Employer at the tender website specified above not later than the date indicated in appendix.
- 20.2. The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all right and obligation of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

**21. Deleted**

**22. Modification and Withdrawal of Bids**

- 22.1. Bidders may modify or withdraw their bids online before the deadline prescribed in Clause 20 or pursuant to Clause 23.
- 22.2. Deleted
- 22.3. No bid shall be modified or withdrawn after the deadline for submission of Bid.
- 22.4. Withdrawal or modification of a bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1

above or as extended pursuant to Clause 15.2 may result in the forfeiture of the Bid security pursuant to Clause16.

## **D. BID OPENING AND EVALUATION**

### **23. Bid Opening**

- 23.1 The Employer will open all the Bids received including modifications made pursuant to Clause 22, in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clauses 20 and 23.3, In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next workingday.
- 23.2. Deleted.
- 23.3. The “Technical Bid” shall be opened. The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the invitation for bid (ref. Column 4 and paragraph 3), and has not been furnished in the form specified in Clause 16, the technical bid will not be opened.
- 23.4. (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security will be taken up for evaluation with respect to the Qualification information and other information furnished in part I of the bid pursuant to Clause 12.1.
- (ii) If required, the bidder will be asked in writing to clarify his Qualification Documents with respect to any required clarification.
- (iii) The bidders will respond in not more than 7 days of issue of the clarification letter.
- (iv) Immediately (usually within 3 or 4 days), on receipt of these clarification the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.
- 23.5. Deleted
- 23.6 At the time of opening of “Financial Bid”, the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The responsive Bidders’ names, the Bid prices, the total amount of each bid, any discount and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.
- 23.7 the time of opening of “Financial Bid”, the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The responsive Bidders’ names, the Bid prices, the total amount of each bid, any discount, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.
- 23.8 In case bids are invited for more than one package, the order for opening of the “Financial Bid” shall be in order of Estimated amount of Bids from highest to lowest.
- 23.9 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.6.

**24 Process to be Confidential**

- 24.1 Information relating to the examination, clarification, evaluation, and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

**25. Clarification of Financial Bids**

- 25.1. To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by e-mail, but no change in the price or substances of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids.
- 25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his Bid opening to the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.
- 25.3. Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decision may result in the rejection of the Bidders' bid.

**26. Examinations of Bids and Determination of Responsiveness**

- 26.1 During the detail evaluation of "Technical Bid", the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3 and 4; (b) has been properly signed; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding document. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications, and drawings.
- 26.2 A substantially responsive "Financial Bid" is one which confirms all the terms, conditions and specifications of bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 26.3 If a "Financial Bid" is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

**27. Deleted**

**28. Deleted**

## **29. Evaluation and Comparison of Financial Bids**

- 29.1. The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.
- 29.2. Deleted.
- 29.3. The Employer reserves the right to accept or reject any variation or deviation. Variation and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer, shall not be taken into account in Bid evaluation.
- 29.4. The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of Contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.
- 29.5. If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract the Employer may require the Bidder to produce detailed consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.
- 29.6. A bid which contains several items in the bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder may be rejected as non-responsive.

## **30. Deleted**

## **E. AWARD OF CONTRACT**

### **31. AwardCriteria**

31.1. Subject to Clause 32, the Employer will award the contract to the Bidder whose Bid has beendetermined.

- (i) to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price;and
- (ii) to be within the available bid capacity adjusted to account for his bid price which is the lowest evaluation in any of the packages opened earlier than the oneconsideration.

In no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at his evaluation bidprice.

### **32. Employer's Right to Accept any Bid and to Reject any or all Bids**

32.1. Notwithstanding Clause 31, the Employer reserves the right to accept or reject any Bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or Bidder or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer'saction.

### **33. Notification of Award and Signing ofAgreement**

33.1. The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the condition of contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "ContractPrice").

33.2 The notification of award will constitute the formation of the contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause.

33.3. The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and to the successful Bidder, within 28 days following the notification of award along with the Letter of Acceptance. Within 21 days of receipt, the successful Bidder will sign the Agreement and deliver it to theEmployer.

33.4. Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

### **34. PerformanceSecurity**

~~34.1. (A) Within 20 (Twenty) days of receipt of Letter of Acceptance/Work Order, the successful Bidder shall furnish to the Employer an irrevocable and DD from a Bank in the form set forth in Section 8 (the "Performance Security") for an amount equal to 5% (five percent) of its Contract Price (Capital Cost +GST). In case of bids mentioned below, the successful Bidder, along with the PerformanceSecurity,shall also furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the same form given at Section 8~~

~~towards an Additional Performance Security (The “Additional Performance Security”) for an amount calculated as under:~~

- ~~(a) If the Contract Price offered by the Selected Bidder is lower than 10% but upto 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 20% of the difference in the (i) Estimated Project Cost (as mentioned in Bid Document) - Minus 10% of the Estimated Project Cost and (ii) Contract Price offered by the selected Bidder.~~
- ~~(b) If the Contract Price offered by the Selected Bidder is lower than 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 30% of the difference in the (i) Estimated Project Cost (as mentioned in Bid Document) - Minus 10% of the Estimated Project Cost and (ii) Contract Price offered by the selected Bidder.~~
- ~~(c) This Additional Performance Security shall be treated as part of the Performance Security.~~
- ~~(B) The Performance Security shall be valid beyond 60(sixty) days of the Defects Liability Period and the Additional Performance Security shall be valid beyond 28 (twenty-eight) days of Project Completion Date.~~

~~34.2. If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued either (a) at the Bidder's option, by a Nationalized/Scheduled Indian bank or (b) by a foreign bank located in India and acceptable to the Employer. As per GoG Finance Department's Circular No. FD/MSM/e-file/4/2023/0057/D.M.O. Date 21/04/2023 or as per their latest amendment.~~

~~34.3. Failure of the successful Bidder to comply with the requirement of Sub-Clause 34.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.~~

### **~~35 Advance Payment and Security~~**

~~35.1 The Employer will provide an Advance payment on the Contract Price as stipulated in the Conditions of Contract, subject to maximum amount, as stated in the Contract Data.~~

### **36. Deleted**

### **37. Corrupt or Fraudulent Practices**

37.1 The Employer will reject a proposal if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in completing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with National Highways Authority of India/ State PWD and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in completing for the contractor, or in execution.

37.2 Furthermore, Bidders shall be aware of the provision stated in Sub- Clause 59.2 of the Conditions of Contract.

**APPENDIX TO ITB**  
**Clause Reference**  
**With respect to**  
**Section –I**

1.	The Name of the Employer is .....	[ Cl.1.1]
2.	The last Seven years.	
	Base Year 2025-2026	
	2024-2025	
	2023-2024	
	2022-2023	
	2021-2022	
	2020-2021	
	2019-2020	
	2018-2019	
3.	This Annual Financial Turnover Amount is Rs.....	[Cl.4.5.3 (a)]
4.	Value of Work is <b>Rs. 2996135/-</b>	
5.	Deleted	
<del>6.</del>	The cost of electricalwork is Rs.	
<del>7.</del>	<del>The cost of water supply / sanitary works is Rs.</del>	
8.	Liquid assets and / or availability of credit facilities is 25% of Estimated Cost	[Cl.4.5.6 ]
9.	Price level of the financial year 2025-26	[Cl. 4.5.2]
10.	<del>The pre-bid meeting will take place at The Executive Engineer onDt18.10.2024 at 11.00AM</del>	[Cl. 9.2.1]
11.	The technical Bid will be intimated later after evaluation.	
12.	Address of the Employer: The Executive Engineer , Streetlight Department, 2nd floor, room no.-202, Vadodara Municipal Corporation, Khanderao Market Building, Rajmahal Road, Vadodara-390001	
13.	Deleted	
14.	The bid should be submitted latest by As stated on online NIT	[Cl. 20.1 & 20.2]
15.	The bid will be opened at the office of theThe Executive Engineer,Streetlight Department,As stated on online NIT	[Cl. 23.1 ]
16.	The Bank Draft in favor of Municipal Commissioner, Vadodara Municipal Corporation, Vadodara.	
17.	Deleted	
18.	Escalation factors (for the cost of workexecuted and financial figure to a common base value) for works completed	[Cl.4.5.2]



<b><u>Year</u></b>	<b>Financial Year</b>	<b><u>Multiplying factor</u></b>
Base year of inviting tender	2025-26	1.00
-1	2024-25	1.10
-2	2023-24	1.21
-3	2022-23	1.33
-4	2021-22	1.46
-5	2020-21	1.61
-6	2019-20	1.77
-7	2025-26	1.94

## **LIST OF KEY PLANT & EQUIPMENT TO BE DEPLOYED ON CONTRACT WORK**

**[Reference CL. 4.5.5]**

**The contractors shall also give a list of machineries in his possession and which they propose to use on the work.**

<b>Sr. No.</b>	<b>Plant or Machinery</b>	<b>Location</b>	<b>Age of Machinery (maximum 15years)</b>	<b>Make</b>	<b>Capacity</b>	<b>Approximate Value</b>	<b>Remark</b>
<b>1</b>	<b>2(a)</b>	<b>2(b)</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

## **List of Key Personnel to be deployed on Contract Work**

### **(Reference Cl. 4.5.4)**

#### **# Employment of a qualified site Engineer by the Contractor.**

The Contractor shall employ full-time technically qualified staff during the execution of this work as under: -

1. One graduate Electrical Engineers and three diploma Electrical Engineer when cost of the work to be executed is more than Rs.50 lakhs.
2. One graduate & two Diploma, Electrical Engineers when the cost of the work to be executed is more than Rs.15 lakhs but less than Rs.50 lakhs.
3. One graduate & one Diploma, Electrical Engineers when the cost of work is less than Rs.15 lakhs but more than Rs.5 lakhs.
4. Minimum one Diploma Electrical Engineers for the work when the cost of work to be executed is less than Rs. 5 lakhs. The Engineer so employed for the Government work must have sufficient experience to handle the work independently. Such an Engineer shall have to stay at the site of work and he shall not be entrusted with other duty except this work.

In case the contractor or partner of the contractor firm is a Graduate Engineer in respective field, Employment of a separate Engineer will not be necessary provided that the Engineer partner himself attends the execution of the work on the site.

Within 15 days of issue of work-order the Contractor will have to furnish to the Deputy Executive Engineer-in-charge of the work the Name, Qualifications, copy of mark sheet, Colour Photograph and the appointment order issued such engineers engaged for this contract work. If 15 days after issue of work order such designated Site Engineers do not resume or do not remain present on site of work, the recovery at the rate of Rs.15000/Month per Engineer will be made from the bills/deposit/dues of the contractor. Such recovery shall be non-refundable.

**SECTION - 2**

**QUALIFICATION INFORMATION**

## **QUALIFICATION INFORMATION**

The information to be filled in by the Bidder in the following pages will be used for the purpose of post qualification as provided for in Clause 4 of the Instruction to Bidders. This information will not be incorporated in the Contract.

### **1. For Individual Bidders**

#### **1.1 Constitution or legal status of Bidder (Attach Copy)**

Place of registration \_\_\_\_\_

Principal place of business \_\_\_\_\_

Power of attorney of signatory of Bid  
(Attach)

1.2 Total value of Electrical engineering 2025-26  
Work performed in the last Seven years 2024-25  
(in Rs. Lakhs) 2023-24  
2022-23  
2021-22  
2020-21  
2019-20

1.3.1 Work performed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered the sub-contract involved execution of all main items of work described in the bid documents, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last Seven years\*\* and in current year before the submission of the bid.

Project Name	Name of the Employer	Description of work	Contract No.	Value of contract (Rs. Crore)	Date of issue of work order	Stipulated period of completion	Actual date of completion*	Remark explaining reasons for delay & work Completed

\*Attach certificate(s) from the Engineer(s) in-charge

\*\* Immediately preceding the financial year in which bids are received.

~~#1.3.2 Quantities of work executed as prime contractor, work performed, in the past as a nominated sub-contractor, will also be considered provided the sub-contract involved execution of all main items of work described in the bid document, provided, further that all other qualification criteria are called (in the same name and style) in the last five years\*\* and in current year before the submission of the bid.~~

Year	Name of the work	Name of the Employer	Quantity of work performed (Cum/MT)				Remarks* (indicate contract Ref)
			Cement Concrete (Including RCC & PCC)	Masonry	Earth Works	Bituminous Work	
<del>2023-2024</del>							
<del>2022-2023</del>							
<del>2021-2022</del>							
<del>2020-2021</del>							
<del>2019-2020</del>							

1.4 Information on Bid Capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) Existing commitments and on-going works:

Description of works	Place & State	Contract No.	Name & Address of Employer	Value Contract (Rs. Cr)	Stipulated Period of Completion	Value of Works* remaining to be completed (Rs. Cr)	Anticipated of completion
1	2	3	4	5	6	7	8

\*Attach certificate (s) from the Engineer(s) in-charge

\*\* Immediately preceding the financial year in which bids are received.

1.5 Availability of key items of Contractors Equipment for carrying out the works (Ref. Clause 4.5.5). The Bidder should list all the information requested below.

Item of Equipment	Requirement		Availability Proposals			Remarks (from whom to be purchased)
	NO	Capacity	Owned/ Leased to be procured	Nos/. Capacity	Age/ Conditions	

- 1.6 Qualifications and experience of key personnel required for administration and execution of the contract. Attach biographical data. Refer also to Sub Clause 9.1 of the Conditions of Contract.

Position	Name	Qualification	Year of Experience (General)	Year of experience in the proposed position
Project Manager				
Etc.				

- 1.7 ~~Proposed sub-contract and firms involved~~

Sections of the works	Value of Sub-Contractor	Sub-Contractor (Name & Address)	Experience in similar work

Attach copies of certificates on possession of valid license for executing water supply/ sanitary work/ building electrification works.

- 1.8 Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports (in case of companies/corporations), etc. List them below and attach copies.
- 1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List them below and attach copied documents.
- 1.10 Name, address, and telephone, telex, and fax numbers of the Bidders bankers who may provide references if contacted by the Employer.

1.11 Information on Litigation history in which the Bidder is involved.

Other Party (ies)	Employer	Cause of Dispute	Amount Involved	Remarks showing Present Status

1.12. Statement of compliance under the requirements of Sub Clause 3.2 of the instruction to Bidders. (Name of Consultant engaged for project preparations is\* )

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1.13 Proposed work method and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents. (Refer ITB Clause 4.1)

1.14 Programme

**2. Deleted**

**3. Additional Requirements**

3.1 Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.

- (i) Affidavit
- (ii) Undertaking



**SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR  
AVAILABILITY OF CREDIT FACILITIES**

(CLAUSE 4.5.6 OF ITB)

**BANK CERTIFICATE**

This is to certify that M/s. \_\_\_\_\_ is a reputed company with a good financial standing.

If the contract for the work, namely \_\_\_\_\_ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. ....to meet their working capital requirements for executing the above during the contract period.

\_\_\_\_\_  
(Signature) Name of Bank

Senior Bank Manager Address of the Bank

## AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certifies that neither our firm M/s. \_\_\_\_\_  
\_\_\_\_\_ have not abandoned any work of Government of Gujarat/Government of India/any Board or Corporation under Government of Gujarat/Government of India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.
3. The undersigned hereby authorize(s) and request (s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding any (our) competence and general reputation.
4. The Undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department/Project implementing agency.

\_\_\_\_\_  
(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

Date

## UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s ..... would invest a minimum cash up to 25% of the value of the work during implementation of the contract.

\_\_\_\_\_  
(Signed by an Authorized officer of the firm)

\_\_\_\_\_  
Title of officer

\_\_\_\_\_  
Name of firm

\_\_\_\_\_  
DATE

**SECTION - 3**

**CONDITIONS OF CONTRACT**

## Conditions of Contract

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## CONDITIONS OF CONTRACT

### A. GENERAL.

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meaning.

**Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid

Compensation Events are those defined in Clause 44 hereunder.

**The Completion Date is the date of completion of the Works as certified by the Engineer in accordance** with Sub Clause 55.1

The Contract is the contract between the Employer and Contractor to execute, complete and maintain the Works till the completion of Defects Liability Period. It consists of the documents listed in Clause 2.3 below.

The Contract data defines the documents and other information which comprise the Contract.

The Contractor is a person or corporate body whose Bid to carry out the Work has been accepted by the Employer.

The Contractor's Bid is the completed Bidding document submitted by the Contractor to the Employer and includes Technical and Financial Bids.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days: months are calendar months.

The Defects Liability Period is the period named in the Contract Data and calculated from the Completion Date.

The Employer is the party who will employ the Contractor to carry out the Works.

The Engineer is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time, and valuing the Compensation Events.

Equipment is Contractor's machinery and vehicles brought temporarily to the site to construct the Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the contractor for incorporation in the works.

Plant is any integral part of the work which is to have mechanical, electrical, electronic or chemical or biological functions.

The Site is the area defined as such in the Contract Data.

Site Investigation Reports are those which were included in the Bidding documents and are factual interpretive reports about the surface and subsurface conditions at the site.

Specifications means the Specifications of the works included in the Contract and any modification or addition made or approved by the Engineer.

The Start Date is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

A Variation is an instruction given by the Engineer, which varies the Works. The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

## **2. Interpretation**

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter and the other way around. Heading have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about Conditions of Contract.

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion date, and Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole works)

2.3 The documents forming the Contract shall be interpreted in the following order of priority

- (1) Agreement
- (2) Letter of Acceptance, notice to proceed with works
- (3) Contractor's

Bid



- (4) ContractData
- (5) Conditions of Contract including Conditions ofContract
- (6) Specifications
- (7) Drawings
- (8) Bills of quantitiesand
- (9) Any other document listed in the Contract Data as forming part of the Contract.

### **3. Language and Law**

- 3.1 The language of the Contract and the law governing the Contract are stated in the ContractData.

### **4. EngineersDecisions**

- 4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

### **5. Delegation**

- 5.1 The Engineer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

### **6. Communications**

- 6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

### **7. Sub-Contracting**

- 7.1 The Contractor may subcontract any portion of work, up to a limit specified in contract data, with the approval of the engineer but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations. **Sub-contracting of supply or specific items of work is notallowed.**
- 7.2 The sub-contractor must be registered in appropriate class and category for the part of work to besubcontracted.

### **8. Other Contractors**

- 8.1 The Contractor shall cooperate and share the site with other contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractor. The Contractors shall as refer to in the Contract Data, also provide facilities and services for them as described in the Schedule. The employer may modify the schedule of other contractors and shall notify the contractor of any such modifications.

## **9. Personnel**

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 If the engineer asks the Contractor to remove a person who is a member of the Contractor Staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

## **10. Employer's and Contractors Risks**

- 10.1 The Employer carries the risk which these Contract states are Employer's risks, and the Contractor carries the risks which these Contracts states are Contractors risk.

## **11. Employer's Risks**

- 11.1 The employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive.

## **12. Contractor's Risks**

- 12.1 All risks of loss of or damages to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

## **13. Insurance**

- 13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract data for the following events which are due to the Contractor's risks:

(a) Loss of or damage to the works, Plant and materials,

(b) Loss of or damage to Equipment

(c) Loss of or damages of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and

(d) Personal injury or death.

- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and

proportions of currencies required to rectify the loss or damage incurred. If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

- 13.3 Alterations to the terms of insurance shall not be made without the approval of the Engineer.
- 13.4 Both parties shall comply with any conditions of the insurance policies.
- 13.5 Contractor has to submit Contractor All Risk policy for the project.

#### **14. Site Investigation Report**

- 14.1 The Contractor in preparing the Bid shall rely on any site Investigation reports referred to in the Contract Data, supplemented by any information available to the Bidder.

#### **15. Queries about the Contract data**

- 15.1 The engineer will clarify queries on the Contract Data

#### **16. Contractor to Construct the Works**

- 16.1 The Contractor shall construct and install the works in accordance with the specification and Drawings.

#### **17. The Works to be completed by the Intended Completion Date**

- 17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion date

#### **18. Approval by the Engineer**

- 18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary works to the Engineer, who is to approve them if they comply with the Specifications and drawings.
- 18.2 The Contractor shall be responsible for design of temporary works.
- 18.3 The Engineer's approval shall not alter the contractor responsibility for design of the Temporary works.
- 18.4 The Contractor shall obtain approval of third parties to the design of the Temporary works where required.
- 18.5 All Drawings prepared by the Contractors for the execution of the temporary or permanent work are subject to prior approval by the Engineer before their use.

## **19. Safety**

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

### **SAFETY MEASURES**

- a) The Contractor shall be responsible for the safety of all workmen and other persons entering or in the Works and shall take all measures necessary to ensure their safety to the approval of the Engineer's Representative.
- b) Provision of efficient safety helmets for all personnel including the Engineer's Representative and each of his staff and any authorised visitors to site;
- c) Provision and maintenance of suitable lighting to provide adequate illumination of Works with appropriate spares and standby equipment;
- d) Provision and maintenance of safe, sound mechanical equipment, each item of having an up-to- date testing certificates;
- e) Provision and maintenance of safe, sound ropes, slings, pulleys and other lifting tackle, each appliance having an up-to-date testing certificate where appropriate;
- f) Provision of notices 1.25m x 1.5 m size written in bold letters in English, Gujarati and Hindi to be erected on existing footpaths and at points of access likely to be used by the public, which shall warn the public of the existence of the Works. These notices shall be in addition to any statutory requirements demanded of the Contractor.
- g) Provision of safety rails (wherever instructed by Engineer in charge)
- h) The Contractor shall ensure that all his employees are fully conversant with the regulation, emergency and rescue procedures etc. and the Contractor shall enforce the rule that any employee committing a serious breach of such a regulations shall be instantly dismissed and shall not be re-employed.
- i) Contractor shall provide and maintain at his own expenses all lights, guards, fencing and necessary watchmen when and where necessary or as required by Owner/Engineer for the protection of the works or for the safety and convenience of those employed on the works and the public.
- j) Contract to shall also provide at his cost traffic barricades, men for diverting and controlling traffic, necessary signboards for diversion of traffic, in night LED Blinkers LED rope Light near Excavated trench in the event of failure on the part of Contractor, Owner may with or without notice to Contractor put up a fence or improve a fence already put up or provide and/or improve the lighting or adopt such other measures as he may deem necessary, and all the cost of such work and procedures as may be adopted by Owner/Engineer shall be borne by Contractor. Maintenance of adequate warning and general lighting at nights at place of work is essential.
- k) Contractor shall take the necessary permission and clearance of all the authorities like department of Roads, Traffic, Water Supply and Drainage; Electricity Board, Telephone Company, etc. wherever necessary and observe the regulations regarding the execution of work in congested areas, heavy traffic areas, etc.

## **20. Discoveries**

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the site is the property of the Employer. The contractor is to notify the engineer of such discoveries and carry out the Engineer's

instructions for dealing with them.

**21. Possession of the Site**

21.1 The Employer shall give possession of all parts of the site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be a Compensation Event.

21.2 If within 25% of the time limit of the project, 80% of possession of the site is not handed over to the Contractor, then contractor/ Employer may fore-close the contract. Contractor/Employer has to foreclose the work within 30 days after lapse of 25%-time limit and after 30 days foreclosure option will be closed.

**22. Access to the Site**

22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plants are being manufactured/ fabricated/ assembled for the works.

**23. Instructions**

23.1 The Contractor shall carry out all instructions of the Engineer pertaining to works which comply with the applicable laws where the site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Employer, if so required by the Employer.

**24. Disputes**

24.1 If the Contractor is of the view that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision

(A) Should be referred to as Designated and defined officer as Dy.MC/HOD/CE/ACE of repetitive Department and also as per GAD circular No.498/98-99/Dt.07.07.98 with revision time to time in future.

(B) In case disputes remains unsolved it shall be refer to Municipal Commissioner.

**25. Procedure for Disputes**

25.1 The arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

**26. Deleted**

## **B. TIME CONTROL**

### **27. Programme**

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements orders, and timing for all the activities in the works along with monthly cash flowforecast.
- 27.2 An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of theactivities.
- 27.3 The Contractor shall submit to the Engineer, for approval an updated programme at intervals no longer than the period stated in the Contract data. If the Contractor does not submit an updated programme within this period, the Engineer may withhold the amount stated in the Contract data from the next payment after the date on which the overdue programme has been submitted.
- 27.4 The Engineer's approval of the programme shall not alter the Contractor's obligations. The Contractor may revise the programme and submit it to the Engineer again at any time. A revised programme is to show the effect of Variations and Compensationevents.

### **28. Extension of the Intended Completion Date**

- 28.1 The Engineer shall extend the Intended Completion Date if a compensation Event occurs or a Variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additionalcost.
- 28.2 The Engineer shall decide whether and by how much stoppage to provided/ to extend the Intended Completion Date within 35 days of the Contractor asking the Engineer for a decision upon the effect of a compensation event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 28.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Employer his decision. The employer shall in not more than 21 days communicate to the engineer the acceptance or otherwise of the Engineer's decision. If the employer fails to give his acceptance, the Engineer shall not grant the extension and the contractor may refer the matter under Clause24.1

### **29. Deleted**

### **30. Delays Ordered by theEngineer**

- 30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the works.

### **31. Management Meetings**

- 31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 31.2 The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

### **32. Early Warning**

- 32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract price or delay the execution of works. The Engineer may require the contractor to provide an estimate of the expected effect of the future event or circumstance on the contract price and completion date. The estimate is to be provided by the Contractor as soon as reasonably possible.
- 32.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

### **33. TIME SCHEDULE**

Work Completion period will be 60 days from the date of issue of work order. Required to complete the work immediately. Contractor shall have to fail the complete of work in stipulated time VMC have to take first action for penalty for delay of works. After giving notice for completion of work, if contractor even not complete the work against time period mention in notice. VMC have to take action against the contractor for black list in VMC.

**#33. Identifying Defects/ Defect liability period****□ PERIOD OF LIABILITY & GUARANTEE**

● The Contractor shall be liable for a period of one year after the date of issue of the certificate of completion of work issued by the Dy. Municipal Commissioner(after O&M Work) . This period shall be deemed as guarantee period during which, the contractor shall be responsible for rectifying any defects that may develop in his workmanship & materials (against manufacturing defect) within the time specified by the Owner. If contractor fails to rectify that defect, owner reserves the right to complete that job at the risk and cost of the contractor and such cost will be adjusted against the security deposit,

● The contractor shall be liable during guarantee period of one year(after O&M Period) to rectify any defects that may develop after erection of supplied materials at the risk and cost of the contractor.

**33.1 : Defect liability period:**

~~The contractor shall be responsible to make good and remedy at his own expense any defect which may develop or may be noticed before the period mentioned hereunder from the certified date of completion. The Engineer in charge shall give the contractor a notice in writing about the defects and the contractor shall make good the same within 15 days of receipt of the notice. In the case of failure on the part of the contractor, the Engineer in charge may rectify or remove or re-execute the work at the risk & cost of the contractor. The Engineer in charge shall be entitled to appropriate the whole or any part of the amount of security deposit towards the expenses, if any, incurred by him in rectification, removal or re-execution. The Defects Liability period shall be as under....~~

~~The defect liability period shall of duration mentioned in contract data and shall start from date of final completion of entire work and acceptance of work by VMC. During defect liability period, the Contractor shall make good any defect whatsoever nature observed in different works equipment, or in part of plant or equipment by modifying/replacing/repairing of such defective units or parts there at his own cost within a period of ten days on hearing from Engineer in charge/VMC about such defect during liability period. In case, if Contractor's fails to do so, it will be got done by VMC and entire cost shall be recovered from Contractor's Security deposit/performance guarantee or other dues as may be possible.~~

- ~~(a) For all works costing up to Rs. 50,000 (amount put to tender), the period shall be 3 Months from the certified date of completion.~~
- ~~(b) For all works costing more than Rs. 50,000 and up to Rs. 1 crore (amount put tender), the period shall be 12 (Twelve) months from the certified date of completion or one monsoon, whichever is later.~~
- ~~(c) For major projects costing more than Rs. 1 crore, the period shall be 36 Months from the certified date of completion which should include three monsoons.~~



- (d) ~~For original building works the defect liability period will be 4 years or elapse of 4 monsoon period following date of possession of building taken over by user agency following the certified date of completion, whichever is later. For the purpose of deciding the monsoon period, the 30th September shall be treated as the last date.~~

~~Modified vide R & B D Circular No. PAC-11-102008-2076-N dated 31/8/2009, PRCH/102013(2976) — 2759-N, Dated — 27/05/2013 — and — Circular No.TNC/10/2016/Clause 17A (Correction/(1)C Dated 12/05/2016]~~

33.2 Free maintenance guarantee period for works of Road/Bridge construction

- (a) ~~For resurfacing work of road free maintenance guarantee period one year from the date of completion.~~

- (b) ~~In case of widening of the road/strengthening of the road/bridge, the contractor shall have to give four years free maintenance guarantee from the certified date of completion. During this period the contractor shall visit the site every six months along with the concerned Section Officer / Deputy Executive Engineer and will examine the work already carried out in this contract like road work, jungle cutting, side shoulders, side gutter, road furniture, patta etc. and will prepare Km. wise inspection report duly signed by all concerned and any defect observed shall be done within 15 days by the contractor at his risk and cost as per the direction of Engineer in charge. The contractor needs to do videography of these visits and require to submit at the time of release of FMG. If B.T. the surface during the maintenance period of 4 years is worn out then agency shall have to provide renewal coating as per tender item as directed by the Engineer in charge. The amount equivalent to 5% of each running bill shall be withheld and will be released after the free maintenance guarantee period (i.e. 4 years) is over.~~

~~However, this amount shall be released against fixed deposit or bank guarantee pledged in the name of Executive Engineer after completion certificate of work is issued.~~

- (1) ~~The flakiness and elongation index (combined) for coarse aggregates under no circumstances shall exceed the allowable limit set forth in the relevant clause for the material in question.~~

- (2) ~~2% of the amount eligible for the payment of bituminous items shall be withheld till the miscellaneous items like earthwork in embankment / cutting for side shoulders, side gutters, kilometer / indicator / guard stones, sign boards etc. are completed in all respect by the contractor. After completion of the miscellaneous items, the above said 2% withheld amount shall be released.~~

~~(Govt. of Gujarat's G.R. No.: TNC-10-2013-3(Part-3)/C, Dtd. 13/12/2013).~~

- (3) ~~Videography for the surface under Maintenance Guarantee is to be done as per Govt. letter No.: SSR/10/2015-16/26/C, Dtd. 26/11/15 for the work costing more than Rs. 5.00 Crore.~~

- (4) ~~Setting up of adequate laboratory & deployment of quality engineers.~~

~~The contractor shall have to set up the laboratory with adequate~~

~~equipment. Till the setting up of adequate laboratory is completed & reported of this to the engineer (subject to due verification by engineer's representative) by contractor in writing, Rs.2,00,000/- shall be withheld. The qualified quality Engineer shall be deployed exclusively for this contract by the contractors. If quality Engineer is not deployed by contractor within one month after the date of work order, the amount equivalent to Rs.20,000 per month shall be recovered till the actual deployment of quality engineer. The amount so recovered towards the deployment of quality engineers shall not be refunded.~~

~~(5) Asphalt work will have to be cross checked as per G.R. No.: RGN/60/2006/35/C, dtd.31/05/07 before final bill is paid.~~

~~(6) Maintenance during Construction Period~~

~~During the Construction Period, the Contractor shall maintain, at his own risk and cost, the existing lane(s) of the road so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition 10 (ten) days prior to the date of the Agreement, and shall undertake the necessary repair and maintenance works for this purpose; provided that the Contractor may, at his cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of works and conforms to Good Industry Practice; provided further that such interruption and diversion shall be undertaken by the Contractor only with the prior written approval of the Executive Engineer which approval shall not be unreasonably withheld. For the avoidance of doubt, it is agreed that the Contractor shall at all times be responsible for ensuring safe operation of the road.~~

33.3 The Engineer shall check the Contractor's work and notify the Contractor of any defects that are found. Such checking shall not affect the Contractor's responsibilities the Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

### **34. Tests**

34.1 If the engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect the test shall be a Compensation Event.

34.2 All test and types of tests to be performed as per IS specifications and instruction of EIC. In case if it is not done or up to the mark by bidder, 1% deduction from the work done in particular RA bill should be done.

### **34.3 THIRD PARTY INSPECTION**

All the Major Electrical Equipment/Materials/works shall be subjected third party inspection as stated in technical specifications from approved TPI Agency by VMC only at manufacturer's works with their test certificates satisfying the IS requirements. Third party inspection charges for all above material shall be borne by the contractor.

If VMC/ PMC/ TPI Engineers intend to witness the testing at manufacturer's works Entire expenses of said testing, including to & from traveling by Air,

lodging and boarding etc. of maximum Two VMC/ PMC Engineers and 1 Third Party Inspector shall be borne by the bidder.

~~34.4 #1% of the amount of **work done** should be deducted from R.A. Bill of the contractor for testing the quality of material workmanship, irrespective of actual charges.~~

~~34.5 Agency has to establish testing laboratory on site for the various test to be carried out in the work for this purpose agency shall construct a pukka laboratory building with all facility on site at location specified by the engineer incharge.~~

### **35. Correction of defects**

35.1 The engineer shall give notice to the Contractor of any defects before the end of the defects Liability Period, which begins at Completion and is defined in the contract data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

35.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Engineer's notice.

### **36. Uncorrected Defects**

36.1 If the Contractor has not corrected a defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

### **37. Bill of Quantities**

- 37.1 The bill of Quantities shall contain items for the constructions, installation, testing and commissioning work to be done by the Contractor.
- 37.2 The bill of Quantities is used to calculate the Contract price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

### **38. Change in the Quantities**

- 38.1 The Engineer shall have power to make any alterations in or addition to the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instruction in this connection which may be given to him in writing signed by the Engineer and such alteration shall not invalidate the contract and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work and at the same rate as are specified in the tender for the mainwork.

Except that when the quantity of any item exceeds the quantity as in the tender by more than 130%, the contractor will be paid for the quantity in excess of 130%, at the rate entered in the SOR of the year during which the excess in quantity is first executed.

### **39. Variations**

- 39.1 All Variations shall be included in updated programmes produced by the Contractor.

### **40. Payments for Variations**

- 40.1 If the additional or altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out as under.
- (i) At the rate derived from the item within the contract which is comparable to the one involving additional or altered class of work; where there are more than one comparable items, the item of the contract which is nearest in comparison with regard to class or classes of the work involved shall be selected and the decision of the Add. City Engineer as to the nearest comparable item shall be final and binding on the contractor.
  - (ii) If the rate cannot be derived in accordance with (i) above, such class of works shall be carried out at the rate entered in the Schedule of Rates of the division for the year in which the tender was received, increased or decreased by the percentage by which the tender amount is more or less as compared to the amount arrived at the rates in the "Schedule of Rates" of the Division in the year in

which the tender was received. If the Schedule of rates of the Division does not contain all the items, the percentage increase or decrease of the tender shall be calculated considering such items which were included in the "Scheduled Rates" of the division for the year and for materials consumed on such item the rate to be charged would be the basic rate taken into account for fixing the rate in S.O.R. referred to above.

(iii) If it is not possible to arrive at the rate from (i) and (ii) above, such class of work shall be carried out at the rate decided by the competent authorities on the basis of detailed rate analysis after hearing the contractor as per powers delegated to VMC officials.

40.2 If the additional or altered work, for which no rate is entered in the "Schedule of Rates" of the Division is ordered to be carried out before the rate is agreed upon, then the contractor shall within seven days of the date of receipt by him of the order to carry out the work, inform the Engineer-in-charge of the rate, which it is his intention to charge for such class of work and if the Engineer in charge does not agree to this rates, he shall by notice in writing be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider it advisable, provided always that if the contractor shall commence work or incur any expenditure in regard thereof before the rates shall have been determined as lastly herein before mentioned, then in such cases he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of the dispute, the decision of the HOD of the Streetlight Department shall be final.

Where, however, the work is to be executed according to the designs, drawings and specifications recommended by the contractor and accepted by the competent authority, the alternation above referred to shall be within the scope of such designs, drawings and specifications appended to the tenders.

The time limit for the completion of the work shall be extended in the proportion that the increase in the cost occasioned by alterations bears to the cost of the original work and the certificate of the Engineer-in-charge as to such proportion shall be final and conclusive.

#### **41. Cash Flow Forecasts**

41.1 When the programme is updated, the contractor is to provide the engineer with an updated cash flow forecast.

## **42. ~~Payment certificates.~~**

~~42.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.~~

~~42.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking in to account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 32.3 of the Contract Data (secured Advance).~~

~~42.3 The value of work executed shall be determined by the Engineer.~~

~~42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.~~

~~42.5 The value of work executed shall include the valuation of variations and compensation events.~~

~~42.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information~~

## **43. Payments**

~~43.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts certified by the Engineer within 28 days of the date of each certificate.~~

~~43.2 Payment of GST (prevailing rates) on the amount payable under the contract to the Contractor will be made by the Employer. Hence, it is the responsibility of the contractor to pay the GST to the concerned Authority.~~

~~43.3 Items of the works for which no rate or price has been entered in will not be paid by the Employer and shall be deemed covered by other rates and prices in the Contract.~~

## **44. Compensation events**

44.1 The following are compensation Events unless they are caused by the Contractor:

(a) The Employer does not give access to a part of the Site by the site Possession date stated in Contract data to the Contractor

44.2 In case of compensation event occurs and it prevents the work being completed beyond the Intended Completion Date then Authority will approve EOT (Extension of Time) with eligible contractual price escalation.

#### **45. Tax**

- 45.1 The rates quoted by the Contractor must be inclusive of all taxes. However, any subsequent changes in the tax structure by Government after due date of bid submission will be compensated (+/-) on availability or submission of actual documentation. Contractor will have to intimate Engineer regarding changes occurred in the tax structure after bid submission. If the contractor fails to provide such information and if any financial obligation may arise due to change in tax structure, same will be recovered from the contractor.
- 45.2 GST will be paid by contractor on the bills. Hence, it is the responsibility of the contractor to pay the GST to the concerned Authority.

#### **46. Currencies.**

- 46.1 All payment shall be made in Indian Rupees.

#### **47. Price Adjustment**

~~47.1 Contract price shall be adjusted for increase or decrease in rates and price of labour, materials (Cement, Steel, HR Coil & Pig Iron), fuels and lubricants in accordance with the following principles and procedures and as per formula given in the contract data:~~

- ~~(a) The price adjustment shall apply for the work done from the start date given in the contract data up to end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.~~
- ~~(b) The price adjustment shall be determined during each month from the formula given in the contract data.~~
- ~~(c) Following expressions and meanings during to the work done during each month~~

~~R = Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month less the amount of secured advance recovered, if any during the month. It will exclude value for works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed.~~

~~47.2 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clause in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.~~

#### **48. Retention**

- 48.1 The Employer shall retain from each payment due to Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works half the total amount retained is repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

48.3 On completion of the whole works, the contractor may substitute retention money with an “on demand” Bank guarantee.

In case, Contractor requests for refund of the Retention Money deducted by the Employer under the provision of this clause, Employer shall consider the said request of the Contractor provided that the refund hereunder shall be made in tranches of not less than 1% (One Percent) of the Contract Price and Contractor furnishes an irrevocable and unconditional Bank guarantee for an equal amount substantially in the format of Bank Guarantee for Performance Guarantee enclosed with SBD and valid up to 60 day beyond the scheduled / extended Defects Liability Period. On completion of the whole works, the contractor has however an option to submit a fresh irrevocable and unconditional Bank Guarantee for an amount equal to 2.5% of the total value of work executed substantially in the format of Bank Guarantee for Performance Guarantee enclosed with SBD and valid up to 60 days beyond the Defect Liability Period and yet refund the Retention Money Bank Guarantee submitted for refund of Retention Money.

#### **49. Liquidated Damages**

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payment due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall not be entitled for any interest on the over payment calculated from the date of payment to the date of repayment.

49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the contractor shall pay to the employer the relevant sum stated in the Contract Data as Liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data.

The employer may, without prejudice to any other method of recovery deduct the amount of such damages from any monies due or to become due to the contractor. The payment or deduction of such damages shall not relieve



the contractor from his obligation to complete the works on from any other of his obligations and liabilities under the contract.

- 49.4 If, before the Time for Completion of the whole of the Works or, if applicable any Section, a Taking Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over-Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

## 50 Bonus

- ~~50.1 If the contractor achieves completion of the whole of the works prior to the intended Completion Date prescribed in Contract Data the Employer shall pay to the contractor a sum stated in Contract Data as bonus for every completed month but subjected to maximum amount as stated in Contract Data; which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 17.~~
- ~~50.2 Bonus shall be paid only to works amounting to above INR 5 crore with time limit of the works is equal or more than 6 months. The bonus would be paid as under~~

% of Time Saved	% of Initial Contract Price entitled for Bonus
50 %	5%
40 %	4%
30 %	3%
20 %	2%
10 %	1%
Less than 10%	0%

## 51. Advance Payment.

- ~~51.1 The Employer shall make advance payment (not to be paid less than two installments except in special circumstances for which the reason to be Recorded in writing) to the Contractor of the amounts stated in the Contract Date by the date stated in the Contract Date, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to be at least 110% of the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be~~

~~progressively reduced by the amounts repaid by the Contractor. The Mobilization advance would be deemed as interest bearing advance at an interest rate of 10 % to be compounded, quarterly.~~

~~51.2 The Contractor is to use the advance payment only to pay for Equipment, plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the engineer.~~

~~51.3 The advance payment shall be repaid by deduction proportionate amount from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, variations, price adjustments, Compensation Events, or Liquidated damages.~~

~~51.4 Deleted~~

## **52. Securities**

~~52.1 The performance Security (including additional security for unbalanced bids) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The performance Security shall be valid until a date 60 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.~~

## **53. Deleted**

## **54. Cost of Repairs.**

54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start date and the end of Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damages arises from the Contractor's acts or omissions.

## **D. FINISHING THE CONTRACT**

### **55. Completion**

- 55.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the work is completed.

### **56. TakingOver**

- 56.1 The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate ofCompletion.

### **57. Final Account**

- 57.1 The Contractor shall supply to the Engineer a detailed final account of the total amount that the Contractor considers payable as full and final settlement of all claims under the Contract for items before the end of the Defects Liability Period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor's revisedaccount.
- 57.2 If reversal in characteristic of tender (L1 becoming L2) on account of excesses and savings in final account is observed, the Engineer/Employer shall be at liberty to restrict the final payment of BOQ items to the lowest amount evaluated of the bids considering the final quantities and the rates quoted including the rebates if any. Payment of variation items shall however be made at the rates approved by the Employer, within 90 days from thephysical completion ofwork.

### **58. Operating and Maintenance Manuals**

- 58.1 If "as built" drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract data.
- 58.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to theContractor.

### **59. Termination**

- 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

59.2 Fundamental breaches of Contract include, but shall not be limited to the following:

1. The contractor stops work for 28 days when no stoppage of work is shown on the current programme and the stoppage has not been authorized by the Engineer
2. The Engineer instructs the Contractor to delay the progress of the Works and the instructions is not withdrawn within 28 days;
3. The Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation
4. A payment certified by the Engineer is not paid by the Employer to the Contractor within 56 days of the date of the Engineer's certificate
5. The Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
6. The Contractor does not maintain a security which is required;
7. The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and
8. If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

59.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.

59.4 Notwithstanding the above, the employer may terminate the Contract for convenience.

## **60. Payment upon Termination**

60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a Certificate for the value of the work done less advance payments received up to the date of the issue of the

certificate, less other recoveries due in terms of the contract, less taxes due to deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

- 60.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the works, and the Contractor's cost of protecting and securing the Works and less advance payment received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to deducted at source as per applicable law.

## **61. Property**

- 61.1 All materials on the Site, Plant Equipments, Temporary Works and Works are deemed to be property of the Employer, if the Contract is terminated because of a Contractor's default.

## **62. Release from Performance**

- 62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

## **E. SPECIAL CONDITIONS OF CONTRACT**

### **63. LABOUR**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment of housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the site and such other information as the Engineer may require.

### **64. COMPLIANCE WITH LABOURREGULATIONS**

During continuance of the contract, the Contractor and his sub-contractor shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notification and bye laws of the State or central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notifications that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to the construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/Engineer shall also have the right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point to time.

SALIENT FEATURES OF SOME MAJOR LABOUR AND OTHER LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTIONS WORK

- A) **Workmen Compensation Act 1923**:- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- B) **Payment of Gratuity Act. 1972**:- Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- C) **Employees P.F. and Miscellaneous Provision Act 1952**:- The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33% The benefits payable under the Act are:
1. Pension or family pension on retirement or death, as the case maybe.
  2. Deposit linked insurance on the death in harness of the worker.
  3. Payment of P.F. accumulation on retirement/death etc.
- D) **Maternity Benefit Act 1951** :- The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- E) **Contract Labour (Regulation & Abolition) Act 1970**: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer, if they employ 20 or more contract labour.
- F) **Minimum Wages Act 1948** :- The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of Building, Roads, Runways are scheduled employment.
- G) **Payments of wages Act 1936**:- It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- H) **Equal remunerations Act 1979** :- The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against female employees in the matter of transfer, training and promotion etc.
- I) **Payments of Bonus Act 1965**:- The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20 % of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs. 2500/- per month or above Rs. 3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The Act does not

apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

- J) **Industrial Disputes Act 1947 :-** The Act lays down the machinery and procedure for resolutions of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- K) **Industrial employment (standing Orders) Act 1946 :-** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the State and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- L) **Trade Unions Act 1926:-**The Act lays the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have given certain immunities from civil and criminal liabilities.
- M) **Child Labour (Prohibition & Regulation Act 1986 :-**The Act prohibits employment of children below 14 years of age in certain occupations and process and provides for regulation of employment of children in all other occupations and processes. Employment of Child labour is prohibited in Building and Construction Industry.
- N) **Inter – State Migrant workmen’s (Regulation of Employment & Conditions of service) Act 1979:-**The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state).The inter-state migrant workmen, is an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.
- O) **The Building and Other Construction workers (Regulation of employment and Conditions of Service) Act 1996 and the Cess Act of 1996:-**All the establishments who carry on any building or other constructions work and employ 10 or more workers are covered under this Act.  
All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as canteens, First Aid facilities, Ambulance, Housing accommodations for workers near the workplace etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officers appointed by the Government.



- P) **Factories Act 1948** :-The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in the manufacturing process.
- Q) **Royalty charges**-The contractor shall pay the royalty to the competent authority as per rule. The **royalty** charges paid shall be borne by the contractor and shall not be reimbursed by the Employer.
- R) **Following Pollution control Acts and amendments made thereof from time to time shall be applicable.**
1. Water (Preservation and control of Pollution) Act, 1974
  2. Air (Prevention and Control of Pollution Act) 1981
  3. Environmental (Protection) Act 1986

The contractor must commit to adopting Environmental management plan for best energy use, waste management, the reduction of pollution as in EMS (Environmental Management system) ISO-14001- 2015

#### **65. ARBITRATION (GCC Clause 24)**

The procedure for arbitration will be as follows: -

- 24.1 If the Contractor is of the view that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to **Dy. Municipal Commissioner** (HOD-Streetlight Department) within 14 days of the notification of the Engineer's decision. If the issue is not resolved, any party can refer the matter for conciliation within 15 days from the decision given by the Dy. Municipal Commissioner.

#### **24.2**

- (a) For the work up to Rs.100 Cr., if any of the parties is not satisfied with the decision of the Add. City Engineer, both the parties have to refer to the Municipal Commissioner, Vadodra concerned for the conciliation process.
- ~~(b) For the work more than Rs.100 Cr., if any of the parties is not satisfied with the decision of the Superintending Engineer, both parties have to refer to the #Secretary, Roads & Building Department, Government of Gujarat for the conciliation process.~~

If the dispute is not resolved through the conciliation process, contractor may refer the dispute to Arbitration. Arbitration and legal matters/proceedings associated within this scope/tender shall be subject to Vadodra Court's Jurisdiction only. If the Contractor fails to refer a claim / dispute to the Higher Authority within 14 days of the notification of the Engineer's decision, the Contractor shall not be entitled to any additional payment/claim if he doesn't follow the above sequence in stipulated time. However, during such period, he would not stop the work in any case.

**66.**

- 1) The Tenderer shall have to give twelve months guarantee of all items against manufacturing defect from the date of commissioning.
- 2) The Tenderer shall make necessary storage arrangement with security.
- 3) Erection of all materials, sundries will be carried out as per technical specification. In absence of specification, work shall be carried out as per instruction of Engineer- in-charges.
- 4) The contractor shall provide all necessary materials, equipment's ,labours, etc. for erection, testing and commissioning work at his own cost and risk till completion.
- 5) In case of any dispute in the specification, term and conditions, the decision of the Deputy Municipal Commissioner shall be final and binding to the contractors.
- 6) The tender shall remain valid for acceptance for a period of 120 days from the date of opening of the price bid. The Tenderer shall not be entitled during the said period of 120 days to revoke or cancel his tender or to vary the tender or to vary the given or any term thereof. In case of tender revoking or canceling his tender or revoking the same or vary in regard to thereof, the Owner shall forfeit the earnest money paid by him along with the tender.
- 7) 2% EMD & 3% S.D shall be paid as per Clause no.16
- 8) Penalty for the late work completion shall be at the rate of 0.5% of the work order value per week and maximum up to 10%.
- 9) The rates quoted by the Tenderer shall be inclusive of all taxes and duties.
- 10) The successful Tenderer shall be required to execute an agreement within 15 days from the date of issue of the work order. In the event of failure on the part of the successful Tenderer to sign the agreement within the above stipulated time period the earnest money or his initial Security Deposit will be forfeited and the acceptance of the tender shall be considered as cancelled.

- 11) Conditional tender will not be accepted.
- 12) The price escalation or variation clause will not be accepted.
- 13) The material shall be dispatched only after third party inspection is completed and issuance of release note when it requires. The Tenderer shall have to arrange necessary storage arrangements at his cost if corporation will not have suitable place for storage.
- 14) VMC reserves the right to issue workorder in part or full to the successful bidder. Successful bidder will have no right to claim loss of business in this regard Contractor will not be allowed to start work before installing the caution board on both the end & all major crossing of the road. Caution boards shall be installed before commencement of the work and it shall be removed after commissioning of the work.
- 15) If safety measures will not be observed by the contractors then he will be responsible for any accident occur due to his negligence.
- 16) Incase of site clearance is not available due to any reason; suitable extension shall be given to the contract or to carryout the work.
- 17) In case of Wrong / Misleading / Misappropriate information / Certificate and references submitted by theTenderer,then his tender is liable to be rejected, EMD shall be forfeited and he will not be allowed to participate in future tenders.

**SECTION - 4**  
**CONTRACT DATA**

## #CONTRACT DATA

1. The Employers is [CL.1.1]  
Name: THE EXECUTIVE ENGINEER  
Address: 2nd floor, room no.-202,  
Streetlight Department,  
Vadodara Municipal Corporation,  
Khanderao Market Building,  
Rajmahal Road,  
Vadodara-390001  
Name of authorized Representative (will be intimated later)
2. The Engineer is The Executive Engineer, Streetlight Department,Vadodara  
Municipal Corporation.  
Name of Authorized Representative: The Executive Engineer, Streetlight  
Department, Vadodara Municipal Corporation, Vadodara.
3. The Defect Liability Period is 12 Moths from the date of [CL.1.1&33]  
Completion.
4. The Start Date shall be 1<sup>st</sup>days for the date of issue of the Notice to proceed [CL.1.1]  
with thework.
5. The Intended Completion Date for the whole of the works is [CL.1.1,17&2]  
**12 Months**after start of work with the following milestones:  
Milestone dates: [CL.2.2& 49.1]  
~~Physical works to be completed Period from the start date~~  
Milestone1i.e. 25% days.  
Milestone2i.e. 50% days.  
Milestone3i.e. 75.% days.  
Milestone4i.e. 100% days.
6. The Site is located atAcross Vadodara city and Outside city area. [CL.1.1]
7. The name and identification number of the Contract is: [CL.1.1]

**Item marked "N/A" do not apply to this Contract.**  
**Clause Reference With respect To section 3**

## SCOPE OF WORK

1. The scope of works consists of “Site Survey, Design & Engineering, Manufacturing, Testing at Works, Delivery to Site of Installation; Storage & Handling including Unloading & Shifting as Required; Cleaning & Assembly as required, Installation inclusive of all kind of Civil, Electrical and Structural, Testing, Commissioning, Synchronizing, Operation and Maintenance of Roof Top PV Solar Power Plant Project on top of the existing various Vadodara municipal Corporation building in Vadodara City for a period of 10 years after commissioning of the project and transfer the project in working condition to VMC after O&M period of 10 years.”
2. Bidder shall visit the respective sites and carry out survey for assessing the generation capacity details & data sheets, calculations, Generation assessment report, and Good for Construction (GFC) drawings including General Equipment layout, cable schedule, tray layout, earthing layout, lightning protection layout, Single Line Diagram (SLDs), etc. shall be submitted to VMC for approval. Successful Bidders need to give an undertaking to carry out O&M of the Power Plant for the contract duration at the quoted O&M Charges as per RFP for the approval of VMCL for issuance of project specific sanction letter(s). The bidder shall assist VMC in entering into a PPA/ wheeling agreement with MGVL which shall be executed in line with the PPA recommended by Ministry of New and Renewable Energy duly vetted by all concerned Govt. Departments.
3. Testing of materials at manufacturer's works/onsite according to relevant IS/tender specification.
4. **Corporation will appoint Third Party agency for inspection of materials at manufacturing work/on site and site works . Inspecting charges shall be paid by the Contractor.**
5. As per VMC required materials shall be delivered to site after third party inspection and without any damage during transportation and handling.
6. Material shall be dispatched FOR Vadodara in the store or at site within the Municipal limit as per instruction of Engineer In charged.
7. The detailed Scope of Work in accordance with this specification is elaborated below:  
Scope of Supply & Work includes all design, engineering, manufacture, procurement & supply of equipments and materials, testing at manufacturer's

works, inspection, testing at works, packing and forwarding, supply, transportation, receipt, unloading and storage at site (indoor and outdoor), associated civil works, Module mounting structure, PV Modules, Cables, Power Conditioning Units / Inverters, ACDB, associated protection system, remote monitoring system, other associated equipments for Rooftop Solar PV Plants, permits, licenses, insurance at all stages, erection, testing and commissioning of Grid Connected Photovoltaic Roof Top Solar plants and Performance demonstration with associated equipment and materials on EPC basis for cumulative approx. 50 kW Solar.

- In grid-connected solar photo-voltaic (PV) systems, electricity generated is fed into the building as well as existing equipment's loads that are connected to the grid through a service connection with surplus energy being fed into the grid and short fall being drawn from the grid. Grid-connected solar PV system shall 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, where by import kWh and export kWh are separately recorded and the Main meter shall be replaced by as per Discom suggested meter with necessary equipment's and structures. All the items in the systems should meet the Technical specification and standards mentioned in TENDER. Bidder shall also provide fixed/folding staircase to access all building's terrace/Roof for solar panel installation, cleaning and maintenance.
- All materials, accessories to be provided shall be of best quality and as per relevant IS standard. For all concrete works, unless and otherwise specified in soil investigation report, 53 grade ordinary portland cement, TMT reinforcement bar of Fe500(D) and structural steel of approved make to be used however prior approval of the make shall be obtained from VMC. Structural steel of Hot rolled steel with minimum Yield stress shall be 250 Mpa or Cold form with minimum yield stress shall be 350MPa is to be used.
- The EPC Contractor shall be obligated to perform following Scope of Work in relation to the Project. The Scope of Work of the EPC Contractor includes, but is not limited to, the following:
  - (A) Design, develop, procure, supply, construct, testing and commission, operate and maintain of W (AC) Grid Connected Rooftop, but is not limited to the following:
    - i) Solar PV modules.
    - ii) Components and parts used in Solar Roof top Systems should conform to the BIS or IEC or other international specifications, wherever such specifications are available and applicable.
    - iii) (Module Mounting Structures(MMS), Mounting frames, structures, array Foundation Piling round/grouting on terrace), earthing grid design, and module inter-connection.

- iv) All System Junction boxes.
- v) Grid interactive Power Conditioning Unit/ Inverters with web based Remote Monitoring System
- vi) MPPT–Max power point tracking built in the PCU
- vii) Appropriate AC power evacuation panels or inverters, according to Project Site requirements, with busbars(in-built or otherwise) and circuit breakers.
- viii) The nominal steady electrical characteristic of the system are as follows:
  - a. Single/Three phase AC at 50 Hertz plus or minus 0.5 Hertz
  - b. Nominal voltage of 230V/415V/11KV with +10% to -12.5% variations.
- ix) Protection/isolation systems.
- x) Power and Control Cables, Cables & connectors of solar grade, which can withstand harsh environment conditions (high temperature, UV Radiation, rain, dirt, microbes etc for 25 years).
- xi) Earthing system for PV Array, DC power system, lightning protection system.
- xii) Data monitoring system with remote monitoring facilities (Completely in scope of bidder).
- xiii) Transportation, unloading, and loading of all equipment at Project Site.
- xiv) Project Management including adherence to all requisite safety practices.
- xv) The Project shall be designed and capable of being synchronized and within a frequency range of 47.5 to 52 Hz and voltage of 230V/415V with single/three phase.
- xvi) Short circuit rating: As a part of the detailed design process, the Solar Company shall calculate the short circuit rating (minimum and maximum), and supply this information to the Procurer
- xvii) Firefighting (fire extinguisher and sand bucket with stand)
- xviii) Making arrangements for module cleaning in the Solar plant area with cleaning mechanism;
- xix) The existing meter room can be utilized after proper designing and approvals of VMC, Inverters, ACDBs, DCDBs, and other equipment's can be kept in the shade type structure.
- xx) The Bidder/ EPC Contractor shall also provide fixed / folding staircase to access building's terrace/roof for Solar panel Installation, cleaning and maintenance.
- xxi) Confirm feasibility of mentioned Solar PV System capacity along with site visit report, design and construction of foundations/grouting for holding module mounting structures without puncturing the roof. If also as per site requirement, the roof needs to be punctured, the EPC Contractor shall repair the same as per existing roof design and shall ensure the aestheticity.
- xxii) Trimming of tree branches or part of a tree affecting sufficient irradiation on the system with modules mounted on it or causing shadow on the modules over the installation and commissioning time period or in future may be allowed only after approval from VMC.



- xxiii) Maintaining proper drainage of rainwater over terrace through out the installation and ensuring installation of proper piping systems on roof tops where there is high probability of water logging. Installation of the same shall be in the scope of the EPC Contractor.
- xxiv) Water arrangement for module cleaning should be solely in the scope of the EPC Contractor. EPC Contractor shall ensure that good quality of water available for the cleaning of module.
- xxv) Cables to be laid over GI/SS trays not obstructing the movement on the terrace as per site requirement, installation of insulated clamps at places where the cables need perfectly horizontal climbing and ensuring that the cables do not runaway from the trays by tying the cables along with the tray using SS cable tie(s).
- xxvi) Before commencement of work, the EPC contractor has to obtain all approvals for related drawings to be obtained from the concerned authorities including GEDA/Gujarat State Designated Agency, CEI, DISCOM, VMC etc..
- xxvii) All drawings shall conform to relevant IS/IEC standards.
- xxviii) Special care to be taken while designing all structures for modules to cater to heavy rain fall, strong winds and earthquake that may be prevalent in the area.
- xxix) Serial Number (identification mark) must be permanently marked on all major components of the SPV systems and shall be fixed with strong adhesive on each equipment, as approved by VMC/TPE Agency.
- xxx) Undertake Pre-commissioning and Commissioning of all supplied equipment.
- xxxi) Test running of the grid-connected solar Facility including load trial at Project Site, prior to hand over and commencing energy export for metering.
- xxxii) Grid commissioning; the plant needs to be grid interactive. Interconnection points to be checked and certified by VMC/TPE Agency for accuracy and safety.
- xxxiii) Installation of Main Meter and Backup Meter shall be done by the EPC Contractor and the EPC Contractor shall submit drawings for grid interface for each individual powerpack and get approved prior to commencement of work on Project Site. Necessary approvals and testings of all energy meters shall be as per standards of CEIG/DISCOM.
- xxxiv) Payment of all statutory fees and charges pertaining to the MGVL connection shall be the primary responsibility of the Contractor. These costs shall be reimbursed by the VMC only after the satisfactory completion of the project and verification of original payment vouchers completed the work contractor shall be reimbursed from VMC.
- xxxv) Commissioning certificate from GEDA/Gujarat State Designated Agency/ DISCOM/ GoG designated authority for the Facility.

(B) General Instructions:

- i) Construction water and construction power shall be the responsibility of the EPC Contractor. The water needed and the power consumed during construction phase shall be taken from sources on a chargeable basis by the EPC Contractor.
- ii) Security, safety, watch, and ward of all material sites shall be the responsibility of the EPC Contractor.
- iii) The EPC Contractor to obtain comprehensive insurance cover for the Project.
- iv) Liaison with statutory authorities as applicable for all the Project approvals.

- v) Expenses for any otherworks, supply of material, and providing services required for the successful commissioning and operation of the Facility, but not specifically mentioned in this document.
- vi) "Contractor Safety Management" to be strictly complied with by the EPC Contractor throughout Project activity as per safety rules of VMC.`
- vii) First-aid medical acilitiesat the Project Site during construction to be provided by the EPC Contractor.
- viii) All local labour, employment, and other issues shall be handled independently by the EPC Contractor.
- ix) The entire responsibility and risk relating towards the workforce working at the Project Site, and compliance of different statutory regulations like Workman Compensation Act, ESIC, Factory Act 1948, Contract Labour Regulation, and Abolition Act 1970, Shop and Establishment Act 1948,and other Statutory regulatory bodies shall solelylie with the EPC Contractor.The EPC Contractor shall also be solely responsible for payment of Wages, PF, Bonus, Retrenchment Compensation Leave etc. applicable as per various statutory regulations to their entire work force, and keep Railways in demnified in this regard against any Claim.

(C) Statutory Clearances:

The following Statutory Clearances to be obtained by the EPC Contractor from CEIG /DISCOM/GEDA/Gujarat State Designated Agency as directed by VMC/TPEAgency:

- i) Nodel Agency Approval (GEDA/ DISCOM Registration/ Gujarat State Designated Agency)
- ii) Building and Architectural Drawings approvals from relevant authorities, wherever required
- iii) Factory inspector approval for drawings, wherever required
- iv) Electrical system approval (Electrical Inspector)-CEIG
- v) Fire System approval,wherever required
- vi) DISCOM Approval (Connectivity & Metering-Main)
- vii) All equipment, accessories, materials, civil construction & erection works should comply with statutory requirements and IS standards.
- viii) All statutory requirements for working at the project site like labour registration, workman compensation policy, ESIC etc. to be complied with by the Contractor before deployment of resources at the Project Site.
- ix) All Statutory approval and other Charges (Suchas GEDA/Gujarat State Designated Agency Registration Charges, Main Meter Testing Charges & DISCOM Connectivity Charges, Any CEIG Registration Charges, etc) shall be pay by Successful Bidder first after reimbursed the same charges from the VMC.
- x) All liaising work shall be in scope of Successful Bidder.

(D) Undertaking:

The EPC Contractor shall give undertaking that for the plant period of 10(Ten) years all the power packs covered under this project will be operated, maintained and repaired whenever necessary so that all Units a reoperative and export maximum possible energy to the grid This shall be ensured through undertaking services that include,but are not limited to,the following:-

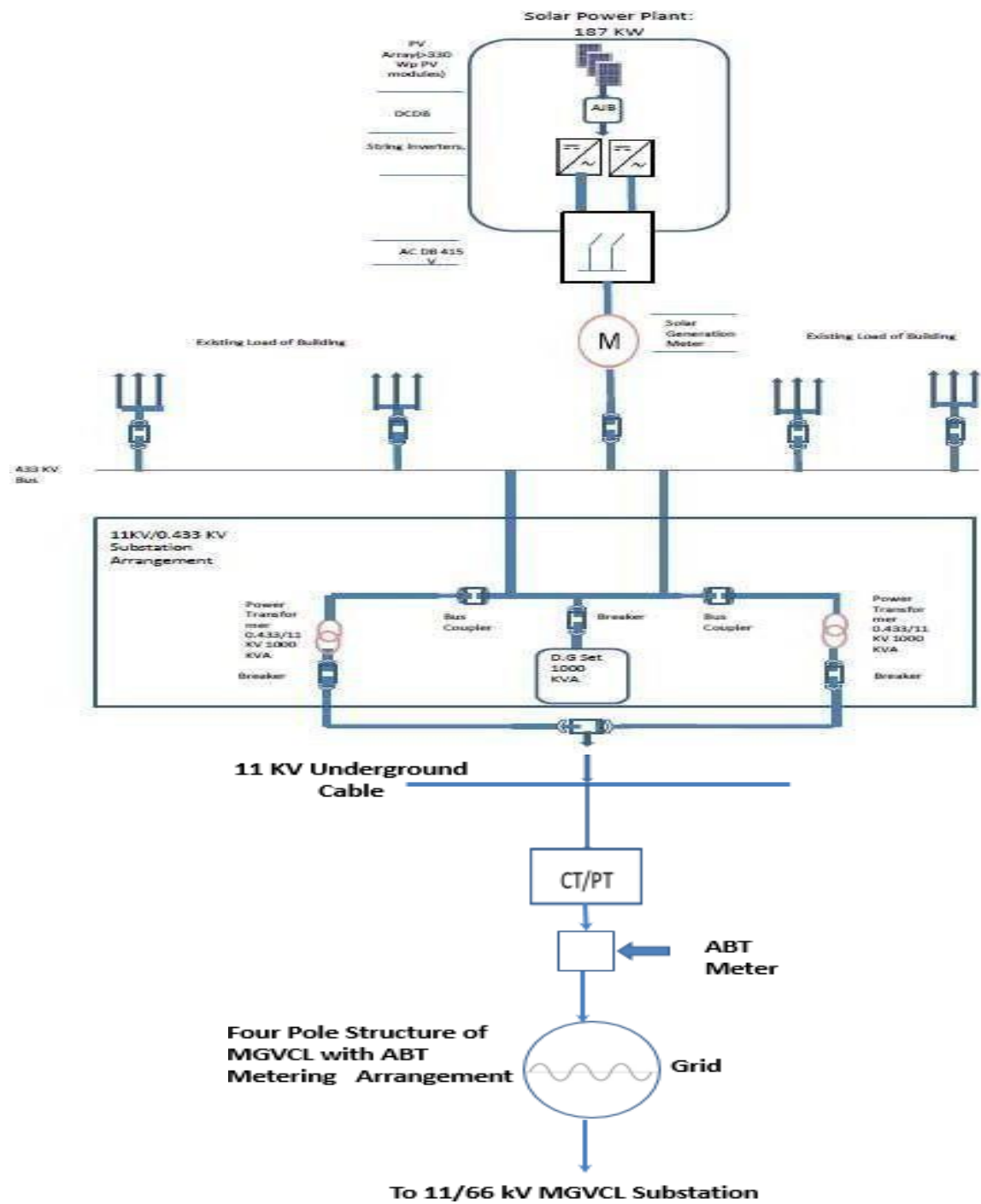
- i) Daily monitoring of plant performance.
- ii) Supply of all technical, production/operation data and information through amonthly report.
- iii) Planned visits on a monthly, quarterly, and annual basis for preventative and corrective maintenance which include, but are not limited to the following:
  - a. Clean solar panels on weekly basis or as appropriate to get maximum output from the panels.
  - b. Check inverter cabinets (ventilation openings, lighting, leakages in inverter cabinets and cleaning of filters) and inverter maintenance. EPC Contractor will keep the necessary spares at the Project Site.
  - c. Check security and fire protection system.
  - d. Check parts for corrosion.
  - e. Check the state of tightness of connections, fuses, main junction boxes,etc.
- iv) Adequate spares to ensure uninterrupted operation and minimum downtime during the entire period.
- v) Comprehensive Operation and Maintenance for Ten (10) years of the Facility upto the energymeter shall be the responsibility of the EPC Contractor.
- vi) Comprehensive Operation and Maintenance for Ten (10) years during entire life of the systems shall include supply of spares, consumables, machine break down insurance, transpiration,and general comprehensive insurance covering fire,earthquake and provision of security personnel with the insurance policy which shall be taken in the VMC's as the primary beneficiary. Copies of the Insurance Policies are to be given to the concerned department, as and when taken/renewed.
- vii)All risks associated with lapses or delays in insurance coverage, during the construction period,shall be at the EPC Contractor's cost.
- viii) The EPC Contractor shall ensure efficient operation of the Project and the associated facilities to achieve the maximum power generation from the Project. For this purpose the EPC Contractor shall engage the services of adequate number of Engineers and Technicians. The EPC Contractor shall also attend to all failures, rectifications, breakdown, comprehensive Operation and Maintenance checks. Daily Management Information System (MIS) reports with generation and downtime analysis data shall be made available to VMC by E-mail.
- ix) The EPC Contractor should not misuse the area and/orassign responsibility for the safety of machinery within the premises.

- During the execution of work, Successful Bidder may propose Design & Detailed Project for additional AC Capacity other than mentioned (maximum up to 25%) subject to technical acceptance & administrative approval of VMC.

## • **KEY COMPONENTS OF SOLAR ROOF TOP SYSTEM**

- The Key components of solar Ground Mounted and roof top system areas follows:-
- Solar Panels - A solar panel (also solar module, photovoltaic module or photovoltaic panel) is a packaged, connected assembly of photovoltaic cells and it is used as a component of a Solar Rooftop Solar System to generate and supply electricity. Solar panels usually form a part of a large solar array (multiple panels connected together).
- Junction box- An electrical junction box is a container for electrical connections, usually intended to conceal them from sight and tampering. A small metal or plastic junction box may form part of an electrical conduit wiring system in a building, or may be buried in the plaster of a wall, concealed behind an access panel or cast into concrete with only the lid showing. It also includes terminals for joining wires.
- Inverter / Power Control Unit - A solar inverter converts the variable direct current output of a photovoltaic (PV) solar panel into a utility frequency alternating current that can be fed into a commercial electrical grid or used by a local, off-grid electrical network. It is a critical component in a photovoltaic system, allowing the use of ordinary commercial appliances. Solar inverters have special functions adapted for use with photovoltaic arrays, including maximum power point tracking and anti-islanding protection.
- Manual/Automatic disconnect switch-It is an automatically /manually operated electrical switch designed to protect an electrical circuit from damage caused by overload or shortcircuit. Its basic function is to detect a fault condition and, by interrupting continuity, to immediately discontinue electrical flow.
- The proposed Solar Rooftop and Ground Mounted System shall be developed across a available rooftop and Ground Space. Rooftop and Ground Mounted shall have an individual solar PV based power plant (also called power pack) and each power plant shall be connected to the grid at an appropriate voltage based on the size of the plant and the availability of the grid.

## *Indicative Schematic Single Line Diagram*



## GENERAL SYSTEM DESIGN GUIDELINES

- Each individual solar PV system shall be developed based on the actual availability of space on the Ground Mounted, rooftop and convenience of the VMC. The broad general guidelines for the development of individual plants shall follow the following key points:
  - i) Each individual plant capacity may vary based on Ground/ roof sizes or systemsizes. Individual plant capacity may vary as per the technical feasibility of the location as per the Solar Policy.
  - ii) Solar rooftop plant on VMC's different building shall feed AC power to the distribution grid of the VMC, Vadodara as per power evacuation and interconnection requirements.
  - iii) Each plant shall consist of a solar PV array, a fixed solar PV array support structure, junction box, DC cabling, DC distribution box, inverter and power control unit, AC cabling, AC distribution box, main distribution panel and meters.
  - iv) The individual Solar PV arrays shall be installed on existing locations of land, buildings & gardens using fixed solar PV array support structures.
  - v) The individual junction boxes and DC cabling shall be installed on the existing locations of the installed PV power plants.
  - vi) The individual inverter and the power control units (PCU's) shall be installed either in a control room/closed but air ventilated space provided in the respective buildings or next to the panel arrays in case of large buildings based on considerations like safety, efficiency and loss reduction.
  - vii) Individual DC and AC distribution boxes, DC and AC cabling, energy meters and main distribution panel shall be installed either in the control room or in an appropriate open space provided in the respective building.
  - viii) Solar PV system must be able to synchronize with Diesel Generator set. Necessary arrangement for DG-PV controller shall be incorporated in to the design as per VMC/ local DISCOM requirement.
  - ix) DG-PV controller shall be able to monitor the load on the DG and in any case should not allow to inject PV power into DG set. Necessary protection for the installation to be provided by EPC contractor.
  - x) A weather monitoring system shall be installed by the Contractor for measurements of plane and global irradiance, ambient and module temperature, wind etc. these data shall be used for calculating the adjusted NEEGG and performance calculation of solar plant. The weather monitoring system has to be installed on any of the central buildings or open grounds, location shall be decided by VMC.

### **Net Electrical Energy Generation Guarantee(NEEGG)**

- The Bidder shall be given undertaking the Net Electrical Energy Generation Guarantee (NEEGG) for Ten (10) years period at the solar metering point. Solar meter shall be placed near to interconnection panel at customer LT Panel. The Bidder shall confirm NEEGG per annum (i.e. Summation of Net Energy Generation from Solar System) after considering proposed configuration and all local conditions, solar insolation, wind speed and direction, air temperature & relative humidity, barometric pressure, rainfall, sunshine duration, grid availability and grid related all other factors and losses due to near shading, incidence angle modifier, irradiance level, temperature loss, array loss, module quality loss, module array mismatch loss, soiling loss and various inverter losses etc. Minimum NEEGG given in Annexure has to be confirmed and agreed by Bidder. No deviation is allowed.

- It would be the responsibility of the bidder to maintain the SPV based power plant and it's all the equipment's in perfect condition at his own cost for the entire period of 10 years for which VMC shall pay the agreed O&M charges only. The replacement/ repair/ modification of any/ all equipments has to be carried out by the contractor at his own cost for the entire period of contract, so as to give the min. 95% of claimed net energy generation (NEEGG) for particular year "i.e., NEEGG as per technical specification. VMC shall not be responsible for any break down/ failure of any equipment to any reason there of and that the contractor shall maintain requisite stock of spares of various equipments. The bidder may take a suitable type of insurance to meet out the above purpose.
- Bidders are expected to undertake their own study of solar profile and other related parameters of the area and make sound commercial judgment about power output i.e., Net Electrical Energy Guaranteed Generation It shall be the responsibility of the Bidder to access the corresponding solar installation values and related factors of solar plant along with expected grid availability. The Bidder should access all related factors about the selected Site for the Project and then give acceptance of the NEEGG for the proposed Project.
- The EPC contractor shall submit Declaration for acceptance of NEEGG for 10 years O&M period as per the Annexure at the time of technical submission of Bid on Rs 300 Non-Judicial Stamp paper with notarized. mandatory for technical qualification .
- The degradation in NEEGG quoted for any year shall not be more than 1% of the quoted for the immediate previous year. If the Bidder anticipates any degradation of the modules during the first year, it shall be taken care of to provide additional capacity of solar PV modules to meet guaranteed generation at the end of first year to avoid liquidated damages/compensation on account of Performance Guaranteed Generation. The NEEGG of consecutive year should not be more than the previous year's NEEGG. Bids not following these conditions shall be summarily rejected.
- **Operation and Maintenance Work :**  
The Contractor shall undertake comprehensive Operation and Maintenance (O&M) activities for a period of 10 (TEN) years from the date of guarantee period of completion of SETC work maens after one year.For 1 st year is in the scope of guarantee/waraanty period, vmc should not pay the o&m charges .

**Signature of Tenderer(s) with the seal of the firm.**

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(C) Other Items		[CL.1.1]
Any Other Items as required to fulfill all contractual obligations as per the Bid documents.		
10.	The following documents also form part of the Contract: As per clause 2-3	[CL.2.3(9)]
11.	The law which applies to the Contract is the law of Union of India	[CL.3.1]
12.	The language of the Contract documents is English	[CL.3.1]
13.	Limit of subcontracting 25% of the Initial Contract Price	[CL.7.1]
14.	The Schedule of Other Contractors	[CL.8]
15.	The Schedule of Key Personnel As per Annex – II to Section I	[CL.9]
16.	<ul style="list-style-type: none"> <li>The minimum insurance cover for physical property, injury and death is Rs. 5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, the contractor will pay an additional premium necessary to make insurance valid for four occurrences always.</li> <li>Contractor has to submit CAR policy for the project.</li> <li>Hon.Supreme Court/High Court guideline as well as implementation of manual Scavenging Act &amp; Rules(2013 including latest amendment) must be strictly followed by bidder for Drainage work for better safety workmen.all Work must be carried out by using safety equipment and by mechanical equipment by the bidder.</li> <li>The Bidder will be responsible to pay minimum Rs.30Lakhs in addition to the compensation paid by the Government in case of Death of Workman while execution of the work.</li> </ul>	[CL13]
17.	Site Investigation report :VMC did not have any data readily available. Same shall be assessed by bidder before bidding.	[CL.14]
18.	The Site Possession dates shall be .....	[CL.21]
19.	The period for submission of programme for approval of the engineer shall be 21 days from the issue of Letter of Acceptance.	[CL. 27.1]
20.	The period between program updateswillbe days.	[CL.27.3]
21.	<del>The amount to be withheld for late submission of an updated programme shall be RS 0.50 lakhs</del>	[CL. 27.3]
22.	<del>The following events shall also be Compensation Events</del> <del>Substantially adverse ground conditions encountered during the course of execution of work not provided for in the bidding document.</del> <ul style="list-style-type: none"> <li><del>(i) Removal of underground utilities detected subsequently</del></li> <li><del>(ii) Significant changes in classification of soil requiring additional mobilization by the contractor, e.g. ordinary soil to rock excavation,</del></li> <li><del>(iii) Removal of unsuitable material like marsh, debris dumps, etc. not caused by the contractor.</del></li> </ul>	[CL. 44]



- ~~(iv) Artesian conditions~~
- ~~(v) Seepage, erosion landslide~~
- ~~(vi) River training requiring protection of permanent work~~
- ~~(vii) Presence of historical, archeological or religious structures, monuments interfering with the works~~
- ~~(viii) Restriction of access to ground imposed by civil, judicial, or military authority~~

23. The currency of the Contract is Indian Rupees [CL. 46]
24. **Deleted** [CL. 47]
25. ~~The proportion of payments retained (retention money) shall be 6% {CL. 48} from each bill subject to a maximum of 5% of final contract price.~~

~~26. Amount of Liquidated damages for For Whole of work {CL.49} delay in completion of works — (1/2000)<sup>th</sup> of the Initial contract price, rounded off to the nearest Thousand, per day. For sectional Completion (wherever specified In item 6 of Contract data) (1/2000)<sup>th</sup> of initial contract price for #5 km Section, rounded off to the nearest thousand per day.~~

~~27. Maximum limit of liquidated damages 10 percent of the Initial {CL.49} For delay in completion work — Contract Price rounded off to the nearest thousand~~

~~28. Amount of Bonus for early completion Amount of bonus for early completion of work shall be given as per CL.50 of Section-3~~

~~29. Maximum limit of bonus for early 5 percent of the Contract {CL. 50} Completion of work Price~~

~~30. The amount of the advance payment are: {CL. 51 & 52}~~

<del>#Nature of Advances</del>	<del>Amount (Rs.)</del>	<del>Conditions to be fulfilled</del>
--------------------------------	-------------------------	---------------------------------------

<del>I Mobilization 10% of the contract Price — Bank Guarantee. (to be drawn</del>	<del>On submission of unconditional</del>	<del>before the end of 20% of the contract period). The contractor may furnish four bank guarantees of 2.5 % of each valid for the full period.</del>
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ii <del>Equipment</del>	90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 5% of the Contract Price	After equipment is brought to site (provided the Engineer is satisfied That the equipment is required for performance of the contract) and on submission of unconditional Bank Guarantee for amount of advance
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iii Secured ~~Deleted~~

Advance for Non-persish able material Brought to site

(The advance payment will be paid to the Contractor no later than 28 days after fulfillment of the above conditions).

31. ~~Repayment of advance payment for mobilization and equipment~~ {CL.51.3}

The advance loan shall be repaid with percentage deduction from the interim payments certified by the Engineer under the Contract. Deduction shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 20 percent of the Contract Price or 6 (six) months from the date of payment of first installment of advance, whichever period concludes earlier, and shall be made at the rate of 20 percent **(collectively for both Mobilization Advance and Equipment Advance)** of the amounts of all Interim Payment Certificate until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clause 17 and 28.

32. ~~Deleted~~

33. ~~The securities shall be for the following minimum amounts equivalent {CL. 52} As a percentage of the Contract Price:~~

~~Performance Security for 5 percent of contract price plus Rs. .... (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5~~

~~The standard form of Performance security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents.~~

34. ~~The Schedule of Operating and maintenance Manuals.....N/A. {CL.58}~~

35. ~~The date by which "as built" drawings (in scale as directed) in 2 sets {CL. 58} are required within 28 days of the issue of certificate of completion of the whole or section of the work, as the case maybe.~~

36. ~~The amount to be withheld for failing to supply "as built" drawings {CL. 58}~~

by the Date required is **Rs.1,00,000/- (One Lakh).**

- ~~37. The following events shall also be fundamentals breach of contract:  
{CL.59.2} "The Contractor has contravened Sub-clause 7.1 and Clause 9  
of GCC"~~
- ~~38. The percentage to apply the value of the work not completed representing  
{Cl 60} the Employer's additional cost for completing the Works shall be  
20 \_\_\_\_\_ percent.~~

**SECTION - 5**  
**TECHNICAL SPECIFICATION**

## **TECHNICAL SPECIFICATIONS**

### **TECHNICAL SPECIFICATIONS:-**

TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG(Re-Invite).

The proposed projects shall be commissioned as per the technical specifications given below.

A Grid-connected Rooftop SPV Power Plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs, Weather Monitoring Systems, Discom approved Energy Meters etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

❖ Solar PV system shall consist of following equipment's/components:

- Solar PV modules consisting of required number of Crystalline Bifacial /TOP Con PV modules for Rooftop project.
- Inverter, Grid interactive Power Conditioning Unit with web based Remote Monitoring System
- Module Mounting Structures
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories
- Civil Works, etc.

### **❖ SOLAR PHOTOVOLTAIC MODULES**

The Solar PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215 and IS14286. In addition, the modules must conform to latest edition of IEC/IS 61730 Part 1 requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS. For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC/IS 61701.

All modules shall be certified as per the IEC 62804 Certified PV modules should be PID free, documents for the same should be submitted with conditions of the PID test should be for a humidity of 85 % and a cell temperature of 85 °C at 1000 Volts, IEC 61701.

The certified Bill of Material (BOM) to be used in the PV Modules should be the same as used during the IEC certification of reference PV Module certified by renowned agency like TUV, UL, etc.

The total solar PV array capacity (kWp) should not be less than allocated capacity (kW) and should comprise of solar crystalline Bifacial Solar PV modules of not less than 550 Watts and with minimum 20% efficiency to be used. Wattage range of PV module is above 550 W. Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.

PV modules must be tested and approved by one of the IEC/MNRE authorized test centers. Bidder shall submit Type test report as mentioned in the Tender from approved IEC / MNRE authorized test lab. VMC/ TPE Agency may depute their engineer for material inspection at OEM factory prior to dispatch.

The module frame shall be made of corrosion resistant materials, preferably having anodized

aluminum.

SPV module shall have module safety class-II and should be highly reliable, light weight and must have a service life of more than 25 years.

The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.

The rated output power of any supplied module shall have tolerance up to + 3%. No negative tolerance in the rated capacity of solar PV module is allowed.

The module mismatch losses for modules connected to an inverter should be less than 1%.

The SPV module shall be made up of high transmissivity glass & front surface shall give high encapsulation gain and the module shall consists of impact resistance, low iron and high transmission toughened glass. The module frame shall be made of corrosion resistant material, which shall be electrically compatible with the structural material used for mounting the modules.

All materials used for manufacturing solar PV module shall have a proven history of reliability and stable operation in external applications. It shall perform satisfactorily in relative humidity up to 85% with temperature between -40°C to +85°C and shall withstand adverse climatic conditions, such as high-speed wind, blow with dust, sand particles etc for wind speed of 225 km/hr on the surface of the panel as per IEC 61730 & IEC 62817.

Modules only with the same rating and manufacturer shall be connected to inverter. Modules shall compulsorily bear following information in the form of ID encapsulated with solar cell in the manner so as not to cast shadow on the active area and to be clearly visible from the top.

The SPV modules shall have suitable encapsulation and sealing arrangements to protect the silicon cells from environment. The encapsulation arrangement shall ensure complete moisture proofing for the entire life of solar modules.

The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.

The module shall be provided with a junction box with provision of sealed type and with arrangement for provision of min. 3 by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP- 67 rated.

IV curves at STC for each PV module should be provided by bidder.

VMC or its authorized representative reserves the right to inspect the modules at the manufacturer's site prior to dispatch.

Plants installed in high dust geographies in Gujarat must have the solar modules tested with relevant dust standards (Applicable standard would be IEC 60068-2-68 or equivalent).

Before finalization of Solar PV Module Vendor, QAP along with Grade A PV Cell shall be approved by VMC.

Modules deployed must use a RF identification tag.

The following information must be mentioned in the RFID used on each module. RFID tag shall be inside laminate only and must contain following information:

- Name of the manufacturer of the PV module
- Name of the manufacturer of Solar Cells.
- Month & year of the manufacture (separate for solar cells and modules)
- Country of origin (separately for solar cells and module)
- I-V curve for the module Wattage,  $I_m$ ,  $V_m$  and FF for the module
- Unique Serial No and Model No of the module
- Date and year of obtaining IEC PV module qualification certificate.
- Name of the test lab issuing IEC certificate.
- Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001
- Warranties
- Material Warranty:  
Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects(including Potential-induced degradation [PID] effect) and/or failures specified below for a period not less than twenty five (25) years from the date of sale to the original customer ("Customer")
- Defects and/or failures due to manufacturing
- Defects and/or failures due to quality of materials
- Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option.

#### **Performance Warranty:**

More than 4.5 Unit /kw /day (Actual) (1Year Avg) With 10 year Product warranty and 25 year Linear Power Warranty includes all mechanical and electrical parameters of the Solar panel.

The manufacturer should warrant the output of Solar Module(s) If, Module(s) fail(s) to exhibit such power output in prescribed time span, the Contractor will either deliver additional PV Module(s) to replace the missing power output with no change in area of roof used or repair or replace the PV Module(s) with no change in area of roof used at VMC's sole option. Total roof available from VMC is fixed and the bidder shall design the plant so that in this case he has enough space within this roof to accommodate additional capacity.

#### **MODULE MOUNTING STRUCTURE (ARRAY STRUCTURE)**

Scope of work under this section covers the provision of labour, tools, materials and performance of work necessary for the design, manufacture, quality assurance, quality control, shop assembly, shop testing, delivery at site, and preservation, installation, commissioning, performance and acceptance testing of Module Mounting Structures as per the specifications here under, complete with all auxiliaries, accessories, spare parts and warranting a trouble free safe operation of the installation.

The Module Mounting Structure (MMS) should be designed for an optimum seasonal tilt angle so as to meet the offered NEEGG. The angle should be systematically optimized for maximum energy generation throughout the year based on location and local weather variables for each module technology. Bidder has to carry out proper shadow analysis of proposed area to meet offered NEEGG. MMS structure design is combination of two elements named Substructure (Foundation) and Super structure. Bidder must submit the all the quality test documents and test certificates complying with the requirement of the structure. Suitable provision for mounting DWC pipes for routing DC cable from Array to Inverter must be provided (Separate

DWC Pipe for Positive and Negative DC Cables as mentioned elsewhere in this tender document).

#### Consideration for Solar PV installation on Roof Top (RCC & Sheet Metal)

Below mentioned consideration are to be kept in mind by contractor for design of total roof top installation.

Contractor has to ensure the roof strength by carrying out necessary Non destructive test like Ultraviolet test and Rebound hammer test for RCC and for Sheet metal roof ensure the strength of underlying structural members strength for above proposed systems dead load and wind load by necessary calculations wherever required .

Contractor has to consider that maximum permissible load of total proposed installation on the RCC as well as Sheet metal roof shall not be more than 90 kg/sqmtr and 25 kg/Sq.mtr respectively.

Contractor can use Precast Reinforced Blocks and concrete foundations, anchor fasteners for stability of the proposed systems. For using anchor fastener permission from VMC is required. VMC has right to reject or accept the proposal of using anchor fastener on RCC roof and it shall be binding to contractor.

In case of using anchor fasteners Method Company's (VMC's) decision shall be binding on contractor.

In case of installation on sheet metal roof, contractor has to ensure that installation is water tight. Contractor has to fill the hole drilled in sheet metal for anchor fastener with proper sealing agent.

In case of installation on sheet metal, contractor has to ensure the strength, location and spacing of underlying the structural members.

In case of installation on sheet metal contractor has to follow PPE regulations.

Contractor has to repair all damaged structure after completion of the installations as per existing structure.

Curing of concrete foundations shall be done thrice a day and be maintained for a period of seven days from the date of casting. Concrete foundation is to be painted as per existing structure.

All design and drawing are to be submitted for approval in Editable, AutoCAD, STAAD file & PDF format to Company or its designated agency before starting the work. The submitted drawing and design shall be certified and stamped by licensed structure designer.

Design of the foundation and structure shall be done for 25 years life such that structure strength shall not reduce for designed life.

The Contractor has to ensure and arrange sufficient lighting arrangement for all activities during night time.

Structure shall be earthed separately by maintenance free earthing.

Factor of safety shall be considered as 1.5 for designing the system.



Below mentioned consideration are to be kept in mind by contractor for design of Superstructure for MMS:

The MMS should be safe, and designed to allow easy replacement of any module and easy access to the O&M staff. It should be designed for simple mechanical and electrical installation, should support Solar PV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly and there should be no requirement of welding or complex machinery at site.

Irrespective of design, none of the components shall be less than 2mm in thickness.

The array structure shall be so designed that it will occupy minimum space without sacrificing the output from Solar PV panels at the same time it will withstand design wind speed as per wind zone of the plant location.

It shall support Solar PV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly. There shall be no requirement of welding or complex machinery at site and is strictly not allowed.

The frames and leg assemblies of the array structures shall be made of hot dip galvanized steel per ASTM A123.

All design and drawing are required to be submitted in Editable, AutoCAD, STAAD file & PDF format for approval to Company or its designated agency before starting of work. The submitted drawing and design shall be certified and stamped by licensed structure designer.

Design of the super structure (Mounting steel structure) shall be done for 25 years life such that structure strength shall not reduce for designed life.

In case of galvanization of structures, specific requirement for thickness of galvanization should be at least minimum 80 microns at any point of the galvanized structure. No averaging is allowed for measuring the thickness of galvanization. Inner side galvanization with same specification of any hollow components of module mounting structure is mandatory. Galvanized structure is required to be sent to third party laboratory test for confirmation of the mass of zinc applied on structure.

All nuts and bolts (fasteners) shall be made up of very good quality stainless steel of grade SS 304 required for module fixing. Other fasteners shall be of HDG of 8.8 grade.

Modules shall be clamped / bolted with the structure properly. The material of construction of clamps/bolts shall be Al / Steel. Clamps / bolts shall be designed in such a way so as not to cast any shadow on the active part of a module.

Module mounting structures shall also be earthed through proper separate earthing

Factor of safety shall not be taken less than 1.5 for all design calculation.

For multiple module mounting structures located in a single row, the alignment of all modules shall be within an error limit of 10 mm in vertical / horizontal line.

The Module Mounting Structure design shall be certified by a structural engineer and it is mandatory.

Minimum clearance between RCC roof and lowest edge of module shall be minimum 300 mm.

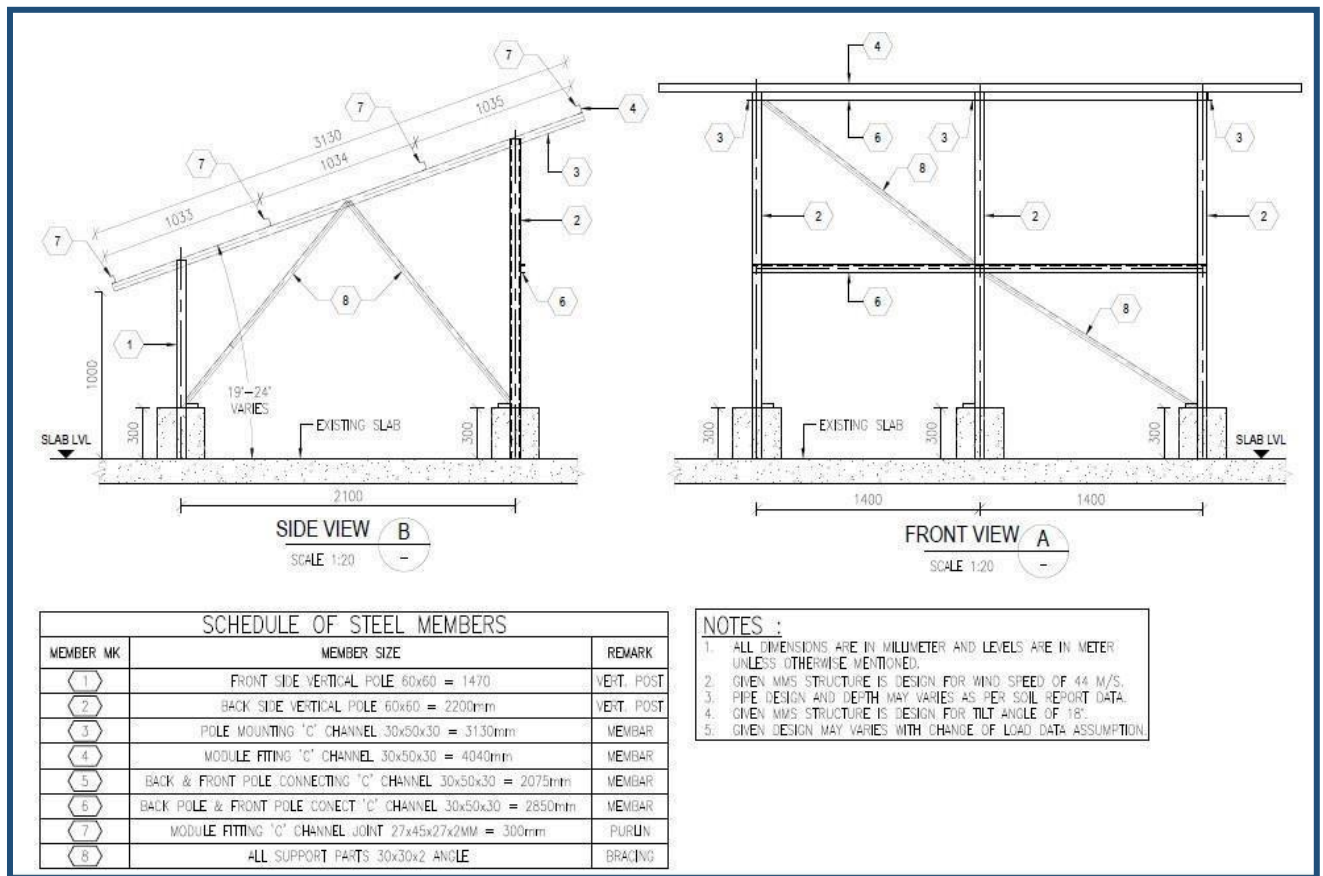
Irrespective of design, none of the components shall be less than 2 mm in thickness

All the cables were aesthetically tied to module mounting structure

All AC and DC cables shall be laid in HDG/FRP cable tray. All string cables shall be passed from UPVC and DWG pipes.

The Contractor has to ensure and arrange sufficient lighting arrangement for all activities during night time.

VMC will provide water connection at one point, contractor has to take extend UPVC pipe line from the provided connection for module cleaning.



Ref .Drawing for Indicative Rooftop Solar PV Module Mounting Structure Design

**Pre-dispatch Inspection of Module Mounting Structures (MMS of Solar Rooftop Power Plant):**

The Contractor shall provide pre-dispatch inspection call to VMC for inspection at manufacturer works, as per VMC approved drawings, for all fabricated items such as steel structure members, galvanization process etc. Prior to inviting VMC for pre - dispatch inspection, vendor shall submit detailed quality assurance plan (QAP) for VMC approval. QAP shall include type tests, routine tests, factory acceptance tests, sampling plan, applicable standards etc. After the inspection, complete set of test reports shall be submitted. For all bought out items, test certificates as per relevant standards shall be submitted.

**JUNCTION BOXES (JBS):**

- The junction boxes are to be provided in the PV array for termination of connecting cables. The Junction Boxes (JBs) shall be made of GRP/FRP/Powder Coated Aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- Copper bus bars/terminal blocks housed in the junction box with suitable termination threads conforming to IP67 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthings. It should be placed at suitable height above for ease of accessibility.
- The array junction box will also have suitable surge protection devices installed in the AJB.
- The junction boxes should be able to combine groups of modules into independent charging sub- arrays.
- Each Junction Box shall have High quality Suitable Capacity Min. Type -2 SPDs Fuses and connectors. The Junction Boxes shall have suitable arrangement of monitoring and disconnection for each of the groups. If Inverter having built-in adequate protection such as SPDs, Over Current Protections, Monitoring, DC Disconnecter etc, then DC junction box is not required. ACDB shall be mandatory for all protection mentioned in the Tender except SPD if it is built-in the Inverter.
- Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification
- All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 67 enclosures with transparent covers.
- It should provide a test point for each sub- group for quick fault location to provide group array isolation.
- The current carrying rating of the junction box shall be suitable with adequate safety factor to inter connect the Solar PV array.
- The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate size for both incoming & outgoing cables

- Suitable markings shall be provided on the bus bar for easy identification & cable ferrules shall be fitted at the cable termination points for identification.
- Junction boxes and solar panel terminal boxes shall be of the thermo plastic type with IP 67 protection for outdoor use and IP 54 protection for indoor use.
- Cable terminations shall be taken through thermo-plastic cable glands. Cable ferrules shall be fitted at the cable termination points for identification.

#### **DC DISTRIBUTION BOARD:**

- DC Distribution panel to receive the DC output from the array field.
- DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 67 protection.
- The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB/ Fuses shall be provided for controlling the DC power output to the PCU along with necessary surge protection devices (SPD's).

#### **AC DISTRIBUTION PANEL BOARD**

- AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.
- ACDB shall be provided with MCCB, Instrument transformers, Multifunction meters, indication lamps, 5/15A Socket with minimum 20 percent spare terminal and Disconnectors.
- The changeover switches, cabling work should be undertaken by the bidder as part of the project.
- All the Panel's shall be metal clad, totally enclosed, rigid, wall mounted/floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
- The panels shall be designed for minimum expected ambient temperature of 50 degrees Celsius, 85 percent humidity and dusty weather.
- All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP67.
- Shall be of Metal Sheet with powder Coating
- Should conform to Indian Electricity Act and rules (till last amendment).
- All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., multifunction meters, mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions;

1	Variation in supply voltage	+/- 10 %
2	Variation in supply frequency	+/- 3 Hz

- Panel shall be totally enclosed dust and vermin proof, best quality synthetic / neoprene rubber gasket shall be provided around doors covers and other cut-outs.
- All Cable Entry Shall be from Bottom Only. Gland plate shall be provided on ACDB compartment with required holes and spare holes. Party shall supply best quality grommet to plug the holes.
- Panel shall have excellent aesthetic look and finish.
- Two nos of earthing bolts shall be provided on each side of panel.
- Holes on Gland plate shall be provided with proper grommets.

#### **Finish and Surface Preparation:**

- Surface is to be prepared with Sand / Shot Blasting.
- Epoxy Power coating (Exterior and interior) after seven tank process with minimum thickness of 80-120 micron.
- Exterior – RAL 7035
- Interior – White (Preferred) or RAL 7035
- All doors shall be provided with adequate number of best quality cam type locking knobs. Concealed Hinges of good quality shall be provided. Location of Hinges (right or left side) shall be as per GA drawing. Doors shall be removal type.

#### **Labels:**

- All labels shall comprise white letters engraved on Black background.
- Labels shall be made of 3 ply lamicaid or Anodized Aluminium.
- Size of lettering shall be minimum 50 mm for panel description and designation.
- (As shown in GA Drawing)
- Size of lettering shall be minimum 5 mm for component designation.
- Live terminal shall be protected with proper insulating front barrier.
- CAUTION , Name plate “CAUTION LIVE TERMINAL “ Shall be provided at all
- points where the terminals are likely to remain live and isolation is required
- before opening.
- 415 V Hazard Board shall be provided on the panel appropriately.

**PCU/ARRAY SIZE RATIO:**

The combined wattage of all inverters should not be less than rated capacity of power plant under STC. However extra DC capacity can be installed by EPC Contractor to achieve higher CUF within the limit of the land/roofs/terrace of the proposed office premises/buildings.

Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

**Power Conditioning Unit (PCU) / Grid-Tied Inverter**

The Contractor has to provide sufficient information to the satisfaction of VMC and approval, before placing the final order for PCU(s)/Inverter(s). Power Conditioning Unit

(PCU)/Inverter shall consist of an electronic inverter with latest technology available in the market along with associated control, protection and data logging devices.

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to maximize Solar PV array energy input into the System, to the power conditioning unit/inverter should also be DG set interactive. If necessary. Inverter output should be compatible with the grid frequency.

Typical technical features of the inverter for Roof top Solar System shall be as follows:

Sr.	Description	Specification
1	Switching devices	IGBT /MOSFET
2	Control	Microprocessor /DSP
3	Nominal AC output voltage and frequency	415V, 3 Phase, 50 Hz (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.) as per CEA/State regulations
4	Output frequency	50 Hz
5	Grid Frequency Synchronization range	(+) 3 Hz or more as per CEA/State regulations
6	Ambient temperature considered	(-) 20° C to (+) 50°
7	Humidity	95 % Non-condensing

8	Protection of Enclosure	IP-54 (Minimum) for indoor IP-67 (Minimum) for outdoor
9	Grid Frequency Tolerance range	(+) 3 or more as per CEA/State regulations
10	Grid Voltage tolerance	(-) 20% & (+) 15 % as per CEA/State regulations
11	No-load losses	Less than 1% of rated power
12	Inverter Efficiency (Maximum)	> 98%
13	MPPT Efficiency	> 90%
14	THD at rated power	< 3%
15	PF	0.9 lag to 0.9 lead
16	LED/LCD Display Indications	:Display shall indicate system functional parameters and protection functional indicator i.e. Inverter ON, Grid ON, Inverter Under/Overvoltage, Inverter Overload, Inverter Over Temperature, etc.
17	Data monitor and display controls	Communication Port for Serial Communication RS-485 using Modbus RTU or Modbus TCP Protocol Ethernet Port for Web based remote Monitoring System
18	Protections	Input over voltage Low/high frequency AC Short circuit Protection Under/over output voltage Over Temperature Grid Input under voltage / over voltage with auto recovery DC disconnect device DC reverse polarity Anti Islanding Protection as per the standard Earth fault Surge Protection Insulation Resistance Protection

19	Standards	IEC 62103 : Electronic equipment for use in power installations. IEC 62109 Part 1 & 2 Galvanic Isolation at input & output through transformer IEC 61727/ VDE 0126 For Grid Interface IEC 61683 for Efficiency of PCU IEC 60068 for Environment Testing IEC 62116 for Anti Islanding IEEE 519-1992 for Harmonic Control in Electric Power Systems
20	Display on Front Panel	Instantaneous & cumulative array power (W), Instantaneous & cumulative output power (W) Cumulative energy (Wh), DC voltage (V), DC current (A), AC voltage (V) (all three phases) AC frequency (Hz), AC current (A), Cumulative hours of operation (h), Daily energy produced Power factor Ambient temperature Solar radiation Data logging facility

Three phase PCU/ inverter shall be used with each power plant system.PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power; inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.Built-in meter and data logger to monitor plant performance through external computer shall be provided.

DC Overloading of PCU/inverter is allowed upto 10% of the rated capacity of the inverter provided no loss in efficiency. OEM specification or recommendation for % DC overloading of Inverter shall be submitted by the Contractor. The up-time of PCU/Inverter should be of 99% in a year, in case of failing to achieve this due to failure of any component of inverter the Contractor shall either replace the inverter or the component at his own cost. Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding



protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard. In PCU/Inverter, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer. If Isolation Transformer is not incorporated with PCU/Inverter, there shall be a separate Isolation Transformer of suitable rating provided at the output side of PCU/PCU units for capacity more than 100 kW if made mandatory by DISCOM. The PCU/ inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.

The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068- 2(1,2,14,30) /Equivalent BIS Std. The MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS std. The junction boxes/ enclosures should be IP 67 (for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications. The PCU/ inverters shall be tested from the MNRE approved test centres / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

Grid Connectivity: Relevant CERC/GERC regulations and grid code as amended and revised from time to time shall be complied. The system shall incorporate a uni- directional inverter and should be designed to supply the AC power to the grid at load end. The power-conditioning unit shall adjust the voltage & frequency levels to suit the Grid.

#### **INTEGRATION OF PV POWER WITH GRID**

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the DG set comes into service PV system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided. Necessary controlling arrangement for DG set shall be incorporated in to design.

#### **DATA ACQUISITION SYSTEM / PLANT MONITORING:**

Data Acquisition System shall be provided for the Rooftop Solar PV Power Plant All the

generation data shall be accessible remotely. The contractor shall make necessary arrangements for remote monitoring at all the locations where data can be viewed at a single location. Web based Remote Monitoring System shall be provided for monitoring and logging the real time data for each of the Solar PV plants.

Data Logging Provision for plant monitoring, time and date stamped system data logs for analysis on remote PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.

Contractor shall provide the data over remote web-server through appropriate arrangements. The Contractor shall provide all necessary latest Software and hardware (except PC), with active SIM card and appropriate data plan for 10 Yr for transmitting the data, so as to make the system complete in all respect. The Remote Monitoring System shall have capability to log and send data from Pyrano meters, used for Operational Acceptance Test (OAT).

Solar Irradiance: An integrating Pyrano meter / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array along with measurement of GHI. It should be installed at any location as given/ suggested by VMC/TPE Agency.

Temperature: Temperature sensors for measuring and recording the Solar panel temperature and ambient temperature to be provided complete with readouts integrated with the data logging system

The following parameters are accessible via the operating interface display in real time separately for Rooftop Solar PV Power Plant Project:

- AC Voltage.
- AC Output current.
- Output Power
- Power factor.
- DC Input Voltage.
- DC Input Current.
- Energy Generation Today

- Energy Generation Totalizer (Since Commissioning)
- Time Active.
- Time disabled.
- Time Idle.
- Total Harmonic Distortion
- Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage)

All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

The Remote Monitoring System shall continuously record power output, fault messages, alarms etc. in Indian Standard Time.

All data shall be recorded chronologically date wise. The data file should be MS Excel compatible.

The contractor shall provide all administrative rights/ privileges/ passwords of the RMS system to VMC.

The Contractor shall configure Remote Monitoring System with VMC/ State Govt./ Central Govt. Portal.

The Contractor shall provide configuration of parameters which are going to monitor as per VMC Instruction.

It will be added advantage, if Web based remote monitoring system is capable to periodically transfer the selected parameter value over File Transfer Protocol (FTP) to the VMC selected server or mail.

Additionally, Inverter must provide data on serial communication over RS485 using Modbus RTU or Modbus TCP protocol. Vendor must provide the memory map of all the parameters. Inverter must have feature to connect in “daisy chain configuration” for RS485 Communication.

PV array energy production: Digital Energy Meters to log the actual value of AC/DC voltage,

Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class & better.

DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.

AC energy monitoring shall be in addition to the digital AC energy meter.

The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

All instantaneous data shall be shown on the cloud based platform..

Software shall be provided for USB download and remote monitoring for analysis of DC and AC parametric data for the plant. Provision for interfacing these data on VMC server and portal in future shall be kept.

Provision for instantaneous Internet monitoring and download of data shall be also incorporated.

### **METERING & GRID CONNECTIVITY**

EPC Contractor shall provide an energy meter for accurate periodical readings of AC energy generated and fed to the grid along with all metering arrangement such as instrument transformers and structure. EPC Contractor shall be responsible for inspection, testing and calibration of Energy Meter(as per Discom ) at the time of installation and also during operation lifetime of Facility.

The Bi-Directional electronic energy meter shall be installed for the measurement of Import/Export of energy. Following GERC's orders on solar metering, solar projects will have "Energy Meter compliant meters at the interface points" and conform to the CEA (Installation and Operation Meters) Regulations, 2006. An energy meter shall be of approved make of the DISCOM and shall conform to the requirements laid down by the CEA's (Installation and Operation of Meters) Regulation, 2010. This shall be inspected, tested and calibrated at the time of installation and also during operation lifetime of power plant.

For accounting of solar generation after inverter/ ACDB from individual feeder solar meter shall be installed. Minimum two no. of solar meter shall be considered for plant. Solar meters shall be installed near ground floor of the building.

The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to VMC/TPE Agency before commissioning of SPV plant.

Solar PV s system must be able to synchronize with Diesel Generator set. Necessary arrangement for DG-PV controller shall be incorporated in to the design as per VMC/ local DISCOM requirement.

The Parties agree that the installation, sealing, inspection, calibration, maintenance and testing of Main Meters and the Back Up Meters shall be as per TENDER and shall also conform to the Central Electricity Authority (Installation and Operation Meters) Regulation, 2006 as amended from time to time.

The meters will be sealed in the presence of representatives of the EPC Contractor and VMC / DISCOM. Any seal(s) of Main Meter or Backup Meter will be broken only by DISCOM's representative in the presence of the EPC Contractor's representative whenever such Meter is to be inspected, tested, adjusted, repaired or replaced.

In case of any change in the Delivery Point as mutually agreed between VMC/DISCOM and the EPC Contractor will automatically apply to this Agreement without any further action.

Metering System including CT's (Wherever applicable) shall be as approved by DISCOM and STU. All approval, testing and required Liaison work shall be in the scope of Bidder. Testing Charges of Solar Generation Energy Meter, Net Energy Meter, and Current Transformer shall be carried out and borne by the Bidder. Meter Box shall be as per DISCOM/STU requirement.

## **PROTECTIONS**

The system should be provided with all necessary protections like earthing, Lightning, grid islanding, DC Earth Fault, AC Earth fault, AC Under and Over voltage, Over current, Short Circuit and over load protection as follows:

### **LIGHTNING PROTECTION**

The SPV power plants shall be provided with ESE Type lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors.

Lightning protection should be provided as per IEC 62305 standard.

The protection against induced high-voltages shall be provided by the use of SPD's and suitable earthing such that induced transients find an alternate route to earth. Minimum 2 (two) nos. of earthpits are required for lightning arrestors. ESE type lightning arrestors shall be used for the protection of solar rooftop installations. Details Design Calculation shall be submitted for approval.

### **SURGE PROTECTION**

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement). Both AC and DC side minimum type- II SPD shall be provided.

## **EARTHING PROTECTION**

Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of VMC / DISCOM as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

The PV module structure components shall be electrically interconnected and shall be grounded.

Earthing shall be done as per RE Norms, provided that earthing conductors shall have a minimum size of 6.0 mm<sup>2</sup> copper, 10 mm<sup>2</sup> aluminium or 75 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.

A minimum of two separate dedicated and interconnected earth electrodes must be used for the earthing of the solar PV system support structure with a total earth resistance not exceeding 1 Ohm. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

Earthpit shall be maintenance free chemical earthpit with chemical compound and 16 mm 3 meter copper coated (min 250 micron) electrode. The earth electrodes shall have a brick/RCC/precast concrete enclosure with a removable cast iron for inspection and maintenance. The entire earthing system shall comprise non- corrosive components.

## **GRID ISLANDING**

In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

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

The following test/Standards can be used for testing the efficacy of the islanding arrangements:

IEC 61727- PV system -characteristic of Utility interface

IEC 62446-Grid connected photovoltaic system-Minimum requirements for system documentation, commissioning, test and inspection

IEC 62116-Test procedure of islanding prevention measure for utility- interconnected photovoltaic inverters

Besides the above measures, certain precautions prescribed the CEA in a solar rooftop technical note shall also be incorporated into the solar PV system design:

PV system shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) side for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenance.

Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit.

## **CABLES**

Cables of appropriate size to be used in the system shall have the following characteristics:

All DC String cables shall meet EN 50618 standard and AC cable shall meet IS 7098- 1-2 standards

Temp. Range: -10Deg C to +80 Deg C.

Voltage rating: 1,100V AC, 1,500V DC

Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

Flexible

Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum (2%).

For the DC cabling, XLPO insulated and sheathed, UV-stabilized single core multi- stranded flexible copper cables shall be used; Multi-core cables shall not be used.

For the AC cabling, PVC or, XLPE insulated and PVC sheathed single or, multi-core multi-stranded flexible copper cables shall be used; Outdoor AC cables shall have a UV-stabilized outer sheath.

The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross- linked XLPE type and black in colour.

All the AC power cable for outdoor installation shall be armoured only and the must be earthed through armoured. Cables for indoor application shall be up to the discretion of VMC.

The DC cables from the SPV module array shall run through GI/SS cable trays with a minimum thickness as per standard. The DC cables shall be properly dressed by avoiding overlap over one another and shall be tied by using cable tie(s) in order to ensure that the cables do not run away from the tray and thereby maintain aesthcity.

Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers.

All cables and cable trays 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 mm<sup>2</sup> copper; the minimum AC cable size shall be 4.0 mm<sup>2</sup> 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:

DC positive: red (the outer PVC sheath can be black with a red line marking)

DC negative: black

AC single phase: Phase: red; neutral: black

AC three phase: Phases: red, yellow, blue; neutral: black

Earth wires: green

Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipe sleeve.

Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable can be easily identified.

In addition, cable drum no. / Batch no. to be embossed/ printed at every one meter.

Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant. The following particulars shall be properly legible embossed on the cable sheath at the intervals of not exceeding one meter throughout the length of the cable. The cables with poor and illegible embossing shall be liable for rejection.

VMC

Voltage grade Year of manufacture

Manufactures name

Successive Length

Size of cable

All cables and connectors for use for installation of solar field must be of solar grade which can withstand harsh environment conditions including High temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes for 25 years and voltages as per latest IEC standards.

The ratings given are approximate. The EPC Contractor to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the EPC Contractor/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

EPC contractor shall submit all the details GTP, QAP, VD calculation and type test reports of the cable for the approval from VMC.

Multi Strand, Annealed high conductivity copper conductor XLPO insulation. All cable trays



including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoQ item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V ,UV resistant for outdoor installation IS /IEC 69947.

The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.

The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.

Cable conductors shall be terminated with tinned copper end-ferrules to prevent fraying and breaking of individual 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.

All cables shall be from a reputed manufacturer and shall be in line with IEC 60189/IS 1554 IS 694. These also shall meet following standards.

IEC 62208:- General requirements for empty enclosure for low voltage switch gear and control gear assemblies

IEC 60947:- Standard test and measurement methods for PVC insulated cables for working voltages up to and including 1100V, UV resistant for outdoor applications.

IEC 60947:- Connectors for Photovoltaic system-Safety

IEC 50521:- Connectors for Photovoltaic system-Safety

IEC 60189-1:-Low frequency cables and wire with PVC insulation and PVC sheath-General test measuring methods.

IEC 60189-2:- Low frequency cables and wires with PVC insulation and PVC sheath-Cables in pairs triples, quads and quintuples for inside installations

All string DC cable shall comply with standards: IEC 50618. DC cables shall meet following minimum requirements:

All module interconnecting cables and those between solar module and array junction boxes shall be of flexible type. UV protected cables these shall be laid along the module mounting structures.

Size of interconnection for modules and from modules to inverter shall be so selected that loss would not be more than 2%.

The expected life of cables shall be not less than 30 (thirty) years

The cables shall have suitable insulation and outer sheath:

No fire propagation/flame retardant

Low smoke emission in case of fire

Halogen-free

High ambient temperature range -40 deg. C and +90 deg. C

Withstand conductor temperature of 120 C

It shall have high resistance to UV, water, vapour, chemical, corrosion

Should have certification of TUV

### **CONNECTIVITY**

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time. Following criteria have been suggested for selection of voltage level in the distribution system for ready reference of the solar suppliers.

Sr. No.	Plant Capacity	Connecting voltage
1	Up to 10 kW	415V-three phase at the option of the consumer
2	Above 10 kW and up to 100 kW	415V – three phase
3	Above 100 kW	At HT level (11kV) as per DISCOM rules

### **TOOLS & TACKLES AND SPARES**

After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the EPC Contractor for approval of specifications and make from VMC/ owner.

A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished.

### **DANGER BOARDS AND SIGNAGES**

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three sign age shall be provided one each at battery –cum-control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with VMC/ owner.

## **FIRE EXTINGUISHERS**

The firefighting system for the proposed power plant for fire protection shall be consisting of:

Portable fire extinguishers in the control room for fire caused by electrical short circuits  
Sand buckets on rooftop near electrical installations.

The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards.  
The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

Fire extinguisher shall be placed on all solar rooftop installations from protection of fire caused by electrical short circuit/ any other means.

## **DRAWINGS & MANUALS**

Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

Approved ISI and reputed makes for equipment be used.

For complete electro-mechanical works, bidders shall supply complete design, details, drawings, product specification for approval to SECI/owners before progressing with the installation work.

## **PLANNING AND DESIGNING**

The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor. The bidder should submit the array layout drawings along with Shadow Analysis Report to VMC/TPE Agency for approval.

VMC reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

The bidder shall submit preliminary drawing for approval & based on any Modification or recommendation, if any. The bidder submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

## **DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT**

The Contractor shall furnish the following drawings Award/Intent and obtain approval

- General arrangement and dimensioned layout Schematic drawing showing the requirement of Solar PV Panel, Power Conditioning Unit(s)/ Inverter, All Cables, Junction Boxes, AC and DC Distribution Boards, Meters etc.
- Structural Drawing (GA, Detailed Fabrication Drawing, STAAD File in Soft form, etc) along with foundation details for the all MMS structures (Rooftop Solar PV Power Plant).
- Itemized bill of material for complete SV plant covering all the components and associated accessories.
- Layout of solar Power Array
- Shadow analysis of the roof

### **SAFETY MEASURES**

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

### **DISPLAY BOARD**

The bidder has to display a board at the project site mentioning the following:

- Plant Name, Capacity, Location, Type of renewable energy plant (Like solar), Date of commissioning, details of tie-up with distribution companies, Power generation and Export FY wise.
- The size and type of board and display shall be approved by Engineer-in-charge before site inspection.

### **IEC STANDARDS**

IEC standards It is to be mandatorily adhered are as given below:

Quality Certification, Standards and Testing for Grid-connected Rooftop Solar PV Power Plant

Quality certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected rooftop solar PV system/ plant must conform to the latest and updated version of relevant standards and certifications given below:

Solar PV Modules/Panels		
IEC 61215/ IS 14286		Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61646/ IS 16077		Design Qualification and Type Approval for Thin-Film Terrestrial Photovoltaic (PV) Modules
IEC 62108		Design Qualification and Type Approval Photovoltaic (CPV) Modules and Assemblies
IEC 61701- As applicable		Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/ IS 16170 : Part 1		Photovoltaic (PV) module performance testing and energy Rating –: Irradiance And temperature performance measurements, and power rating
IEC 62716		Photovoltaic (PV) Modules – Ammonia (NH <sub>3</sub> ) Corrosion Testing (Advisory - As per the site condition like dairies, toilets)
IEC 61730-1,2		Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
IEC 62804 (Draft Specifications)		Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation (PID). IEC TS 62804-1: Part 1: Crystalline silicon (Mandatory for system voltage is more than 600 VDC and advisory for system voltage is less than 600 VDC)
IEC 62759-1		Photovoltaic (PV) modules – Transportation testing, Part 1: Transportation and shipping of module package units
Solar PV Inverters		
IEC 62109-1, IEC 62109-2		Safety of power converters for use in photovoltaic power systems Safety compliance (Protection degree IP 67 for outdoor mounting, IP 54 for indoor mounting)

IEC/IS 61683 (For stand Alone System)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%,50%, 75% & 90-100% Loading Conditions)
BS EN 50530 (Will become IEC 62891) (For Grid Interactive system)	Overall efficiency of grid-connected photovoltaic inverters: This European Standard provides a procedure for the measurement of the accuracy of the maximum power point tracking (MPPT) of inverters, which are used in grid-connected photovoltaic systems. In that case the inverter energizes a low voltage grid of stable ACvoltage and constant frequency. Both the static and dynamic MPPT efficiency is considered.
IEC 62116/ UL 1741/  IEEE 1547	Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment - Part 27: Product safety requirements
IEC 60068-2 (1, 2, 14, 27, 30 & 64)	Environmental Testing of PV System – Power Conditioners and Inverters
IEC 61000- 2,3,5	Electromagnetic Interference (EMI), and Electromagnetic Compatibility (EMC) testing of PV Inverters (as applicable)
<b>Fuses</b>	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC)
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
<b>Surge Arrestors</b>	
IEC 61643-11:2011/ IS 15086-5 (SPD)	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low- voltage power systems

	- Requirements and test methods
<b>Cables</b>	
IEC 60227/IS 694,	General test and measuring method for PVC (Polyvinyl chloride)
IEC 60502/IS 1554 ( Part 1 & 2)	insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC cables
<b>Earthing /Lightning</b>	
IEC 62561 Series ( Part 1,2 &7) (Chemical earthing)	<p>IEC62561-1 Lightning protection system components (LPSC) - Part 1: Requirements for connection components</p> <p>IEC62561-2 Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes</p> <p>IEC 62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds</p>
<b>Junction Boxes</b>	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo plastic type with IP 67 protection for outdoor use, and IP 54 protection for indoor use
<b>Energy Meter</b>	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 — Specification (with Import & Export/Net energy measurements)
<b>Solar PV Roof Mounting Structure</b>	
IS 2062/IS 4759	Material for the structure mounting

## **INTERCONNECTION SCHEME**

The project aims to develop a replicable model of decentralized power generation using photovoltaic plants that feed energy to the grid. The scope would include design, manufacture, supply, install and commission and operate for 25 years these SPV power packs.

All work must be carried out as per the following:

Indian Electricity Act and rules therein

Indian Electricity Grid Code

Regulations of Chief Electrical Inspector

Besides the above measures, certain precautions prescribed by the CEA shall also be incorporated into the solar PV system design:

PV systems shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) side for overload and short circuit protection as well as disconnecting switches to isolate the DC and AC system for maintenances.

Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit.

### **Phase Imbalance**

Phase imbalance can occur due to varied power injected into different phases of the grid. Whenever solar power plants (SPPs) of lower capacities with single phase inverters are used to feed power into the grid using a single phase injection point, they tend to induce imbalance. This imbalance can be resolved simply by connecting / injecting power to different phases in the same grid.

The developer shall have to follow the phase imbalance limits imposed by the Off Taker and shall also have to follow the guidelines before connecting such limits to the grid.

The injection phase for each system to be injected into a single phase shall be approved by the Off Taker.

### **TESTING PROCEDURE**

Mandatory check before and after connecting the SPV system with DISCOM Network and steps for maintenance of network where such connectivity exists.



## **MANDATORY SAFETY PRECAUTIONS AND FEATURES TO BE TAKEN CARE DURING OEM & AFTER COMMISSIONING**

The following are mandatory safety precautions and features which will be taken care before and after commissioning of grid connected Solar PV system:

- An inbuilt Inverter relay which trips on Discom supply failure and thus prevents any solar power injection to the Discom when there is no power from Discom. The anti-islanding protection shall be tested by respective VMC Engineer and the EPC Contractor during the release of connection.
- The Solar PV system should be separately grounded / earthed. A minimum of two Separate dedicated and interconnected earth electrodes must be used for the Earthing of the PV system support structure, with a total earth resistance not exceeding 1ohms. There must be at least three different earth pits, with minimum distance of 3 meters between any two, for each PV system; one for DC side (panels and structure), second for AC side (also called as neutral earthing) and lightning arrestor earthing. Additionally inverter body must be earthed as per instructions from inverter manufacturer.
- A properly designed Lightning Protection System (including arrestors as necessary) also must be provided for SPV.
- Manual isolator switch, at an easily accessible location with locking facility, shall be provided between inverter AC output and grid interconnection.
- Caution Stickers shall be used with the green background and the text "Solar PV Systems" written in white letters. The size of these stickers shall be 10 CM (width) x 7 CM (height) with the text clearly printed in the center of the sticker.
- All SPV systems should have a mandatory sign board fitted near the existing meter reading terminal stating that "This service is fitted with a LT grid connected SPV plant". The Solar PV system Caution Stickers shall be fixed under the supervision of VMC/TPE Agency Engineer and the Solar Power Developer in the following locations.
  - On or near to meter of service with grid connected solar PV system;
  - On The Consumer main switch, of a service connected with a grid connected Solar PV System;
  - On substation end of HT feeder having Solar PV System.
- A List of service connected with grid connected Solar PV Systems shall be available at the VMC office.

- A record may be maintained at the VMC Office and with the VMC Engineer of each SPV plant commissioning date and other details.
- The SPV connected details of pole / pillar box /DT/ SS feeder end wise may be maintained at VMC office.
- Any such requirement of cutting or trimming parts of a tree or branch of a tree affecting sufficient radiation on the modules or causing shadow on the modules maybe done after consent and approval of VMC.
- Proper drainage of rain water should be maintained over terrace throughout the installation area and installation of proper piping systems should be ensured on rooftops where there is high probability of water logging. Installation of the same shall be in the scope of the the EPC Contractor.
- Arrangement of water for module cleaning should be solely in the scope of the EPC Contractor on a chargeable basis. EPC Contractor shall ensure that a water meter and pump should be connected for timely cleaning of the modules and the same shall be procured by the EPC Contractor itself.
- Electricity required for running the installed pump for cleaning of modules may betaken from VMC on the consent/approval of VMC's concerned authority against which the EPC Contractor has to pay charges to VMC as per rates paid to the DISCOM by VMC. Installation of meters for logging of the electricity consumed by the pump(s) for module cleaning shall be in the scope of EPC Contractor.
- Cables to be laid over trays not obstructing the movement on the terrace as per site requirement with cables properly dressed over it without overlap, installation of insulated or thermo-plastic clamps at places where the cables need perfectly horizontal climbing at a minimum gap of 50mm and ensuring that the cables do not run away from the trays by tying the cables along with the tray using cable tie(s).
- During planned / forced maintenance work on Discom network, before taking up the work in hand, besides ensuring all other provisions such as line earthing, de-energizing the line section where the work is to carried out as per prevailing norms, it should also be ensured that supply from such small solar roof-top PV power plants are not back-feeding and supply should also be disconnected by manual isolating switch with locking facility installed in the premises of such consumers and ensuring proper earthing.

Seal and Signature of the Contractor

THE EPC CONTRACTOR SHALL COMPLIANCE THE BELOW MENTIONED CHECK LIST BEFORE RELEASE OF CONNECTION.

Component Inspection Checklist:

Sr. No.	Item Type
1	Installation Layout as per approved drawing
2	Inverter IS/ IEC standards qualified
3	PV panel IS / IES standards qualified
4	PV isolators / PV cables IS / IES standards qualified
5	Ac disconnect manual switch provided with locking arrangement
6	Meters approved by MT staff? (as per meter regulations)
7	Any other critical component IS/ IES standards certified

Grid connected Functional Safety Checklist:

Sr. No.	Item Type
1	Check whether solar generation stops automatically when DISCOM supply is turned off
2	Bi-directional flow recorded on DISCOM meter
3	Consumption (Import) only mode ok?
4	Solar Generation meter Ok?
5	Check all Earthing points as per standard
6	Solar and Bi-directional meter tested & sealed by DISCOM meter testing lab
7	Check whether manual Isolating switch is installed at accessible location with locking arrangement
8	Check whether manual Isolating switch stops feeding supply in Discom network when in OFF position

as per the technical specifications

**Seal & Signature of the Tenderer**

**Note:**

- If in case of non-availability of Specified brand of Material, necessary approval is to be taken from concern authorities of VMC.
- All the Material to be approved and tested as per latest relevant IS, prior to execution the work Material not mentioned in above list should confirm to latest relevant IS revision

## Operation and Maintenance

### System Operations

The EPC Contractor will be responsible for operation and maintenance of the project TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT **CITY CONTROL & COMMAND CENTRE BADAMDIBAUG** (Re-Invite) Solar ensuring the generation and sale of power. It will be bearing all costs and expenses for the operation and maintenance of the same. Comprehensive operation & maintenance of the Solar PV plant including supply of spare parts, consumables, repairs/replacement of any defective equipment etc. shall be performed by the Contractor for a period of 10 years (warranty period).

### A. MAINTENANCE REQUIREMENTS

- Water cleaning of SPV modules.

The Contractor shall wash the modules minimum twice in a month and maintain this schedule in its records for the cleaning cycle, however the solar company will not use water jets/ pressurized hoses for the cleaning as the water may enter the internal circuitry laid down around these premises.

- The EPC Contractor shall give undertaking that for the plant period of 10 years all the power packs covered under this project will be operated, maintained and repaired whenever necessary so that all Units are operative and export maximum possible energy to the grid/ captive use. This shall be ensured through undertaking services that include, but are not limited to, the following
  - i) Daily monitoring of plant performance.
  - ii) Supply of all technical, production/operation data and information through a monthly report.
  - iii) Monitoring, controlling, troubleshooting, maintaining of records, registers etc.
  - iv) Supply of all spares, consumables and fixing / installation of the same including proper storage of tool, tackles & spares.
  - v) Planned visits on a monthly, quarterly, and annual basis for preventative and corrective maintenance which include, but are not limited to the following:
    - a. Clean solar panels (Solar Roof top System) on 15 days basis to get maximum output from the panels.
    - b. Check if there is some generation loss due to shadow of overgrown tree branches and

trim the same on VMC's approval.

- c. Check inverter cabinets (ventilation openings, lighting, leakages in inverter cabinets and cleaning of filters) and inverter maintenance. Solar Power Developer will keep the necessary spares at the Project Site.
  - d. Check aesthetic healthiness of cables running over trays and connect cable tie(s) wherever necessary or where the cables have been running away from trays due to course of time.
  - e. Check security and fire protection system.
  - f. Check parts for corrosion.
  - g. Check the state of tightness of connections, fuses, main junction boxes, etc. Adequate spares to ensure uninterrupted operation and minimum downtime during the entire period.
  - h. Comprehensive operation and maintenance of the Facility upto the energy meter shall be the responsibility of the EPC Contractor.
  - i. Comprehensive Operation and Maintenance during entire life of the systems shall include supply of spares, consumables, machine breakdown insurance, transpiration, and general comprehensive insurance covering fire, earthquake and provision of security personnel with the insurance policy which shall be taken in the VMC's name as the primary beneficiary. Copies of the Insurance Policies are to be given to the concerned department, as and when taken/renewed. All risks associated with lapses or delays in insurance coverage, during the construction period, shall be at the EPC Contractor's cost.
- The EPC Contractor shall ensure efficient operation of the Project and the associated facilities to achieve the maximum power generation from the Project. For this purpose the EPC Contractor shall engage the services of adequate number of Skilled Engineers and Technicians. The EPC Contractor shall also attend to all failures, rectifications, breakdown, comprehensive Operation and Maintenance checks. Daily Management Information System (MIS) reports with generation and down time analysis data shall be made available to VMC office by E-mail.
  - The EPC Contractor shall submit details of Skilled Engineers and Technicians to VMC for engagement in O&M.

## **Maintenance Manual**

- With Scheduled Completion Date, the EPC Contractor shall, in consultation with the VMC, evolve a repair and maintenance manual (the "Maintenance Manual") for the regular and preventive maintenance of the Solar Rooftop Power System in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 3 (three) copies thereof to VMC. The Maintenance Manual shall be revised and updated once before hand over the system to VMC.
- Without prejudice to the provision of as per tender, the Maintenance Manual shall,

in particular, include provisions for maintenance of Project Assets and shall provide for lifecycle maintenance, routine maintenance and reactive maintenance which may be reasonably necessary for maintenance and repair of the Project Assets, including replacement thereof, such that its overall condition conforms to Good Industry Practice.

### **Safety, breakdowns and accidents**

- The EPC Contractor shall ensure safe conditions for the operation of Solar Rooftop Power System and in the event of unsafe conditions, damage, breakdowns and accidents; it shall follow the relevant operating procedures and undertake removal of obstruction and debris without delay. Such procedures shall conform to the provisions of this TENDER, Applicable Laws, Applicable Permits and Good Industry Practice.
- Breakdown / Corrective Maintenance: Whenever a fault has occurred, the contractor has to attend to rectify the fault & the fault must be rectified at the earliest time from the time of occurrence of fault.

### **Safety Requirements**

- The EPC Contractor will take all necessary and reasonable safety precautions with respect to providing the Installation Work, Solar Power, and System Operations that will comply with all Applicable Laws pertaining to the health and safety of persons and real and personal property.
- The EPC Contractors shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.
- Project Management shall include adherence to all requisite safety practices.
- Security, safety, watch, and ward of all material sites shall be the responsibility of the EPC Contractor.
- Contractor Safety Management to be strictly complied with by the EPC Contractor throughout Project activity.
- The EPC Contractor shall comply with the provisions of this TENDER, Applicable Laws and Applicable Permits and conform to Good Industry Practice for securing the safety of the Solar Ground Mounted, Solar Rooftop Power System. In particular, the EPC Contractor shall develop, implement and administer a surveillance and safety programme for providing a safe environment on or about the Solar Rooftop Power System and shall comply with the "Safety Requirements".
- The Parties hereby agree that the Electrical Engineer shall carry out safety audit of the Solar Rooftop Power System in accordance with the Safety Requirements at least once a quarter. The EPC Contractor shall, no later than 7 (seven) days after the close of each quarter, furnish to VMC a copy of the safety certification issued by the Safety Consultant. All costs and expenses to be incurred for facilitating the safety audit shall be solely borne by the EPC Contractor.

## **Inspection**

- The VMC's Electrical Engineer shall inspect the Solar Rooftop System at least once a month. It shall make a report of such inspection (the "O&M Inspection Report") stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Maintenance Requirements, Maintenance Manual, the Maintenance Programme and Safety Requirements, and send a copy thereof to VMC and the EPC Contractor within 7 (seven) days of such inspection.

**(Seal & Signature of the Tenderer)**



## FORM OF TENDER

To,  
The Municipal Commissioner,  
Vadodara Municipal Corporation  
Khanderao Market,  
Rajmahal Road,  
Vadodara-390 001

Dear Sir,

Reference is made to the tender invited for the work of following item/items for decorative lighting work.

**Name of work:** TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)

I / We have examined the drawings, General conditions of contract, specifications, etc. as given in Tender Document to the above work. I/We hereby offer to undertake above referred work. In conformity with the specification, general and special conditions of contract etc. as given in Tender Document at the respective rate mentioned in my/our Tender.

I/We undertake to complete the supply indicated above within the specified time limit mentioned in the tender document from the date of receipt of purchase order.

I/We have deposited as earnest money a sum of **Rs.60,000/- (Rupees Sixty Thousand Only)** as indicated. The said amount is not to bear any interest and I /we do hereby agree that this sum shall be forfeited in the event of failure to execute the contract agreement after acceptance of the tender by the owner.

I/We understand that you are not bound to accept the lowest or any tender that you may receive.

Yours faithfully,

Name of Partners / Directors of the Firm

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

Signature \_\_\_\_\_  
Signature \_\_\_\_\_  
Signature \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_ Date:-

## **MEMORANDUM**

**(A) GENERAL DESCRIPTION OF WORK:** TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG. (Re-Invite)

**(B) TENDER FEE AMOUNT: Rs.4000/- (Rupees Four Thousand Only.)**

**(C) EARNEST MONEY DEPOSIT :Rs.60,000/- (Rupees Sixty Thousand Only)** The Earnest money is payable as per the tender notice and clause 16 of General Instructions to Tenderer.

**(D) SECURITY DEPOSIT :** 3 % contract amount will be paid in the manner set in clause 16 of the General Instructions of Tender.

**(E) PERFORMANCE SECURITY DEPOSIT :** 10% amount of O&M Work value will be paid in the manner set in clause 16 of the General Instructions of Tender.

**(F) TIME ALLOWED FOR COMPLETION: 60 Days**

1) Should this tender be accepted, I/We hereby agree to abide by and fulfill all terms and conditions referred to above and in default hereof to forfeit and pay to the owner or its successors or its authorized nominees, such sum of money as is stipulated in the conditions contained in General Tender Notice and other documents.

2) I/We hereby pay/submit the earnest money **Rs.60,000/- (Rupees Sixty Thousand Only)** in the form of Demand draft/Pay Order in favor of Municipal Commissioner, Vadodara Municipal Corporation, Payable at Vadodara from Nationalized Bank.

3) If I/We fail to commence the work specified in the Memorandum in Para (1) above or if I/We fail to deposit the amount of security deposit specified in the Memorandum in (1) above, I/We agree that the said owner or its successors, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money in full. Otherwise, the said earnest money shall be retained by owner towards the security deposit specified in Para (1) above. The owner shall also be at liberty to cancel the tender, if I/We fail to pay security deposit as aforesaid or to execute and agreement or to start work as stipulated in the Tender documents.

I/We enclose herewith evidence of my/our experience to work of similar nature and

magnitude carried out by me/us.

Date            day of            2026

Witness

Name (in Block letters):

Address

**Signature of Tenderer(s) with the seal of the firm.**

# ***Instruction to Bidders***

## **General Instructions**

- The current document is the request for proposal, which is issued to all the potential Bidders, requesting a proposal for implementation of the Project on a fixed price basis. A Contractor would be selected through competitive bidding process for execution of the Project.
- The Company expects Bidders to confirm compliance to TENDER terms, conditions and specifications at the time of submission of Bids, failing which the Bids are liable to be rejected. Hence, the Bidders in their own interest are advised to submit their Bid complete in all respects conforming to all terms and conditions of this TENDER.
- Before submitting the Tender, the instructions may be read carefully regarding submission of Tender. If any bidder finds discrepancies or omissions in the Tender documents or is in doubt as to the true meaning of any part, he shall clarify same from the Tender issuing office in writing before the due date of submission of the queries.
- Site visit and verification of information-
- The Site data of the Project is being provided only as a preliminary reference document by way of assistance to the Bidders who are expected to carry out their own surveys, investigations and other detailed examination of the Project before submitting their Bids. Nothing contained in the site data Report shall be binding on the VMC nor confer any right on the Bidders, and the VMC shall have no liability whatsoever in relation to or arising out of any or all contents of the site data.
- Bidders are encouraged to submit their respective Bid after visiting the Project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, availability of power, water and other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them.
- Bids shall be evaluated based on the information/documents available in the Bid. Hence, Bidders are advised to ensure that they submit appropriate and relevant supporting documentation along with their proposal in the first instance itself. Bids not complying with the requirements of this TENDER are liable to be rejected without any further opportunity.
- Bidders need to ensure that in the event the Project is awarded to it, and during execution of the Project, it shall not seek to alter any agreed contractual terms, conditions and specifications.
- All Bids must be accompanied by a Tender fee and EMD of value as specified in the NIT in the form and manner as specified in the TENDER document and must be delivered along with Bids. The specification provided with this TENDER outlines the functional requirement. The Bidder must submit a Proposal based upon their own

design, meeting the functional requirements.

- Bidders shall deploy the latest state-of-the-art technology and must ensure that the goods supplied are new, unused and of most recent or current models and incorporate all recent improvements in design and materials for the implementation of the Project.
- This 'Instructions to Bidders', in original, issued along with TENDER document, shall be submitted by the Bidder along with Bid duly signed by the Bidder as the token of acceptance. Bid sent without having the prescribed TENDER document and without
- Complying with the terms and conditions of TENDER shall be ignored.
- Issuance of this TENDER does not construe that the Bidder has been short-listed or qualified.
- The VMC reserves the right to accept or reject any Bid and to annul the bidding process and reject all Bids at any time prior to award of the Agreement, without assigning any reason thereof and without thereby incurring any liability to the affected Bidder(s).
- As the Bid for the said work is invited for execution of grid connected solar PV power project for Vadodara Municipal Corporation, the LOA will be placed to the successful bidder on receipt of VMC Approval.
- The VMC reserves the right to reject any Bid submitted with deviations beyond the one that is specified and mentioned in the TENDER and no time shall be given in any circumstance after opening of Financial Proposal for submission of documents which are missing with Bid.
- Any condition or qualification or any other stipulation contained in the Bid shall render the Bid liable to rejection as a non-responsive Bid.
- In case of change in ownership of the Project, all the Agreements and Contracts signed with the VMC will stand true and valid with the new Owner of the Project. Tender Issuing Authority reserves the right to cancel the NIT or to change qualifying requirement or to reject any or all the tenders so received without assigning any reason.
- The Site for the work is either available or it shall be made available in the parts in a manner so as not to hamper the progress of work. However, VMC shall provide access to the roof along with the LOA.
- Canvassing in connection with Tender is strictly prohibited and the Tender submitted by the Bidders who resort to canvassing will be liable to rejection straight way.
- The Bid and all communications in relation to or concerning the Bidding Documents and the Bid shall be in English language.
- All rates shall be quoted on the proper form i.e. price bid supplied as part of the Tender documents on e-tender portal by the Department.
- The VADODARA MUNICIPAL CORPORATION (VMC) does not bind itself to accept the lowest Bid and reserves to itself the right to accept the whole or any part of the Tender and the Bidder shall be bound to perform the same at the rate quoted in

this Tender.

### **Local Conditions**

- The Bidder is advised to visit and examine the site conditions, traffic, location, surroundings, climate, availability of power, water and other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into the Contract Agreement. The costs of visiting the Site shall be the Bidder's own expense.
- The Bidder and any of its personnel or agents shall be granted permission by the VMC to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, its personnel or agents, shall release and indemnify the VMC and its personnel and agents from and against all liability in respect thereof and shall be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which, but for the exercise of such permission would not have arisen.
- Failure to visit the Site or failure to study the TENDER document shall in no way relieve the successful Bidder from furnishing any material or performing any work in accordance with the TENDER document.
- In no case the date of Time for Completion of the project shall be extended, due to the failure of the Bidder to visit the site and it shall be in line with the time line of VADODARA MUNICIPAL CORPORATION (VMC) under the Scheme.
- It shall be deemed that by submitting a Bid, the Bidder has:
  - a) Made a complete and careful examination of the TENDER document;
  - b) Received all relevant information requested from the VMC;
  - c) Acknowledged and accepted the risk of inadequacy, error or mistake in the Information provided in the TENDER documents or furnished by or on behalf of the Company relating to any of the matters referred to in IT.
  - d) Satisfied itself about all matters, things and information including matters referred to in the Bid Info at a glance, necessary and required for submitting an informed Bid, execution of the Project in accordance with the TENDER document and performance of all of its obligations thereunder;
- Acknowledged and agreed that inadequacy, lack of completeness or incorrectness of information provided in the TENDER document or ignorance of any of the matters referred to in the TENDER herein shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Company, or a ground for termination of the Contract Agreement; and Agreed to be bound by the undertakings provided by it under and in terms here of.
- The VMC shall not be liable for any omission, mistake or error on the part of the Bidder in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the TENDER document or the Bidding Process,

including any error or mistake therein or in any information or data given by the Company.

- Local Regulatory Frame Work
- It shall be imperative for each Bidder to fully inform itself of all local conditions, laws and factors which may have any effect on the execution of the Contract as described in the Bidding Documents. The Company shall not entertain any request for clarification from the Bidder, regarding such local conditions.
- It is the responsibility of the Bidder that such factors have properly been investigated and considered while submitting the Bid proposals and that no claim whatsoever including those for financial adjustment to the Contract awarded under the TENDER documents shall be entertained by the Company and that neither any change in the time schedule of the Contract nor any financial adjustments arising there of shall be permitted by the Company.

- **Clarification to Tender Document**

- A Bidder requiring any clarification of the Tender documents may notify VMC in writing or by facsimile or by e-mail to VMC's contact as mentioned as below.
- VADODARA MUNICIPAL CORPORATION (VMC),
- Address:- Office of the Executive Engineer (Electrical)
- Streetlight Department
- Rajmahal road Vadodara,
- Email ID : [exen.streetlight@vmc.gov.in](mailto:exen.streetlight@vmc.gov.in)

- **Amendments to Tender Document**

- VMC may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective Bidder, modify the Tender Documents.
- The amendments will be notified on website as mentioned in Notice Inviting Tender of this Tender.
- In order to allow the prospective Bidder(s), reasonable time in which to take the amendment into account in preparing their Bids, VMC at its discretion, may extend the deadline for the submission of Bids.

- **Acceptance of Bids**

- VMC neither binds itself to accept the lowest nor to assign any reason for the rejection of any Bid. It is also not binding on VMC to disclose any analysis report.
- *Withdrawal of Invitation to Bid*

- While VMC has floated this Tender and has requested Bidders to submit the proposals, VMC shall always be at the liberty to withdraw this invitation to bid at any time before the acceptance of bid offer.

- **Representative/Agent of Bidder**

- All the Bidders are requested to mention the name of their authorized representative/agent, if any, with full address in the Bid. In case the representative is changed during the bidding process such changes shall be notified by the Bidder,

failing which, VMC shall not accept any responsibility.

- ***Financial Proposal and Currencies***
- The Bidders shall quote the prices inclusive of all the taxes, while also providing the breakup of taxes as mentioned in Annexure and shall be submitted Online Only. The Bidder shall indicate the price in Financial Proposal in Indian National Rupee only. Seal and Signature of the Tenderer

**Signature of Tenderer(s) with the seal of the firm**



## DEFINITION OF TERMS

In the contract documents as are in defined where the context so admits the following words & expression will have the following meanings.

1. "The Owner", means the Vadodara Municipal Corporation having its registered office at Khanderao Market, Palace road, Vadodara, Gujarat state.
2. "The Tenderer", means the manufacturer or its authorized dealer, firm or Company whose tender has been accepted by the Owner and includes the Contractor's legal representative, his successor and permitted assigns.
3. The "HOD Streetlight Department" shall means the HOD Streetlight Department of Vadodara Municipal Corporation or his successor in office as designated by the Owner.
4. The "Engineer-in-charge", shall mean the person designated as such by the Owner and shall include those who are expressly authorized by him to act. For and on his behalf for operation of this contract. The engineer in charge for this contract shall be Executive Engineer, (Elect.)
5. "The work", shall mean the work of various item/s mentioned in accordance with the contract or part thereof as the case may be and shall include all extra additional, altered substituted works as required for purpose of the contract.
6. "Contract Documents", means collectively the Tender documents Designs, Drawings, Specifications agreed variation subsequent correspondence done, such other documents constituting the Tender and acceptance thereof.
7. "The Contract", shall means the agreement between the Owner and the contractor for the execution of the work including therein all contract documents.
8. "The Specification", shall means the various technical specifications attached and referred to in the Tender documents/ It shall also include the latest edition of relevant Indian Standard Specification published before entering into contract. Further in absence of any specific reference in IS the Standards and specifications of any other country may be followed.
9. The "Tender", means the tender submitted by the Tenderer for acceptance by the Owner.
10. The "Alteration Order", means the order given in writing by the Engineer in charge to effect additions to or deleting from the alterations in the works.
11. The "Period of Liability", means the material supplied by the contractor and work shall stand guarantee for the period of 12 months from date of erection and commissioning.

12. "Consulting Engineer"/ "Third Party Agency", means the firm or the person as may be duly appointed by the Owner to act as Consulting Engineer/ Third Party Agency for the purpose of the work covered in the contract.
13. "Inspector" means any person or persons nominated by the Owner to inspect Store or Works under the agreement and shall include his duly authorized representative appointed to act as the Inspector.
14. "Letter of Intent" means the Owner's letter conveying the award of Contract.
15. "The Contractor", means the person or the persons firm or Company whose tender has been accepted by the Owner and includes the Contractor's legal representative his successor and permitted assigns.
16. "Associate" means with respect to any specified Person, any other Person directly or indirectly controlling, controlled by or under common control with such specified Person;
17. "Adjudicator" means the person, who shall be an engineer or a firm of engineers who is appointed by the Company to act as the adjudicator to make a decision on or to settle any dispute or difference between the Company and the Contractor referred to it or her by the parties pursuant to TENDER (Adjudicator) hereof.
18. "Applicable Law" means any statute, law, regulation, ordinance, notification, rule, regulation, judgment, order, decree, bye-law, approval, directive, guideline, policy, requirement or other governmental restriction or any similar form of decision of, or determination by, or any interpretation or administration having the force of law in the Republic of India and the State Government, by any Government Authority or instrumentality thereof, whether in effect as of the date of this Contract or thereafter.
19. "Backup Meter" means the meter installed, operated and maintained by the Successful Bidder as per the provisions laid in the section metering which shall be connected to the same core of the current transformer (CT) and Potential Transformer (PT) to which the Main Meter is connected and shall be used for accounting and billing of electricity in case of failure/repair/maintenance of Main Meter;
20. "NEEGG" for a year is calculated by using the Net Electrical Energy Generation Guarantee (NEEGG) quoted in the Bid offer by the Contractor adjusted with a correction factor to take into account the actual average global solar radiation measured by the calibrated pyranometer for that year.
21. "B.I.S" shall mean specifications of Bureau of Indian Standards (BIS)
22. "Bid" shall mean the bid submitted by the Bidder in response to the Tender Document No. "VMC// / /" issued by the Company.

23. "Bidder" shall mean Bidding Company or a Bidding Individual submitting the Bid. Any reference to the Bidder includes Bidding Company / Bidding Individual including its successors, executors and permitted assigns severally, as the context may require;
24. "Bid Security" shall mean the unconditional and irrevocable bank guarantee to be submitted along with the Bid at the TENDER stage.
25. "Bid Capacity" shall means capacity offered to the bidder in this Bid under invitation.
26. "Bid Deadline" shall mean the last date and time for submission of Bid in response to this TENDER.
27. "CEA" shall mean Central Electricity Authority.
28. "Capacity Utilization Factor (CUF)" means the ratio of the annual output of the plant in kWh versus contracted plant capacity for number of days.  $CUF = \text{plant output in kWh} / (\text{contracted plant capacity in kW} * 365 \times 24)$ .
29. "Change in Law" means the occurrence of any of the following after the date of Bid: A) the enactment of any new Indian law as applicable to the State; B) the repeal, modification or re-enactment of any existing Indian law; C) the commencement of any Indian law which has not entered into effect until the date of Bid; a change in the interpretation or application of any Indian law by a judgment of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the date of Bid;
30. "Competent Authority" shall mean , himself and/or a person or group of persons nominated by for the mentioned purpose herein.
31. "Commercial Operation" with respect to a Unit or the Facility, as the case may be, shall refer to the period after the Commercial Operation Date of such Unit or Facility;
32. "Commissioned" means, in respect of a Unit or the Facility, as the case may be, passing of the Commissioning Test by the Units, as certified by the GEDA/ DISCOM/ Gujarat State Designated Agency or its representative(s) and interconnection of the Unit with the Distribution Grid for receiving the Delivered Energy.
33. "Commission" and "Commissioning" means, the satisfactory, continuous and uninterrupted operation of the equipment/system as specified after all necessary statutory approvals, initial tests, checks and adjustments for a period of at least 3 days to the satisfaction of the Company and necessary certificates are issued by the all concerned/ nodal agencies appointed by appropriate authority/Government.
34. "Completion" means that the Facilities (or a specific part thereof where specific parts are specified in the Scope of Work) have been completed operationally and structurally

- and put in a tight and clean condition and that all work in respect of Commissioning of the Facilities or such specific part thereof has been completed as per the Scope of Work.
35. "Company" means Gujarat Vadodara Municipal corporation (VMC), Vadodara includes the legal successors or permitted assigns of the Company.
36. "Contracted Capacity" shall mean the Total aggregate capacity in KWp, proposed to be allocated by VMC to the Successful Bidder through this bidding process as per terms and conditions specified therein.
37. "Contract" or "Contract Agreement" shall mean the agreement between the VMC and the successful EPC contractor for the execution of the works including therein all documents such as the invitation to tender, instructions to Bidders, General Conditions of Contract. Special Conditions of Contract, Job Specifications, General Requirements, Time Schedule of Completion of Job, Drawings, Letter of Award awarding the work, Agreed variations, if any etc.
38. "Contract Documents" means the documents listed as per Annexure Contract Agreement.
39. "Contractor/ EPC Contractor" means the person(s) whose bid to perform the Contract has been accepted by the VMC and is named as such the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor.
40. "Contractor's Equipment" means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor, but does not include Plant and Equipment, or other things intended to form or forming part of the Facilities.
41. "Construction Period" means the period from Effective Date till date the project got commissioned.
42. "Commissioning Tests" means the tests to be carried out to determine the Commissioning of the Unit or Facility, as the case may be, in accordance with the Testing Procedures specified and as defined in this TENDER in Timeline
43. "Chartered Accountant" shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949.
44. "Day" means calendar day of the Gregorian calendar.
45. "Delivery Point" shall be the interconnection point at which the Successful EPC Contractor shall deliver the power to the VMC's different building of Vadodara

Municipal Corporation. The metering shall be done at this point of Interconnection. All charges and losses up to the Delivery Point shall be borne by the Successful EPC Contractor;

46. "Delivered Energy" means the Electricity measured by the Main Meter at the Delivery Point;
47. "Development Period" means the period starting from Effective date till the project get Commissioned
48. "Defect Liability Period" means the period of validity of the warranties given by the Contractor, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in (Defect Liability) hereof.
49. "Document" or "Documentation" means documentation in printed or written form, or in tapes, discs, drawings, computer programmes, writings, reports, photographs, films, cassettes, or expressed in any other written, electronic, audio or visual form;
50. "Drawings" means all of the drawings (SOFT – AUTOCAD & PDF Format), calculations and documents pertaining to the Project. This shall include both the electrical and civil cum Structure drawing(s);
51. "Distribution Utility" means the local electric distribution owner and operator providing electric distribution and interconnection services to Purchaser at the Premises;
52. "Effective Date" for this Contract shall mean the date of issuance of Letter of Award (LoA) by the Owner.
53. "Electricity" means the electrical energy measured in kilowatt-hours;
54. "Emergency" means a condition or situation that is likely to endanger the safety of the individuals on or about the Project, including Users thereof, or which poses an immediate threat of material damage to any of the Project Assets;
55. "EPC" shall mean Engineering, Procurement & Construction.
56. "EPC Contract" means the engineering, procurement and construction contract or contracts entered into by the VMC with one or more Successful Contractors for, inter alia, engineering and construction of the Project in accordance with the provisions of this TENDER;
57. "EMD" shall mean Earnest Money Deposit.
58. "Engineer" shall mean the authorized officer of the VMC/ Consultant to act as Engineer to supervise the work for the purpose of the contract.
59. "Facilities" means the Plant and Equipment to be supplied and installed, as well as all

the Installation Services to be carried out by the Contractor under the Contract for enabling the installation, construction, testing and commissioning of the Rooftop Solar Power System(s).

60. "Government Authority" means Government of India, any central government or state government or any governmental department, commission, board, body, bureau, agency, authority, undertaking, court or other judicial or administrative body or any sub-division or instrumentality thereof, central, state, or local, having jurisdiction over the Contractor, the Facility, or the performance of all or any of the services, obligations or covenants of Contractor under or pursuant to this Contract or any portion thereof.
61. "Guarantee Test(s)" means the Performance & Guarantee test(s) specified in the (Guarantee Test) to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees.
62. "Good Industry Practice" means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally and reasonably expected from a reasonably skilled and experienced operator engaged in the same type of undertaking as envisaged under this TENDER and which would be expected to result in the performance of its obligations by the Successful Bidder in accordance with this TENDER, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner;
63. "Installation Services" means all those services ancillary to the supply of the Plant and Equipment for the Facilities, to be provided by the Contractor under the Contract; e.g., transportation and provision of marine or other similar insurance, inspection, expediting, Site preparation works (including the provision and use of Contractor's Equipment and the supply of all civil, structural and construction materials required), installation, Commissioning, carrying out guarantee tests, operations, maintenance, the provision of operations and maintenance manuals, training of Company's personnel etc.
64. "Interconnection Facilities" means all the facilities installed by the EPC Contractor at the Relevant Premises inside VMC's different building of VMC, to enable VMC to receive the Delivered Energy from the Project at the Delivery Point, including transformers, and associated equipment, relay and switching equipment, protective devices and safety equipment;
65. "Installed Capacity" means the aggregate capacity of 3000kw (ac) grid connected rooftop solar power plant at various location as certified after the commissioning test at the generating terminal(s);

66. "Installation Work" means the construction and installation of the System and the start-up, testing and acceptance (but not the operation and maintenance) thereof, all performed by or for the EPC Contractor at the Premises;
67. "Insurance Cover" means the aggregate of the maximum sums insured under the insurances taken out by the Successful Bidder, and includes all insurances required to be taken out by the Successful Bidder but not actually taken, and when used in the context of any act or event, it shall mean the aggregate of the maximum sums insured and payable or deemed to be insured and payable in relation to such act or event;
68. "Intellectual Property" means all patents, trade-marks, service marks, logos, get-up, trade names, internet domain names, rights in designs, blue prints, programmes and manuals, drawings, copyright (including rights in computer software), database rights, semi-conductor, topography rights, utility models, rights in know-how and other intellectual property rights, in each case whether registered or unregistered and including applications for registration, and all rights or forms of protection having equivalent or similar effect anywhere in the world;
69. "Law" shall mean in relation to this Agreement, all laws including Electricity Laws in force in India and any statute, ordinance, regulation, notification or code, rule and shall further include without limitation all applicable rules, regulations, orders, notifications by an India Governmental Instrumentality pursuant to or under any of them and shall include without limitation all rules, regulations, decisions and orders of the Appropriate Commission;
70. "Losses" means all losses, liabilities, claims, demands, suits, causes of action, judgments, awards, damages, cleanup and remedial obligations, interest, fines, fees, penalties, costs and expenses (including all attorneys' fees and other costs and expenses incurred in defending any such claims or other matters or in asserting or enforcing any indemnity obligation);
71. "KW" means Kilo-watts;
72. "kWh" shall mean Kilo-Watt-hour;
73. "kWp" shall mean Kilo-Watt Peak;
74. "Month" means calendar month of the Gregorian calendar.
75. "MNRE" means Ministry of New and Renewable Energy, Government of India.
76. "Main Meter" means for each Unit, the Metering System which would primarily be used for accounting and billing of Electricity generated by Units comprising the Facility to be installed at the Delivery Point and operated and maintained by the Successful Bidder.

77. "Maintenance Manual" shall have the meaning ascribed to it in as per tender
78. "Material Adverse Effect" means a material adverse effect of any act or event on the ability of either Party to perform any of its obligations under and in accordance with the provisions of this Agreement and which act or event causes a material financial burden or loss to either Party;
79. "Metering System" means the meters and other applicable devices/instruments installed and used for measurement of Electricity, delivered from the Electricity generated by Units comprising the Facility, as per the specifications provided in TENDER and shall comprise of the Main Meter and the Back Up Meter;
80. "Metering Date" means the first Business Day of each calendar month subsequent to the month in which the Solar Power is generated by the EPC Contractor. The billable units shall be equal to the difference between the meter reading on the Metering Date and the meter reading on the previous month's Metering Date;
81. "Mobilization of the Contractor" means performance by the Contractor of that entire thing necessary to be fully ready to execute Work at site satisfying all Work pre-requisites stipulated in the Contract. Mobilization of the Contractor shall include but shall not be limited to providing of all transport from points of origin to Site, all equipment and materials of construction, all personnel, satisfaction of government requirements, all logistical support to the construction operations and setting up at site in a condition of full readiness to execute Work.
82. "Month" means a period of thirty (30) days from (and excluding) the date of the event, where applicable, else a calendar month;
83. "Notice of Award of Contract/Letter of Award" shall mean the official notice issued by the VMC notifying the contractor that his bid has been accepted.
84. "O&M" means Operations and Maintenance of Rooftop Solar PV system;
85. "Owner" means Vadodara Municipal Corporation (VMC) "Operation Period" means the period commencing from COD and ending on the Transfer Date;
86. "Plant Capacity" is defined as aggregate Bid for Design, Engineering, Supply & Procurement, Erection, Testing, Commissioning and Comprehensive Operation & Maintenance for a Period of Ten (10) years for 3000 KW power plant as per the provisions in this Tender including but not limited to its design, engineering, procurement & supply, construction, testing, commissioning, Comprehensive operation and maintenance.
87. Note: The type and capacity of solar plant mentioned in the tender are indicative and



may liable to change as per site situation for which the final decision shall be of VMC's.

88. "Performance Ratio"(PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured and Temperature correction of three (3) months duration.
89. "Pre-Commissioning" includes checking and testing of the equipment, machinery etc. as required by the Contract, and making them ready for use.
90. "Project Site/ Site" means the parcels of rooftops, rights-of-way, easements and access roads comprised in the Relevant Ground Mounted & Buildings upon which the Unit(s) comprising the Project will be installed;
91. "Project Manager" means the person appointed by the Company in the manner provided in the TENDER (Project Manager) hereof and named to perform the duties delegated by the Company.
92. "Project" means the development, designing, construction, installation, commissioning, comprehensive operation and maintenance of the Facility;
93. "Project Assets" means all physical and other assets relating to and forming part of the Site including:rights over the Site in the form of license, Right of Way or otherwise;tangible assets such as civil works and equipmentProject Facilities situated on the Site;all rights of the Owner under the Project Agreements;financial assets, such as receivables, security deposits etc; insurance proceeds; andApplicable Permits and authorizations relating to or in respect of the Project;
94. "Project Site/ Site" means the parcels of rooftops, Ground Mounted, rights-of-way, main pathway, garden area along with easements and access roads comprised in the Relevant Areas (STP of Vadodara Municipal Corporation of VADODARA MUNICIPAL CORPORATION (VMC), Gujarat) upon which the Unit(s) comprising the Project will be installed;
95. "Prudent Utility Practices" means those practices, methods, techniques and standards, that are generally accepted for use in electric utility industries taking into account conditions in India, and commonly used in prudent electric utility engineering and operations to design, engineer, construct, test, operate and maintain equipment lawfully, safely, efficiently and economically as applicable to power stations of the size, service and type of the Project, and that generally conform to the manufacturer's operation and maintenance guidelines.
96. "Punch list" means those minor items/jobs relating to works outstanding at the time of issuance of "Certificate of Completion and Acceptance" which do not affect the normal

operation of the company and which have been mutually agreed by the Company and the Contractor, to be carried out / further completed (within a fix time period) by the Contractor to the satisfaction of the Company in accordance with the Contract

97. "TENDER document" shall mean the bidding document issued by the Company including all attachments vide TENDER No. VMC /     /     /     /
98. "Relevant Building" means a Building comprising the Project Site;
99. "Relevant Premises" means the required locations inside the VMC's different building premises and land for the project implementation, provided by VMC to the SuccessfulBidder for purpose of implementing the Project;
100. "Right of Way" means the access to the sitewith the intention of using it for installation of Project, including the way from the entry point to the rooftop through the shortest accessible way, easements and other rights of way, howsoever described, necessary for construction, operation and maintenance of the Projects in accordance with this TENDER;
101. "SECI" means Solar Energy Corporation of India.
102. "Solar Power System(s)" means the solar photovoltaic system(s) to be established at the site specified in the TENDER.
103. "Successful Bidder" means the bidder who has been awarded the Contract and described as Contractor for the "Project".
104. "Time for Completion" shall be the date on or before which Commissioning of the Facility has to be achieved to the satisfaction of the Company and such date is specified in NIT.
105. "Scheduled COD" or "Scheduled Commercial Operation Date" means the date of commissioning (Date of completion of work+ successful completion of PR test.)
106. "Solar Power" shall mean electricity generated from the rooftop solar generation project;
107. "Solar Rooftop System" includes a solar PV panel power generation facility to be established by the Successful Bidder on the Relevant Premises of VMC, and includes the integrated assembly of photovoltaic panels, mounting assemblies, inverters, converters, metering, lighting fixtures, transformers, ballasts, disconnects, combiners, switches, wiring devices and wiring, and all other material comprising the Installation Work, including protection equipment and the like necessary to deliver the Electricity generated by it to DisCOM at the relevant Delivery Points;
108. "Specifications and Standards" means the specifications and standards relating to the

quality, quantity, capacity and other requirements for the Project, as set forth in TENDER, and any modifications thereof, or additions thereto, as included in the design and engineering for the Project submitted by the Successful Bidder to, and expressly approved by, VMC.

109. "Statutory Entity" means: In case of a State /any ministry, department, sub-division, instrumentality or agency under the direct control of the state Government; or any company, corporation, government undertaking or other authority under the direct control of the state Government; or any other entity under the direct control of the state Government or established under law; or State Electricity Regulatory Commission, AND In case of any other jurisdiction and the Central Government of the Republic of India, the government of that jurisdiction or the Central Government, any ministry department, sub- division instrumentality or agency or any company corporation government undertaking, commission, or any other entity under the direct or indirect control of such government or Central Government, or a regulatory entity established under law;
110. "System Operations" means the Successful Bidder/EPC Contractor's operation, maintenance and repair of the System performed in accordance the requirements herein;
111. "Taxes" means any Indian taxes including customs duties, GST, local taxes, cess, any other taxes and any impost or surcharge of like nature (whether Central, State or local) on the goods, materials, equipment and services incorporated in and forming part of the Project charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;
112. "Tests" means the tests to be conducted by the Successful Bidder pursuant to the Testing Procedures before the project commissioned.

"Unit" means each power generation installation consisting of solar PV panels and auxiliary equipment and facilities forming part of the Facility to be installed on each Relevant Premises and separately connected with the Distribution Grid of MGVL and all the Units comprising the Facility aggregate to the installed capacity of (TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY

## CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)

113. "VMC" means Vadodara Municipal Corporation.

114. Interpretations

- Language: Unless otherwise agreed by the parties in writing, the parties shall use the English language and the Contract and the other Bid documents, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be written in English, and the Contract shall be construed and interpreted in accordance with that language. If any of the Contract Documents, correspondence or communications are prepared in any language other than English, the English translation of such documents, correspondence or communications shall prevail in matters of interpretation.
- Singular and Plural: The singular shall include the plural and the plural the singular, except where the context otherwise requires.
- Headings: The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.
- Persons: Words importing persons or parties shall include firms, corporations and government entities.
- Men: The word 'Men' in this TENDER shall mean all genders i.e. male, female and others.
- Entire Agreement: The Contract constitutes the entire agreement between the company and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract. The various documents forming the Contract are to be taken as mutually explanatory. Should there be any discrepancy, inconsistency, error or omission in the Contract documents, they may be referred to the Adjudicator and the Contractor shall carry out work in accordance with the decision of the Adjudicator.
- Amendment: No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by an authorized representative of each party hereto.
- Independent Contractor: Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed.
- All employees, representatives or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Company and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Subcontractors and the Company.
- Not in any case the sub-contractor shall claim or shall put any binding to the Company and the sub-contractor must be handled by the Contractor and the Company shall not be responsible for any claims at any time by the Contractor in

relation to the sub-contractor.

- Non-Waiver
- Subject to as per tender clause below, no relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.
- Severability: If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.
- Country of Origin: "Origin" means the place where the materials, equipment and other supplies for the Facilities are mined, grown, produced or manufactured, as the case may be, and from which the services are provided. This shall be according to MNRE guidelines.
- The words "include" and "including" are to be construed without limitation and shall be deemed to be followed by "without limitation" or "but not limited to" whether or not they are followed by such phrases;
- References to "construction" or "building" include, unless the context otherwise requires, investigation, design, developing, engineering, procurement, delivery, transportation, installation, processing, fabrication, testing, commissioning and other activities incidental to the construction, and "construct" or "build" shall be construed accordingly;
- References to "development" include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto, and "develop" shall be construed accordingly;
- Any reference to any period of time shall mean a reference to that according to Indian Standard Time;
- Any reference to "hour" shall mean a period of 60 (sixty) minutes commencing either on the hour or on the half hour of the clock, which by way of illustration means 5.00 (five), 6.00 (six), 7.00 (seven) and so on being hours on the hour of the clock and 5.30 (five thirty), 6.30 (six thirty), 7.30 (seven thirty) and so on being hours on the half hour of the clock;
- Any reference to day shall mean a reference to a calendar day;
- References to the "winding-up", "dissolution", "insolvency" or "reorganization" of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up,

reorganization, dissolution, arrangement, protection or relief of debtors;

- Unless expressly provided otherwise in this TENDER, any Documentation required to be provided or furnished by the Successful EPC Contractor to VMC shall be provided free of cost and in three copies, and if VMC is required to return any such Documentation with their comments and/or approval, they shall be entitled to retain two copies thereof.

**Signature of Tenderer(s) with the seal of the firm.**

# **General Terms and Conditions**

## **Use of Contract Documents & Information**

- The Contractor shall not, without VMC's prior written consent, disclose the Contract or any provision thereof or any specification, plan, drawing, pattern therewith to any person other than person employed by the Contractor in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend strictly for purpose of performance only.
- The Contractor shall not, without VMC's prior written consent, make use of any document or information except for purpose of performing the Contract.
- Any document other than the Contract itself shall remain the property of VMC.

## **Patent Rights**

- The Contractor shall indemnify VMC against third party claims of infringement of patent, trademark or industrial design rights arising from use of goods/ design or any part thereof.

## **Materials and Workmanship**

- All materials shall be of the best quality and workmanship capable of satisfactory operation under the operating and climatic conditions as may be specified. Unless otherwise specified, they shall conform in all respect to the latest edition of the relevant Bureau of Indian Standard (BIS) specification wherever Indian specifications apply or British Standard (BS) or International Electro-technical Commission (IEC) or internationally accepted standard.
- The Contractor shall supply and deliver all equipment and materials for installation at site. The Contractor shall arrange for transportation, loading and unloading and safe storage of materials at project site at his own cost and risk.
- If the Contractor offers equipment manufactured in accordance with other international well recognized standards, he shall, in that case, supply a copy in English of the Standard Specification adopted and shall clearly mention in what respect such standard specification differs from Indian Standard Specifications. The plant, equipment, and materials offered by the Contractor should comply with one consistent set of Standards only as far as possible.
- No deviation in foreign exchange rate shall be admissible at any point of time after submission of the Bid.

## **Inter-changeability**

- All the parts shall be made accurately to standard gauges and specifications so as to facilitate replacement and repairs. All corresponding parts of similar apparatus shall be inter-changeable.

## **Packing and Marking**

- The Contractor shall be responsible for securely protecting and packing the plant and equipment as per prescribed standards in force to withstand the journey and ensuring safety of materials and also arrival of materials at destination in original condition and good for contemplated use. Packing case size and weight shall take into consideration the moteness of the goods' final destination and absence of heavy material handling facilities at all points in transit.
- Packing lists of materials shall be provided in each package to facilitate checking up of the contents at the destination.
- In order to import any items, associated with the Project, from abroad or from any other state in India, the Contractor shall have to arrange any clearance, permission, if required at his own risk, from any Government (Government of State and Government of India) or any Government (Government of State and Government of India) controlled organization for transportation of materials from manufacturing shop to delivery at any site. Necessary certificates if so required shall be issued by VMC within reasonable time after getting written request from the Bidder along with the necessary documents substantiating necessity of such approvals. All packing material is the property of VMC and shall be immediately deposited by the Contractor to VMC's Store at Project Site.

## **Negligence**

- If the Contractor neglects to manufacture or supply the plant and equipment with due diligence and with expeditiousness or refuses or neglects to comply with any reasonable order given to it in writing by VMC or contravenes any provision of the Contract, VMC may give seven (7) seven days notice in writing to the Contractor, to make good the failure, neglect or contravention complained of. If the Contractor fails to comply with the notice within reasonable time from the date of serving thereof, in the event of failure, neglect or contravention capable of being made good within that time, then in such case, if VMC thinks fit, it shall be lawful for it to take the manufacture or supply of plant wholly or in part, out of the Contractor's hand and give it to another person on Contract at a reasonable price and VMC shall be entitled to retain any balance which may be otherwise due on the Contract by it to the Contractor or such part thereof as may be necessary, to the payment of the cost of manufacture or supply of such plant as aforesaid.
- If the cost of executing the work as aforesaid shall exceed the balance due to the Contractor and the Contractor fails to make good such deficiency, VMC shall take action in the manner it may consider deemed fit in terms of the Contract.

## **Statutory Responsibility**

- The Contractor shall comply with all applicable laws, bylaws, rules, and regulations and shall procure and maintain their validity all necessary Municipal, Panchayat and Government permits & licenses etc. at its own cost..



## **In solvency and Breach of Contract**

- VMC may at anytime by notice in writing summarily terminate the Contract without compensation to the Contractor in any of the following events:
  - a. If the Contractor at any time, is adjudged insolvent or have a receiving order or order from administration of its state made against it or shall take any proceeding for compensation under any Insolvency Act for the time being in force or make any conveyance or assignment with its creditors or suspend payment. If the Contractor being a company is wound up voluntarily or by the order of a court or a Receiver, Liquidator or or manager on behalf of the Debenture holder is appointed or circumstances have arisen which entitle the Court or debenture holder to appoint a Receiver, Liquidator or Manager.

## **Delay in Execution or Failure to Supply**

- Any delay in completion of the work shall attract liquidated damage/ penalty for late completion as per Liquidated Damage penalty as per Tender.
- If the Contractor fails to deliver the plant or fails to start the work within specified time frame after issue of LoA or leaves the work site after partial execution of the work, VMC shall have the right to get the work done through any other agency at the risk and cost of the Contractor. Further to this, VMC may, without prejudice to the right of the Contractor to recover damages for breach of trust of the Contract, may impose penalties.
- Notwithstanding anything contained in this tender document, bidders to note that Completion time of Project activities as per the prescribed timeline/schedule are the essence of the Contract. It is envisaged that EPC Contractor shall plan and achieve progress of the Project on or before the prescribed timeline/schedule without fail.

If, at any time, the EPC CONTRACTOR's actual progress falls behind or is likely to fall behind the agreed schedule of the break-up/detailed Project activities, the EPC CONTRACTOR shall submit to the OWNER (VMC), a revised programme with catch up schedule, taking into account the prevailing circumstances and delay in the respective activities/ milestones. The EPC CONTRACTOR shall, at the same time/ for the with notify promptly to VMC of the steps being taken to expedite progress of the Project activities, so as to achieve completion of such activities within the agreed Time schedule for Completion. The Contractor shall in order to overcome the situation, forthwith mobilise required additional resources like manpower, materials, machineries etc. to achieve the prescribed timeline/schedule at his risk and cost. In case further slippage is observed in the progress of Project activities, as per agreed time schedule or failure by EPC Contractor, at any stage of the Contract, to perform the Contract diligently to fulfill his obligations as per the EPC Contract, VMC reserves the right to engage any other Contractor(s)/sub-contractor(s) at any time, at the risk and cost of the EPC Contractor to ensure completion of the Project activities in line with the agreed time schedule. Further, VMC will also deduct Liquidated Damages (LD) arising out of any such delay, if any, as per the terms of this tender document or recover the costs, expenses, losses, damages incurred or suffered by VMC as per the recourse available under this tender document or any other law for the time being in force.

## **Liquidated Damages for Delay and Under performance**

### **A. Delay in Commissioning**

- In case the Contractor fails to achieve successful Commissioning of plant by the due date indicated in Timeline as per tender, then VMC shall levy the Liquidated Damages on the Contractor.
- In case the EPC Works of solar PV project (COD with GEDA/Gujarat State Designated Agency, with full capacity) is not completed within the stipulated time period (i.e. 240 days from zero date) and the delay is not due to Force Majeure or due to VMC's default then the Contractor shall pay to the VMC compensation for delay subject to following:
  - i) Delay up to 15 days: Amount of Rs. 5,000/Day shall be deducted as penalty for the first 15 days of delay calculated on per day basis and proportionate to the capacity not commissioned as COD with GEDA/Gujarat State Designated Agency.
  - ii) Delay of more than 15 days and up to 30 days: Amount of Rs. 10,000/day shall be deducted on per day basis and proportionate to the capacity not commissioned as COD with GEDA/Gujarat State Designated Agency.
  - iii) Delay of more than 30 days and up to 120 days: Amount of Rs. 15,000/day shall be deducted on per day basis and proportionate to the capacity not commissioned as COD with GEDA/ Gujarat State Designated Agency

### **Maximum applicable Liquidated Damages:**

The upper ceiling for total liquidated damages for delay shall be maximum 10% of the EPC Contract Price.

- The said right of the VMC to levy damages on account of delay shall be without prejudice to and in addition to the right of the Company to get the concerned work done from a third party at the complete risk and cost of the Contractor.
- The Contractor shall indicate duration of all the activities in activity chart in conformity with the overall schedule of the completion of project. The Contractor shall submit the activity chart in form of Bar Chart which shall be discussed and finalized and shall be apart of Contract.
- Any strike/ lockouts at works or site of the Contractor or his sub-supplier / sub-contractor shall not be considered as force majeure condition.
- For calculation of penalty, date of LoA shall be the reference date.

### **B. Underperformance during Performance Ratio Test of Solar Roof top System**

- At the time of the Performance Ratio Test, any shortfall in the Performance Ratio (PR) as determined through the Test Procedure in the Annexure: Procedure for Performance Testing will attract imposition of Liquidated Damages after one (1) unsuccessful chance. For any shortfall in **PR (Temperature corrected) below 75%** by the Bidder for the second (2) time, a penalty of 1% of the EPC cost of installed capacity of particular plant (including taxes & duties) shall be levied. In case the first the Test is unsuccessful then penalty shall not be charged but the Contractor has to make the necessary corrections to conduct the test again within the stipulated

maximum 10 (Ten) days. In the second (2<sup>nd</sup>) time, a penalty at the rate specified above shall be levied on the Contractor. The penalty shall be deducted from the pending payment and Security Bank Guarantee/FDR and O&M period shall start irrespective of result of three (3) months duration performance ratio test.

### **Penalty for Loss of Generation during O&M**

- For each Contract Year, the Contractor shall demonstrate “Actual Delivered Energy” at the Metering Point as compared to NEEGG (as per annexure).
- If for any Contract Year, it is found that the “Actual Delivered Energy” at the metering point is less than ‘NEEGG’ (as per Annexure). for the particular year, the Contractor shall pay the compensation to VMC equivalent to Rs. (DISCOM Tariff)
- {CCC building Tariff} x 1.50) per kWh of under-generation. The same shall be recovered from payments yet to be made by VMC to the Contractor and/ or from the Bank Guarantees available with VMC.
- In case of any defect in the system after Commissioning, the Contractor shall initiate action for repair it within forty-eight (48) hours. After 48 hours, penalty shall be charged and the same shall be deducted from the Bank Guarantee/FDR submitted to VMC. A penalty at the rate of Rs. (DISCOM Tariff { CCC building} x 1.50) per kWh shall be charged by the company for the loss of generation due to that effect post 48 hours.
- However, in case the Contractor fulfils the NEEGG at the end of the year then the amount deducted as a penalty for loss of generation as per this Clause shall be adjusted in the Contractor’s bill or reimbursed. In case the Contractor fails to meet the NEEGG at the end of the year then above-mentioned penalty shall be adjusted from the penalty calculated at the end of the year for the shortfall in the generation so that there is no duplication of penalty for the same loss of generation. The first 48 hours shall not be considered for the penalty in case of any defect.
- In case the Project fails to generate any power continuously for 6 months any time during the O&M period, it shall be considered as an “Event of Default”.
- Upon occurrence of any Event of Default mentioned in herein above, VMC shall have the right to encase the entire amount of Security Bank Guarantee/ FDR submitted by the Contractor and withheld any other pending payment.

### **Defect Liability**

- The Contractor must warrant that the facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed.
- If it shall appear to the authorized representative of the Company that any supplies have been executed with unsound, imperfect or unskilled workmanship, or with materials of any inferior description, or that any materials or articles provided by the Contractor for the execution of Contract are unsound or otherwise not in accordance with the Contract, the Contractor shall on demand in writing inform the authorized representative of the Company specifying the item, materials or articles complained of, notwithstanding that the same may have been inadvertently or otherwise passed, certified and paid for. The Contractor shall forthwith rectify or remove and replace that item so specified and provide other proper and suitable materials or articles at its own charge and cost, and in the event of failure to do so within a period to be specified by the authorized representative of the Company in its demand aforesaid,

the Project Manager may on expiry of notice period rectify or remove and re-execute the time or remove and replace with others, the materials or articles complained of as the case may be at the risk and cost in all respects of the Contractor. The decisions of the authorized representative of the Company as to any question arising under this Clause shall be final and conclusive.

- The Contractor shall be liable for the Operation and Maintenance for Ten (10) years of the Facility and consequently shall be required to rectify any defects that emerge during the operation of the Facilities for the entire term of this Contract. The Defect Liability Period shall be thirty six (36) months from the date of start of O&M Period ("Defects Liability Period").
- If during the Defect Liability Period any defect found in the design, engineering, materials and workmanship of the Plant and Equipment supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with VMC regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect.
- Furthermore, without prejudice to the generality of the foregoing, it is clarified that the Contractor shall also be responsible for the repair, replacement or making good of any defect or of any damage to the Facilities arising out of or resulting from any of the following causes:
  - a. Improper operation or maintenance of the Facilities by the Contractor during operation and maintenance of the Facility; or
  - b. Operation of the Facilities violating specifications of the Facilities.
- VMC shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. VMC shall afford all reasonable opportunity for the Contractor to inspect any such defect.
- VMC shall provide the Contractor all necessary access to the Facilities and the Site to enable the Contractor to perform its obligations.
- The Contractor may, with the consent of the Company, remove from the Site any Plant and Equipment or any part of the Facilities that are defective, if the nature of the defect and/ or any damage to the Facilities caused by the defect is such that repairs cannot be expeditiously carried out at the Site.
- If the repair, replacement or making good is of such a nature that it may affect the efficiency of the Facilities or any part thereof, the Company may give to the Contractor a notice requiring that tests of the defective part of the Facilities shall be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests.
- If such part fails the tests, the Contractor shall carry out further repair, replacement or making good (as the case may be) until that part of the Facilities passes such tests. The tests, in character, shall in any case be not inferior to what has already been agreed upon by VMC and the Contractor for the original equipment/part of the Facilities.
- If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall

in no event be considered to be less than seven (7) days), the Company may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by VMC in connection therewith shall be paid to VMC by the Contractor or may be deducted by the Company from any monies due to the Contractor or claimed under the Performance Guarantee, without prejudice to other rights, which VMC may have against the Contractor in respect of such defects.

- If the Facilities or any part thereof can not be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Company because of any of the aforesaid reasons. Upon correction of the defects in the Facilities or any part thereof by repair/replacement, such repair/replacement shall have the defect liability period of thirty six (36) months from such replacement.
- In addition, the Contractor shall also provide an extended warranty for any such component of the Facilities and for the period of time. Such obligation shall be in addition to the Defect Liability Period specified under as per tender.

### **Termination for Default**

- The Company may, without prejudice to any other remedy for breach of Contract, by written notice of defaults sent to the Contractor, terminate the Contract in whole or in part if the Contractor fails to deliver or execute any or all of the goods within the time period(s) under the Contract or any extension thereof granted by VMC pursuant to the clause for Delay in Execution or Failure to Supply or, If the Contractor fails to perform any other obligations(s) under the Contract.
- In the event the Company terminates the Contract in whole or in part, pursuant to above, the Company may procure, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered; the Contractor shall be liable to the Company for any excess costs for such similar goods. However, the Contractor shall continue the performance of the Contract to the extent not terminated.
- In case the Contractor is not able to demonstrate the "Actual Delivered Energy" as per annexure during the Performance Guarantee Test and after the penalties levied as mentioned in tender, VMC reserves the right to terminate the Contract at its discretion if there are no efforts made from the Contractor to correct the issues regarding plant performance.
- In case termination of the Contract due to default, the Contractor may be blacklisted by GEDA/Gujarat State Designated Agency, VMC, DISCOM, GUVNL, GERMI and its associate companies, etc. for future work.

### **Conditions Precedent to Commissioning**

- EPC Contractor and VMC have to satisfy the conditions precedent to commissioning of the project as per the timeline. The Conditions Precedent required to be satisfied by VMC shall be deemed to have been fulfilled when VMC shall have:
  - i) Given to the EPC Contractor the Right of Way to the Site.
  - ii) Provided approval for the general arrangement Drawings submitted by the EPC Contractor along with the notice, to enable the EPC Contractor to install the, Rooftop Solar System in accordance with the Specifications and Standards and subject to the

terms and conditions specified in such approval;

- iii) Ensure timely clearances and requisite approvals as required from the VMC (Administrative, Regulatory, and Policy etc.) adhering to the stipulated time line.
- iv) A Monthly Monitoring Group (MMG) will be formed and MMG shall remain in existence during the construction of the project to monitor monthly progress of the Project. In case of any issue with regards to the infrastructure requirements for accessing the site, Right of Way, Finalization of Drawing & Interconnection Plan, and any other issues related to project implementation, MMG shall work towards rectifying and finalizing the project within the time frame as highlighted in Timeline as per Tender. The MMG will monitor the project plan and its implementation and also highlight key issues (both at the VMC and EPC Contractor level which might cause a delay in the commissioning of the project). These delays / perspective delays shall be captured in the minutes of the meeting along with the responsibilities and timeline for curing these. The MMG and its minutes will also be used to arrive at the party responsible for the delay in commissioning.
- v) Authorization for Net Metering to the EPC Contractor and also provide legal, administrative and technical signatory approvals required by the EPC Contractor during the course of entire application process until net metering provisions are not met.
- The Conditions Precedent required to be satisfied by the EPC Contractor prior to the Commissioning shall be deemed to have been fulfilled when the EPC Contractor shall have:
  - i) Provided Performance Security to VMC;
  - ii) Provided a notice to VMC on meeting their conditions precedent along with a set of drawings, interconnection plan and project completion schedule to be approved by VMC/TPE Agency. The project completion schedule shall be strictly adhering to the timeline.
  - iii) Ensure timely clearances and requisite approvals as required for project implementation (Administrative, Regulatory, and Policy etc.) adhering to the stipulated timeline as per tender
  - iv) To apply for and obtain net energy meter for the Project and bear all the costs for the same by EPC Contractor;
  - v) Ensure standard testing conducted before COD as per procedures laid down in Timeline and cross checked with DISCOMs for grant of net metering.
  - vi) To notify the VMC/TPE Agency about the date of testing of the system prior to the Commissioning of the Project;
  - vii) To notify the VMC/TPE Agency, in writing, about any delay with regards to right of way to the allotted rooftop; and
  - viii) Submit the monthly progress report to the Monthly Monitoring Group

Provided that upon request in writing by the EPC Contractor, VMC may, in its discretion, waive any of the Conditions Precedent set forth in as per tender. For the avoidance of doubt, VMC may, in its sole discretion, grant any waiver here under with such conditions as it may deem fit.

## Obligations of the EPC Contractor

- Make its own arrangement for and take reasonable measures and shall be solely responsible for security of the Facility Installations, including commercially reasonable monitoring of the Site's alarms, if any
- Comply with the directions of the VMC in case of emergency to shut down the plant. VMC will only issue directions to the same in case of the occurrence of a state of Emergency (a state of emergency may be defined as a situation where the safe working of the internal grid of VMC/ grid sanctity of the distribution grid is or is likely to be compromised due to conditions beyond the control of the VMC). In such a condition, the VMC reserves the right, in order to ensure safe operation of the Internal Grid in accordance with the applicable Distribution Code, Applicable Law and directions/ regulations, to shut down the line and not accept any Electricity from such part of the Facility that is affected by the Emergency. VMC will exercise such right either through a written notice to the EPC Contractor or in case the written request cannot be made at the time, through a verbal request from the competent authority with the VMC responsible for network management (and back it up with a written request later), providing as much lead time as would be practicable. Upon VMC exercising such right, the EPC Contractor will suitably back down its generation from the Facility. VMC will, however, make reasonable endeavours to remedy such Emergency, and bring back normalcy at the earliest. VMC will have no liability to the EPC Contractor in such circumstances.
- Procure that all facilities and amenities within the solar rooftop power system are operated and maintained in accordance with Good Industry Practice.
- Support, cooperate with and facilitate VMC in the implementation and operation of the Project in accordance with the provisions of this TENDER; and
- VMC to provide water to the EPC Contractor for the cleaning of the solar modules and other O&M functions at one point. Contractor has to make necessary arrangement for cleaning of the solar panels. In case of water scarcity, the EPC Contractor has to be informed in advance of the same and will have to arrange water, as per its requirements. The Raw Water connection point may be provided by VMC at site as available. EPC Contractor obtains water by providing and laying pipe set, from nearest water connection point made available. The VMC will have the right to charge the EPC Contractor reasonable charges for the water connection and the supply of water which may be provided to the EPC Contractor.
- Provide Auxiliary Power to the EPC Contractor for the projects development, operation and maintenance purposes. The VMC will have the right to charge the EPC Contractor reasonable charges for the electricity connection and the supply of power which may be provided to the EPC Contractor.
- EPC Contractor shall enter into net metering agreement with concerned Distribution licensee.

## **Obligations during Construction, Commissioning and Operation**

- The EPC Contractor will be responsible for the design, implementation, operation and maintenance of the project. The EPC Contractor will Design, Engineer, Procure, Under take Civil and Electrical work including Erection, Testing & Commissioning of the solar PV project and subsequently carryout the Operation and Comprehensive Maintenance (O&M) of the project for a period of 10 years in accordance with the provisions of the Request for Proposal.
- The EPC Contractor will, within the time specified in the Time lines, submit to VMC/TPE Agency, detailed drawings and inter connection plan of the systems to be developed under the Project for approval to VMC. If VMC/TPE Agency has any objection/ recommendation in the Drawings, VMC/TPE Agency will communicate the same to EPC Contractor as per the timelines in the Time lines. In case of objection/clarification, If any, the EPC Contractor shall submit its response to the objection/clarification as per Time lines.
- The EPC Contractor shall procure the solar module in line with the MNR Requirement on domestic content.
- The EPC Contractor will be required to submit a daily progress report to VMC/TPE Agency beginning with signing of Contract Agreement till the COD in such form and latest by the seventh (7th) day of the month to VMC/TPE Agency. This shall be subsequently followed by a meeting to discuss the progress of the project on such date as intimated by the VMC/TPE Agency. A Monthly Monitoring Group (MMG) /VMC with representation of at least one (1) member of the EPC Contractor and Sr. Manager/Sr. Officials of the VMC and TPE Agency shall be formed for all the projects within seven (7) days of from the Zero (Effective) Date. The group shall monitor the progress of the Projects on daily basis.
- The EPC Contractor will notify VMC/TPE Agency as per the Timelines for commissioning of the system. VMC/ TPE Agency will nominate one or two representative to participate in the process of confirming the Commissioning Tests of the Unit/ Facility.
- The EPC Contractor will bear all costs pertaining to the installation and Commissioning of the systems and these costs will not be recoverable in any form from VMC.
- EPC Contractor will be responsible for achieving the Commercial Operation of the Facility latest by the Scheduled COD.
- The EPC Contractor will furnish to VMC/TPE Agency, by way of a written notice, a proposed interconnection plan, if applicable, together with details of the Relevant Premises pertaining to each phase, and estimated time lines for the Commissioning of the phases as per timelines.
- Testing Procedures: The EPC Contractor and VMC/TPE Agency or its representative(s) shall implement the testing procedures mentioned in the TENDER, within the timeline given in TENDER.
- Performance Ratio (PR) shall be conducted after Plant commissioned as per the GH levels of the location. PR (temperature corrected) should be shown minimum of 80% at the time of inspection for initial commissioning for clearing the System Acceptance Test" Definition of Performance Ratio to be included in TENDER which is



to be read as "Performance Ratio (PR) means the ratio of plan to output versus installed plant capacity at any instance with respect to the radiation measured.

- The EPC Contractor will discuss with VMC/TPE Agency and use the information regarding Electricity generated during testing, commissioning, synchronization, testing and start-up and in getting the Net Metering agreements executed.
- The EPC Contractor will comply with the provisions of Law including regarding operation and maintenance of the Project and all matters incident thereto.
- The EPC Contractor will submit regular forecasts for availability of the Facility and expected generation from the Facility to VMC as per applicable regulations of the Commission.
- The EPC Contractor will provide and lay down the dedicated electrical cables for transmission of Solar Power from the Project up to the Delivery Point. The Delivery Point will be where the Main Metering System is located. VMC will be entitled to liquidate damages for delay in achieving the COD by Scheduled Commercial Operation Date if the EPC Contractor fails to Commission the Project on or before the Scheduled Commercial Operation Date. These damages will be met through the Security Bank Guarantee equivalent to the amounts due to it as above.

### **Obligations Relating to Medical Aid**

- For providing emergency medical aid to Users, the EPC Contractor shall, at each Station, setup and operate a medical aid post equipped to render first aid and to assist in accessing emergency medical aid from hospitals in the vicinity.

### **Obligations Relating to Aesthetic Quality of the Rooftop Solar Project**

- The EPC Contractor shall maintain a high standard in the appearance and aesthetic quality of the Rooftop Solar Project and achieve integration of the Solar Power System with the character of the surrounding landscape through both appropriate design and sensitive management of all visible elements. The EPC Contractor shall engage professional architects and town planners of repute for ensuring that the design of the Rooftop Solar Project meets the aforesaid aesthetic standards.

### **Obligations Relating to Noise Control**

- The EPC Contractor shall take all such measures as may be necessary in accordance with Applicable Laws and Good Industry Practice to control and mitigate the noise arising from the rooftop solar project and its impact on Users and the neighborhood.

### **Branding of Rooftop Solar Project**

- The rooftop solar Project or any part thereof shall not be branded in any manner to advertise, display or reflect the name or identity of the EPC Contractor or its shareholders.

## **Obligations relating to Inter-Connection**

- In consideration of this TENDER and the applicable charges, the covenants and warranties on the part of the EPC Contractor herein contained, VMC, in accordance with the terms and conditions set forth herein, hereby grants to the EPC Contractor, leave and rights in respect of the land/ roof tops owned by VMC for the purpose of connecting the rooftop solar systems to [nearest existing evacuation point], and for no other purpose whatsoever, within the Timelines given in TENDER.

## **Special/temporary right of way**

- The EPC Contractor shall bear all costs and charges for any special or temporary right of way required by it in connection with access to the Site. The EPC Contractor shall obtain at its own cost such facilities on or outside the Site as may be required by it for the purposes of Project and the performance of its obligations under this TENDER.

## **Access to VMC and the VMC's Electrical Engineer**

- The right of way and right to the Site granted to the EPC Contractor here under shall always be subject to the right of access of VMC and the VMC's Electrical Engineer and their employees/ agents for regular activities taken up by the VMC for inspection, viewing and exercise of their rights and performance of their obligations under this TENDER.

## **Maintenance obligations**

- During the Development Period, VMC shall maintain the roads, pathways and rooftops along or near the Project, at its own cost and expense, so that its safety are at no time materially inferior as compared to its condition 7 (seven) days prior to the last date for submission of the Bid, and in the event of any material deterioration or damage other than normal wear and tear, undertake repair thereof, or pay to the EPC Contractor the cost and expense, as determined by the VMC Electrical Engineer, for undertaking such repair after the Effective Date. For the avoidance of doubt, VMC shall undertake only routine maintenance during the Construction Period, and it shall undertake special repairs only for ensuring safe operation of the roads, pathways and roof tops along the roof top solar project, or in the event of excessive deterioration or damage caused due to unforeseen events such as floods or torrential rain.

## **Protection of Site from encroachments**

- During the term of the TENDER, the EPC Contractor shall protect the Site from any and all occupations, encroachments or Encumbrances, and shall not place or create or permit any Contractor or other person claiming through or under the EPC Contract or to place or create any Encumbrance or security interest over all or any part of the Site or the Project Assets, or on any rights of the EPC Contractor therein or under this TENDER, save and except as otherwise expressly set forth in this TENDER.

## **Access to Premises**

- The EPC Contractor will give the VMC a schedule and reasonable written notice before any entry on to the Relevant Premises by the EPC Contractor's employees, agents or contractors. VMC will make available to the EPC Contractor access to the

Facility Installation and the Relevant Premises for the purposes set below. Notwithstanding anything to the contrary in this TENDER, the EPC Contractor shall be permitted to access the Relevant Premises twenty-four (24) hours a day, seven (7) days a week for emergency purposes, as reasonably determined by the EPC Contractor. Within twenty-four (24) hours of such emergency access, the EPC Contractor shall provide the VMC with a written explanation of the nature of the emergency.

## **Installation, Operation and Ownership of the Facility**

- VMC will also authorize the EPC Contractor to use the Relevant Premises and the Site only for the purposes of installation, operation and maintenance of the solar power generation facility installation.
- The EPC Contractor undertakes not to use the Site for any purpose other than as afore said.
- The EPC Contractor shall be solely responsible for operation and maintenance of the Facility Installations (subject, however, to the obligations and responsibilities of the VMC herein), including without limitation the obligation to promptly make or pay (as determined by the VMC) for any repairs to any part or all of the Site to the extent directly caused by the EPC Contractor, its employees, agents, contractors or subcontractors, and shall, at all times during the Term, maintain the Facility Installation in good operating condition. The EPC Contractor shall also be responsible for maintaining the structural integrity of the rooftops and ensure that any activity which may result in water seepage occurs.
- The EPC Contractor will also undertake cleaning of the solar system at regular intervals; however the EPC Contractor will not use water jets/ pressurized hoses for the cleaning as the water may enter the internal circuitry laid down around these premises.
- The EPC Contractor shall bear all risk of loss with respect to the Facility Installations and shall have full responsibility for its operation and maintenance in compliance with all the Laws and Approvals. The EPC Contractor shall coordinate in advance all such repair and maintenance work with the manager of the relevant buildings comprising the Site or his/her designee so as not to restrict parking access or interfere with scheduled activities on the relevant building comprising the Site. Upon such request for repair and maintenance work, the VMC shall respond to such request within Ten (10) Business Days. If the VMC does not respond to such request within such Ten (10) Business Days period, such request shall be deemed approved by the VMC. All such work shall be diligently prosecuted to completion to the end that such work shall not remain in a partly finished condition any longer than is necessary for its completion.

## **Security**

- The EPC Contractor shall make its own arrangement for and take reasonable measures and shall be solely responsible for security of the Facility Installations,

including commercially reasonable monitoring of the Site's alarms, if any.

- The EPC Contractor shall check security and fire protection systems on a monthly basis.
- Comprehensive Operation and Maintenance during entire life of the systems shall include provision of adequate security provisions
- VMC acknowledges and agrees that unless otherwise specified in this TENDER it shall, at its own cost and expense, provide or cause to be provided security within the limits of the Solar Rooftop Power System for the prevention of terrorism, hijacking, sabotage and/or similar acts or occurrences; provided that VMC and the EPC Contractor may at any time mutually enter into an agreement to jointly provide security services to the rooftop solar project.
- The EPC Contractor shall provide and maintain perimeter fencing or other suitable protection around the rooftop solar project and shall be responsible for the security arrangements, which also includes providing & maintaining necessary equipment at the entry, exit and within the rooftop solar project in order to maintain orderly conduct of its business and the security thereof.
- The EPC Contractor shall abide by and implement any instructions of VMC for enhancing the security within and around the rooftop solar project. The EPC Contractor shall not be entitled to any compensation for disruption of its operations or loss or damage resulting from VMC's actions or the actions of any organization authorized by VMC other than those resulting from wilful or grossly negligent acts or omissions of such organization. VMC agrees that it shall cause the relevant organizations to take such actions as reasonably deemed necessary by them, without unduly or unreasonably disrupting the operations of the rooftop solar project or interfering with the exercise of rights or fulfillment of obligations by the EPC Contractor under his TENDER. The EPC Contractor agrees that it shall extend its full support and cooperation to VMC and to the other organization authorized by VMC in the discharge of their obligations there under.
- Subject to the rights of the EPC Contractor under this as per tender, VMC or any agency duly authorized by it shall be entitled to inspect and search any person or vehicle entering the Site or departing there from, without unduly or unreasonably disrupting the operations of the VMC System.

### **Existing utilities and roads**

- Notwithstanding anything to the contrary contained herein, the EPC Contractor shall ensure that the respective entities owning the existing rooftops, right of way or utilities on, under or above the Site are enabled by it to keep such utilities in continuous satisfactory use, if necessary, by providing suitable measures.
- The EPC Contractor shall, subject to Applicable Laws and with assistance of VMC, undertake shifting of any utility including electric lines, water pipes and telephone cables, to an appropriate location or alignment within or outside the Site if and only if such utility causes or shall cause a material adverse effect on the construction, operation or maintenance of the Project. The cost of such shifting shall be borne by EPC Contractor.

## **Breach and Cancellation of the Contract**

- In case of non-performance in any form or change of the covenant and conditions of the Contract by the Contractor, the Company shall have the power to annul, rescind, cancel or terminate the order and upon its notifying in writing to the Contractor that it has so done, this Contract shall absolutely determine. The decision of the Company in this regard shall be final and binding.
- The Company may cancel the order or a portion thereof, and if so purchase or authorize purchase of the plant/equipment not so delivered or order Plant/Equipment of similar description (opinion of the Company shall be final) at the risk and cost of the Contractor.

## **Force Majeure**

- In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under this Contract, relative obligation of the party affected by such Force Majeure shall be treated as suspended during which the Force Majeure Clause lasts.
- The term "Force Majeure" shall have here in mean riots (other than among the Contractor's employee), Civil commotion, War (whether declared or not), invasion, act of or against enemies, hostilities, civil war, rebellion, revolution, insurrection, military coup, damage from aircraft, nuclear fission, embargoes, quarantines, acts of god such as earthquake (above 7.0 magnitude on Richter scales), lightning, unprecedented floods, fires not caused by the Contractor's negligence and other causes which the Contractor has no control and accepted as such by VMC whose decision shall be final and binding. Normal rainy season and monsoons are not Force Majeure.
- Upon occurrence of such causes and upon its termination, the party alleging that it has been rendered unable as aforesaid, thereby, shall notify the other party in writing by registered notice within 24 (twenty four) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.
- Time for performance of the relative obligation suspended by the Force Majeure shall stand extended by the period for which such clause lasts.
- If works are suspended by Force Majeure conditions lasting for more than twenty (20) days, VMC shall have the option of cancelling this Contract in whole or part thereof, at its discretion.
- The Contractor shall not claim any compensation for Force Majeure conditions and shall take appropriate steps to insure men and materials utilized by it under the Contract well in advance.

## **Insurance**

- During the construction period, i.e. before the Commissioning of the Project, all insurance related expenses shall be borne by the Contractor. The goods supplied under the Contract shall be fully insured against the loss or damage incidental to manufacture or acquisition, transportation, storage, delivery, theft, riots, natural or other disaster, etc. in such a manner that the Company shall not incur any financial

loss, as long as the construction of the Project continues to remain under the custody of the Contractor.

- In case of any loss or damage or pilferage or theft or fire accident or combination of the said incidents etc. under the coverage of insurance, the Contractor shall lodge the claim as per rules of insurance. Any FIR required to be lodged to local Police Station shall be the responsibility of the Contractor.
- The Contractor shall arrange to supply/ rectify/recover the materials even if the claim is unsettled for timely completion of the Project. The final financial settlement with the insurance company shall be rested upon the Contractor.
- In case of any delay of the Project attributable to the Contractor, the Contractor himself in consultation with the Company should take the extension of insurance. Any financial implications shall, however, be borne by the Contractor.
- The Contractor shall arrange for providing insurance coverage to its workmen under Workmen's Compensation Act or similar Rules and Acts as applicable during execution of work for covering risk against any mishap to its workmen. The Contractor shall also undertake a Third Party Insurance. The Company shall not be responsible for any such loss or mishap.
- The EPC Contractor shall provide or obtain and maintain in force throughout the period of O&M the following Insurance coverage: (i) Insurance to cover third party liability of appropriate value along with an undertaking indemnifying VMC from any such claim.  
(ii) Workmen compensation and /or group personal accidents Insurance policy covering all its employees and works including of the sub-contractor. Pilferage, theft, burglary also are to be covered by the EPC Contractor/O&M operator. (iii) Fire and allied perils including earth quake, flood, storms, cyclone, tempest, insurance policy shall be taken by the Owner regularly immediately after COD. In case of any loss/claim under the policy,  
EPC Contractor/O&M Operator shall immediately inform the same to the Owner. (iv) It is the responsibility of the EPC contractor /O&M Operator to operate and maintain the solar plant and all the associated equipments at his own cost for the quoted O&M period for which the Owner shall pay the agreed O&M charges only. (v) Any replacement /repair/modification of any item/equipment shall be carried out by the EPC contractor/O&M Operator at his own cost for the quoted O&M period, so as to have minimum down time. The Owner shall not be responsible for any break down / failure of any equipment to any reason there of except for Force Majeure / Fire & Allied Perils Events or extraneous reasons. (vi) The scope/type/form of insurance cover mentioned elsewhere in this tender, for the scope of the project for the quoted O&M period, would be superseded by this Clause
- At the end of the term of insurance undertaken by the Contractor, the Contractor shall provide all the necessary documents to the satisfaction of the Company in order to enable the Company to take up the insurance of the Plant.

### **Statutory Acts, Rules and Standards**

- The work shall be executed in conformity with the relevant standard of Bureau of Indian Specification (or equivalent International Standard), Electricity Rules, 2010 (as

amended up to date), Indian Electricity Act, BARC/DAE rules, Explosive Act 1948, Petroleum Act 1934, National Building Code and relevant Rules in vogue at the time of execution including operation and maintenance period.

### **Stoppage of Work**

- The Company shall not be responsible and not liable to pay any compensation due to stoppage of work as a reaction from local public due to any undue action on the part of the Contractor causing annoyance to local people.

### **Hindrance Register**

- The Contractor may also maintain a Hindrance Register where reasons for delay may be recorded from time to time and at the time of occurrence of the hindrance and get it duly certified by the Project Manager or his authorized representative.

### **Responsibility of the Contractor**

- The Contractor shall provide guarantee and be entirely responsible for the execution of the Contract in accordance with this Tender including but not limited to its specification, schedules, and annexure. The Contractor shall further provide guarantee and be responsible for the quality and workmanship of all materials and completed works, correct designs and drawings, correct delivery of material, erection, testing and commissioning including operation and maintenance.

### **Governing Language**

- The Contract shall be written in English Language. All correspondence and documents pertaining to the Contract, which are exchanged by the Company and Contractor, shall be written in English.

### **Order Amendments**

- No variation in or modification of the terms of the contract shall be made except by written amendments issued by the Company.

### **Assignment or Subletting of Contract**

- The Contractor shall not, without the prior consent in writing of the Company, assign or sublet or transfer its Contract in whole or in part, its obligations to perform under the Contract as substantial part thereof, other than raw materials, or for any part of the work of which makers are named in the Contract, provided that any such consent shall not relieve the Contractor from any obligation, duty or responsibility under the Contract.

### **Subcontracts**

- The Contractor shall notify the Company in writing of all subcontracts awarded under the Contract if not already specified in his Bid. Such notification in its original Bid or later shall not relieve the Contractor from any liability or obligation under the Contract.
- Subcontracting a work shall not, under any circumstances, relieve the Contractor from its obligations towards the Project and the Company.
- In case, the Contractor engages any Subcontractor to carry out a part of the work, the

Subcontractor should have requisite Government License for carrying out such part of the work.

### **Authorized TestCentres**

- The PV modules, inverters, transformers, panels, wires, etc. deployed in the power plants shall have valid test certificates for their qualification as per above specified IEC/ BIS Standards by one of the reputed labs of the respective equipment (preferably NABL Accredited Test Centres) in India. In case of equipment for which such Test facilities may not exist in India, test certificates from reputed ILAC Member Labs abroad will be acceptable.

### **Delivery of Equipment**

- The Contractor shall deliver the equipment of the plant and machineries in accordance with the terms of the Contract at the time(s) to the place(s) and in the manner specified in the Contract. The Contractor shall comply with instructions that may be given by the Company from time to time regarding the transit of the plant and material.
- Notification of delivery or dispatch in regard to each and every consignment shall be made to the Company immediately after dispatch or delivery from the manufacturing works. The Contractor shall supply to the consignee Invoice in triplicate and packing account of all stores delivered or dispatched by him.
- In case of any occurrence of loss or damage in transit, it shall be the liability of the Contractor to initiate or pursue the claim with the Insurance company. It should take immediate steps to repair the damaged apparatus or replacement there to.

### **Liabilities during Transit**

- The Contractor shall be responsible for loss, damages, or depreciation to goods or of plant, equipment, and machineries up to delivery at the Site.

### **Deduction from Contract Price**

- All costs, claims, damages or expenses, which the Company may have paid for which the Contractor is liable, will be deducted by the Company from deposited bank guarantees or from any money due or which become due to him under this Contract or any contract are being executed elsewhere with the Company.
- Any sum of money due and payable to the Contractor, as per the Contract Agreement, may be appropriated by the Company and set off against any claim of the Company, for the payment of a sum of money arising out of or under any other contract made by the Contractor with the Company. It is an agreed term of the Contract that the sum of money, with held or obtained under this clause by the Company, will be kept with hold or retained as such by the Company or till this claim arising out of in the same Contract is either mutually settled or determined by the arbitrator, or by competent court, as the case may be, and that the Contractor shall have no claim for interest or damages whatsoever on this account or any other account in respect of any sum of money withheld or retained under this clause and duly notified as such to the Contractor.

### **Terms of Payment**



- Supply, Work and 10 (Ten) years O&M (Solar Rooftop System): The VMC shall pay the Contractor in the following manner for supply of material and at the following time for achieving the respective milestones for the Supply. The Tender is a comprehensive EPC Contract of Supply, Works and O&M, however a single LoA shall be provided to the Successful Bidder. The payment terms for Supply, Works and O&M is given below.

Partial Payment as per Supply will be allowed, as approved by authority.

Note:

1. All works shall be considered for payment on the basis of payment milestones as per approved billing break up to be approved after award of contract.
  2. EPC Contract Price of Supply means the Supply part of the EPC Contract Price.
- Payment Terms for the Works shall be as per the following table. The VMC shall pay the Contractor in the following manner for all the erection, testing, commissioning.

#### **Terms of Payment for Supply Works**

50 % amount of capex on Supply of material on site after required testing
30 % amount of capex after completion of Erection Work
15 % amount of Capex after Commissioning of Plant and Submission of as built Drawing.
05 % amount of Capex after one month of generation of electrical energy.

#### **Terms of payment for Operation and Maintenance (O&M)**

Sr.	Milestone for Works	Amount
1.	On Successful Operation and Maintenance of the Solar PV Power Plant (including Solar Roof Top System) on yearly basis for each year till 10 years	As per yearly basis

#### **Payments Procedure**

- Subject to any deduction which the Company may be authorized to make under this Contract, and or to any additions or deductions provided for in this Contract, the Contractor shall be entitled to payment as follows:
  - a. All payments shall be made in Indian Rupees, unless otherwise specified in the LoA/

Contract Agreement. All payment shall be made on the basis of actual measurement for the quantified items as per schedule of works.

- b. The Contractor shall submit the bill for claim in three copies with all supporting documents as per the Contract condition to VMC. After due verification and recommendation, VMC shall process verified bills for release of payment. Payments shall be released in 30 (Thirty) days by A/c payee cheque / RTGS/ NEFT from date of submission of clear invoice.
- All taxes and deductions shall be applicable as per prevailing income tax and other statutory rules and provisions in force.
  - In case Contractor fails to submit the invoice with all the required documents to process payments, VMC reserves the right to hold the payment of the Contractor against such bills.

### **Warranty/Guarantee**

- The Plant shall perform as per the Guaranteed Performance indicated by the Bidding its Financial Proposal.
- PV modules used in grid connected solar power plants must be warranted for peak output power at Standard Testing Condition (STC), which shall not be less than 90% at the end of ten (10) years and not less than 80% at the end of twenty five (25) years. The first year degradation shall not be more 2.5% of the PV Module capacity and in subsequent years it shall not be more than 0.7% per annum.
- The mechanical structures, electrical works, all plant equipment and components and overall workmanship of the grid solar power plants shall be warranted for a 5 YEARS.
- The Contractor shall ensure that the goods supplied under the Contract are new, unused and of most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.
- The Warranty, Guarantee & Defect liability: All plant equipments and components and over all workman ship of the grid solar power plants shall be warranted for a minimum of 1 years except solar PV Modules which product warranty shall be for 10 years and performance warranty shall be for 25 years.
- The Contractor shall ensure that the goods supplied under the Contract are new, unused and of most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.
- During the period of Warranty/ Guarantee the Contractor shall remain liable to replace/repair any defective parts, that becomes defective in the Plant, of its own manufacture or that of its Subcontractors, under the conditions provided for by the Contract under and arising solely from faulty design, materials or workmanship, provided such defective parts are not repairable at Site. After replacement the defective parts shall be returned to the Contractors works at the expense of the Contractor unless otherwise arranged.
- At the end of Guarantee period, the Contractor's liability shall cease. In respect of goods not covered above, VMC shall be entitled to the benefit of such Guarantee given to the Contractor by the original Contractor or manufacturer of such goods.

- During the Operation and Maintenance and Guarantee period, the Contractor shall be responsible for any defects in the work due to faulty workmanship or due to use of sub-standard materials in the work. Any defect in the work during the guarantee period shall therefore, be rectified by the Contractor without any extra cost to VMC within areas on a timely basis as may be considered from the date of receipt of such intimation from VMC failing which VMC shall take up rectification work at the risk and cost of the Contractor.

(a) **Material Warranty:**

Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects (including Potential-induced degradation [PID] effect) and/or failures specified below for a period not less than twenty five (25) years from the date of sale to the VMC:

- Defects and/or failures due to manufacturing defects and/or failures due to materials, including PID defect
- Non-conformity to specifications due to faulty manufacturing and/or inspection processes.

If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at VMC's sole option.

(b) **Performance Warranty:**

The manufacturer should warrant the output of Solar Module(s). If Module(s) fail(s) to exhibit such power output in prescribed time span, the Contractor will either deliver additional PV Module(s) to replace the missing power output with no change in area of land used or repair or replace the PV Module(s) with no change in area of land used at VMC's sole option. Total land available from VMC is fixed and the bidder shall design the plant so that in this case he has enough space within this land to accommodate additional capacity.

## **Arbitration**

- All matters, questions, disputes, differences and / or claims arising out of and / or concerning, and/ or in connection with, and / or in connection of, and/or relating to this contract which may arise between the parties in connection with the Contract or any matter arising out of or in relation thereto shall be reported to Gujarat Public Work Contract Dispute Arbitration Tribunal and provision of Gujarat Public Work Contract Disputes Arbitration and Tribunal Act 1996 shall be applied as updated time to time.
- The Contractor shall ensure that the work under this Contract shall continue during arbitration proceedings and dispute and no payments due from or payment by the Company shall be withheld on account of such proceedings except to the extent which may be in dispute.
- The Arbitrator may, from time to time, with the consent of the parties to the contract enlarge the time for making the award. The venue of the arbitration shall be the place from which the acceptance of offer is issued or such other place as the Arbitrator, in his discretion, may determine.

## **Court of Competent Jurisdiction**

The Courts of Vadodara for VMC shall have exclusive jurisdiction in all matters arising under the Contract. Law and Procedure

- The law which is to apply to the Contract and under which the Contract is to be construed shall be Indian Law.
- The law governing the procedure and administration of any arbitration instituted under the clause for arbitration shall be the Indian law.

## **Construction of Contract**

- The Contract shall in all respect be construed and operated, as a Contract as defined in the Indian Contracts Act, 1872, and all the payments there under shall be made in Indian Rupees (INR) unless otherwise specified.

## **Notices**

- For all purpose of the Contract, including arbitration there under, the address of the Contractor mentioned in the Bid shall be the address to which all communications addressed to the Contractor shall be sent, unless the Contractor has notified a change by a separate letter containing no other communication and sent by registered post with acknowledgement due to VMC. The Contractor shall be solely responsible for the consequence of an omission to notify change of address in the manner afore said.
- Any communication or notice on behalf of the Company in relation to the Contract Agreement may be issued to the Contractor by the Company and all such communication and notice may be served on the Contractor either by registered post or under certificate of posting or by ordinary post or by hand delivery at the option of the officer.
- Instructions or notices to the Contractor and notices from the Contractor to VMC recorded in a minute signed by the authorized representatives of both VMC and the Contractor. Such notice or instruction shall be valid notice of instruction for the purpose of the Contract.

## **Final Bill**

- The Final EPC Bill relating to the Contract shall be prepared only after the Performance Guaranteed Test of the plant has been observed as under. Procedure for Performance Testing and it will include the adjustments of all claims against the Contractor by the Company and awarded in its favour by the arbitrator up to the date of preparation of the final bill.

## **Degradation of Solar Modules**

- The Contractor should warrant for the output of each Solar Module(s) for at least 90% of its actual rated capacity at Standard Testing Condition after initial 10 years and 80% of its rated capacity after 25 years upon commissioning of the Plant.
- The derating of module should not be more than 0.7% in any year except for the first year of operation, which should be limited to 2.5%.
- If, Module(s) fail(s) to exhibit such power output, the Contractor will either:

- a. Deliver additional PVModule(s) to replace the loss of power output with no change in area of land used;

**<or>**

- b. Repair or replace the existing PVModule(s) with no change in area of land used;
- The Company will specifically do the audit of solar PV module by third-party at any point of the operation period and incase the Contractor fails to demonstrate the value as per the maximum deration,

### **RiskPurchase**

- If the Contractor fails, on receipt of the LoA, to take up the work within a reasonable period or leave the work Site after partial execution of the work, VMC shall have the liberty to get the work done through other agency at the Contractor's own risk and additional cost if any. If the situation, so warrants, to compel VMC to cancel the LoA placed on the Contractor, it shall be liable to compensate the loss or damage, which VMC may sustain due to reasons of failure on Contractor's part to execute the work in time.

### **Confidential Information**

- VMC and the Contractor shall keep confidential and shall not, without the written consent of the other Party hereto, divulgeto any third party any documents, data or other information furnished directly or indirectly by the other Party here to in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Not with standing the above, the Contractor may furnish to its Sub contractor(s) such documents, data and other information it receives from VMC to the extent required for the Sub contractor(s) to perform its work under the Contract, inwhich event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor.
- Not with standing the generality of the fore going maps, plans, drawings, specifications, schemes and the subject matter contained there in and all other information given to the Contractor, by the Company in connection with the performance of the Contract shall be held confidential by the Contractor and shall remain the property of the Company and shall not be used or disclosed to third parties by the Contractor for any purpose other than for which they have been supplied or prepared. The Contractor may disclose to third parties, upon execution of secrecy agreements satisfactory to the Company, such part of the drawings, specifications or information if such dis closure is necessary for the performance of the Contract under this
- Maps, layouts and photographs of the unit/integrated plant including its surrounding region's showing vital installation for national security shall not be published or disclosed to the third parties or taken out of the country without prior written approval of the Company and upon execution of secrecy agreements satisfactory to the Company withsuch third parties prior to disclosure.
- Title to secret processes, if any, developed by the Contractor on an exclusive basis and employed in the design of the unit shall remain with the Contractor. The Company

shall hold in confidence such process and shall not disclose such processes to the third parties without prior approval of the Contractor and execution by such third parties of secrecy agreements satisfactory to the Contractor prior to disclosure.

- Technical specifications, drawings, flowsheets, norms, calculations, diagrams, interpretations of the test results, schematics, layouts and such other information which the Contractor has supplied to the Company under the Contract shall be passed on to the Company. The Company shall have the right to use these for construction erection, start-up, commissioning, operation, maintenance, modifications and/ or expansion of the unit including for the manufacture of spare parts.
- The obligation of a party under as per tender, however, shall not apply to that information which:
  - a. Now or here after enters the public domain through no fault of that Party,
  - b. Can be proven to have been possessed by that Party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other Party here to, or
  - c. Otherwise lawfully becomes available to that Party from a third party that has no obligation of Confidentiality.
- The above provisions of this tender shall not in any way modify any undertaking of Confidentiality given by either of the Parties hereto prior to the date of the Contract in respect of the Facilities or any part thereof.
- The provisions of this as per tender shall survive Termination, for what ever reason, of the Contract.

### **Limitation of Liability (LLP)**

- The total liability of the Contractor under or in connection with this Tender and the consequent Contract shall not exceed the full EPC Contract Price inclusive of taxes and duties.
- This sub-Clause shall not limit the liability in case of fraud, deliberate default / negligence, reckless misconduct or illegal or unlawful acts by the Contractor.

**Seal & Signature of Tenderer**

# **SPECIAL CONDITION OF TENDER**

## **Definition**

- The General Terms and Conditions as well as the Special Terms and Conditions of the Tender are complementary to each other, and wherever there is a conflict, the Special Terms and Conditions shall prevail.

## **Objective of the Project**

- The main objective of this project is "TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite).

## **Compliance with GEDA/ DISCOM/ CEIG/ Gujarat State Designated Agency**

### **Guidelines**

- The Bidders and Contractor shall make themselves fully aware of and comply with the norms and guidelines provided by GEDA/ DISCOM/ CEIG/ Gujarat State Designated Agency if any, towards the Project.
- The Contractor shall ensure that the Project shall comply with all the norms and guidelines of GEDA/ DISCOM /CEIG /Gujarat State Designated Agency if any, and subsequent clarifications or amendments issued from time to time. The Contractor is required to refer the compliance documents of GEDA/ DISCOM / CEIG / Gujarat State Designated Agency if any, for necessary compliances of GEDA/ DISCOM/ CEIG / Gujarat State Designated Agency requirements.
- In case of any conflict between the compliance of GEDA/DISCOM/CEIG/Gujarat State Designated Agency and this Tender or any aspect of the Project, the Contractor shall immediately notify VMC for clarity.

## **Scope of Service**

- The item of work to be performed on all equipment and accessories shall include but not limited to the following:
  - a. Transportation, unloading, receiving and storage at site.
  - b. Arranging to repair and/or re-order all damaged or short-supply items.
  - c. Final check-up of equipment and commissioning and putting the system into successful operation, feeding power to the local internal grid.

## **Training of VMC's Personnel**

- The Bidder shall provide training on Plant operations and maintenance to three(3) teams Of 5-10 personnel each (Engineers and Technician/Operators) of VMC as and when requested by VMC.

## **Mode of Execution**

- The entire work shall be executed on turnkey basis. Any minor item(s) not included in the schedule but required for completion of the work shall have to be carried out/supplied without any extra cost. Such works, not listed in the schedule of works but elaborately described to perform or to facilitate particular operation(s) required for completion of the project shall be deemed to have been included in the scope of this work and the Contractor shall supply, install the same without any extra cost.

## **Programme of Work**

- The Contractor shall submit the programme of work within 3 days from the date of receipt of Letter of Award. The programme shall include a Bar Chart indicating there in the starting position and completion date of each of the major items of work.

## **Starting of Work**

- The issuance date of LoA should be termed as starting date of work.

## **Completion Schedule**

- The time of completion and Commissioning of the Plant is 60 Days from the date of issue of Letter of Award. The O&M Contract Period for Ten(10 years).
- The Contractor shall inform VMC at least seven (7) days advanced final written notice, of the date on which it intends to commissioning of any unit.
- The Contractor shall prepare the completion schedule accordingly and in conformity with provisions of technical specifications and carry out the work as per this schedule subject to "ForceMajeure" conditions. The Contractor shall mobilize resources keeping in view, the above scheduled completion period.
- The Contractor shall provide the power evacuation schedule as and when required or asked by any Central or State Government agency(s).

## **Site Inspection & Basis of Bid**

- The volume and quantity of work indicated in schedule of works may vary. The Contractor or should visit the Site before quoting rate for civil works. After taking in to consideration all aspects of the site, condition of soil etc., the Contractor or should quote for civil works. No extra claim will be entertained at post bidding stage. The foundation design of module structure and the building shall have to be approved by VMC. In case of any defects arising in the building during guarantee period, the Contractor shall have to rectify the same at its own cost.

## **Price Escalation**

- The rate(s) quoted against the work shall remain firm during the entire Contract period.

## **Taxes and Duties**

- The price quoted shall be inclusive of all applicable taxes, duties, levies as applicable (as per the format of the Financial Proposal), which shall be paid on production of documentary evidences for the same.
- Bidders shall quote the rates as well as taxes and duties based on the concessional exemption in the same that can be availed by the Bidder.
- Statutory variations in the tax shall be permitted as under:



**(A) Statutory variations during original contractual completion period:**

- (i) If any increase takes place in taxes and duties due to statutory variation, then VMC shall admit the same on production of documentary evidences.
- (ii) If any decrease takes place in taxes and duties due to statutory variation, the same shall be passed on to VMC or VMC shall admit the decreased rate of taxes and duties while making the payment.

**(B) Statutory variations beyond original contractual completion period:**

- (i) If reasons for extension of contractual completion period is attributable solely to VMC, the provisions of (A)(i) above shall apply.
- (ii) If reasons for extension of contractual completion period is attributable to Bidder, then:
  - (a) If any increase takes place in GST due to statutory variation, then VMC shall not admit the same; however VMC shall admit the GST at the rate prevailing during payment of last invoice raised during original contract completion period.
  - (b) If any decrease takes place in GST due to statutory variation, the same shall be passed on to VMC or VMC shall admit the decreased rate of GST while making the payment.
- Variation on account of exchange rate will not be payable. No statutory variation shall be payable by VMC on the input items. i.e. raw materials etc.

**Procurement of Materials**

- The Contractor shall procure all necessary material required for the project work and arrange to store them properly. Test certificate in accordance with the specifications are to be furnished by the Contractor to VMC for approval in respect of the materials procured by the Contractor.

**Samples**

- Apart from adhering to special provision made in the specification regarding submission of samples, the Contractor shall within ten (10) days of its receipt of Letter of Award, provide to VMC samples along with detailed literature of all materials it proposes to use irrespective of the fact that specific make/ material might have been stipulated. If certain items proposed to be used are of such nature that samples cannot be presented or prepared at Site, detailed literature/ test certificate of the same shall be provided instead. VMC shall check the samples and give his comments and/or approval to the same.

**Notice of Operation**

- The Contractor shall not carry out important operation without the consent in writing of VMC or his representative. For carrying out such important activity, the Contractor shall intimate to VMC at least Forty-eight (48) hours before starting of the job.

**Rejection of Materials**

- VMC's decision in regard to the quality of the material and workmanship will be final. The Contractor at its own cost and risk without any compensation shall immediately remove

any material rejected by the Project Manager or Engineer-in-Charge from the Site of work.

## **Power and Water Supply during Construction**

- The Contractor shall arrange for the temporary Power Supply at the site for construction purpose at its own cost.
- Cost of water shall be as per prevailing rate and to be borne by the Contractor during execution and O&M period.
- Arrangement of water for module cleaning should be solely in the scope of the EPC Contractor on a chargeable basis. EPC Contractor shall ensure that a water meter and pump should be connected for timely cleaning of the modules and the same shall be procured by the EPC Contractor itself. Contractor has to plan and install the effective module cleaning system as per the prevailing condition at Site. The system may include the storage water tanks, pumps, laying of UPVC pipes, flexible pipes, taps/ valves, pressure gauges etc. as per the planning by the Contractor. Contractor has to submit the drawing/ plan for the proposed module cleaning system. The water supply line shall be of min. 2" UPVC pipe. All the pipes thus laid must be buried in ground at least 150 mm below FGL. Road/ Pathway/ RCC crossings and drain crossings, the pipes must be passed through GI/ Hume pipes as applicable.
- Cost of electricity required during construction shall be payable by the Contractor. For construction, temporary connection from Distribution Company shall be arranged by the Contractor as per applicable tariff.
- Electricity required for running the installed pump for cleaning of modules may be taken from VMC on the consent/approval of VMC's concerned authority against which the EPC Contractor has to pay charges to VMC as per rates paid to the DISCOM by VMC. Installation of meters for logging of the electricity consumed by the pump(s) for module cleaning shall be in the scope of EPC Contractor.
- VMC shall not provide facility for storage of material, and accommodation for labour at site. The Contractor shall make his own arrangement for the same. The Contractor shall make container type solution for storage of material.

## **Labour Engagement**

- The Contractor shall be responsible to provide all wages and allied benefits to its labour engaged for execution of the project work and also to carry out Operation and Maintenance service. The Contractor shall remain liable to the authorities concerned for compliance of the respective existing rules and regulations of the government for this purpose and shall remain liable for any contravention thereof.
- Strict adherence of various applicable labour laws like the Factories Act, Minimum Wages Act, ESI Act, Payment of Wages Act, the Workman's Compensation Act, EPF Act, Contractor labour (Regulation & Abolition) Act, 1970 and all other statutory requirements as amended from time to time to the entire satisfaction of Central/ State Govt. Authorities, shall be the responsibility of the Contractor and he shall have to make good loss, if any, suffered by VMC on account of default in this regard by the Contractor.
- The contractor is encouraged to use local manpower as per the local statutory (labour) requirement, if any.
- The successful Bidder shall obtain license under Contract Labour (Regulation & Abolition) Act 1970, read with rules framed there under and furnish the same to the Company

within 15 days of the issue of Detailed order of Contract failing which the detailed order of contract shall be cancelled/ terminated without any further notice and its EMD and/ or performance guarantee shall be forfeited.

- 65% of the jobs that will be created due to the project in the supervisory and managerial cadres and 80% of the jobs that will be created in other cadres due to the project shall be filled in by employing the local persons. The expression "local person" shall mean a person domiciled in Gujarat state for a minimum period of 15 years prior to applying for employment to the Contractor.

### **HandingOver-TakingOver**

(c) TENDER BID FOR DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite) upon successful completion of all tasks to be performed at Site (s) on equipment supplied, installed, erected, Commissioned and 10 Years O&M by the Contractor in accordance with provision of this Tender. During handing over complete Project work including 10 Years O&M, the Contractor shall submit the following for considering final payment of O&M:

- a. As-Built Drawings in soft (PDF & AUTOCAD) as well as Hard Copy;
  - b. Detailed Engineering Document with detailed specification, schematic drawing, circuit drawing and test results, manuals for all deliverable items, Operation, Maintenance & Safety Instruction Manual and other information about the project;
  - c. Bill of material; and
  - d. Inventory of spares at project Site.
  - e. Copies of all warranties/guarantees.
- Prior to the handing over, VMC shall conduct a plant audit by self or the third party as per VMC's discretion, and any defects identified during such audits or inspection shall be rectified by the Contractor at its own cost prior to the completion of the O&M period.

### **Termination on the death of Contractor**

- Without prejudice to any of the rights or remedies under this contract, if the Contractor dies, the Engineer-in-Charge on behalf of VMC shall have the option of terminating the Contract without compensation to the contractor.

### **Retired Government servants taking to Contract**

- No engineer of gazette rank or other gazette officer employed in engineering or administrative duties in the Engineering Department of the Company is allowed to work as contractor for a period of two years of his retirement from Company's service without the previous permission of the Company. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be a person who had not obtained the permission of the Company as afore said before submission of the tender or engagement in the contractor's service as the case may be.

## **EPF**

- The contractor will deduct and deposit EPF of his labour staff / worker as applicable from time to time in his own EPF A/c code and then produce a photocopy of documentary evidence of EPF Challan with each R.A. Bill for the concerned period.

## **Miscellaneous**

- The project manager appointed by EPC contractor shall not be replaced without the prior written approval of VMC.
- Any project manager or member of the Contractor at Site shall be replaced within a period of forty eight (48) hours of intimation by VMC without assigning any reason thereof.
- The Contractor shall take care of all statutory, local clearance, approvals, etc.
- All warranties on the equipment shall be in the name of VMC.
- The Contractor shall be responsible for claiming and retaining any subsidy and shall quote only final price and responsibility of Project registration/ applications etc. Shall lie with the Bidder only. In no case, VMC is responsible to provide any additional amount other than the EPC Contract Price & O&M Contract Price.
- The Contractor shall provide arrangement for water drainage, which shall be appropriately arranged for dispersion/ evacuation as per the local statutory norms without causing any local inconvenience or hindrance.
- The design philosophy and related specifications mentioned in this Tender are to be treated as baseline specifications. The Contractor may further improve the design of the Plant through minor modifications and execute the same contingent on VMC's approval of the new design or specification.
- Based on reviewing the Project, if the progress is below expectation as judged based on VMC's discretion, then VMC shall reduce the Scope of the Contractor in part or full and assign the same to other contractor(s) at the risk and cost of the existing Contractor.
- The Contractor shall continue to provide all the monitoring services, licenses, software, access to all information (real-time or stored) that were been used during the O&M Contract period by the Contractor to VMC at the time of hand over at no extra cost to VMC for the rest of the life of the Plant.
- Provision for installing any additional monitoring equipment to facilitate **on-line transfer of data** shall be provided by the Contractor.

**Seal & Signature of Tenderer**

## NO BLACKLISTING/ DEBARMENT

(To be submitted on the Letter head of the Bidder)

Date: DD / MM / YYYY

To,  
Executive Engineer,  
Streetlight Department,  
Room No. 202, Khanderao Market Building  
Vadodara, Gujarat- 390001

Subject: Declaration for not being debarred/ black-listed by Central Government/  
any State Government/ Public Sector Undertaking in India or similar agencies  
globally as on the last date of submission of the bid.

Tender ID No:

Dear Sir/Madam,

I, authorized representative of, hereby Leadenly confirm that is not  
debarred/ black-listed by Central Government/ any State Government/Public  
Sector Under taking in India or similar agencies globally forum satisfactory past  
performance, corrupt, fraud any other unethical business practices or for any other  
reason last date of submission of the Bid. In the event of any deviation from the  
factual information / declaration, reserves the right to reject the Bid or terminate  
the Contract without any compensation to the successful Bidder.

Thanking you,

Yours faithfully.

Signature of Authorized Signatory (with official seal)

Date:

Name: Designation: Address: Telephone & Fax:

E-mail address: (Name) (Designation) (Address)

In the presence of:

1.

2.

## 1. 50 Kwp Bill of Material (For Reference Only)

Sr. No.	Description	Make & Model Offered	Total Qty. as per site requirements
(1)	Solar module (Make, Type, Wattage)		
(2)	HDGI Module mounting structure(s)		
(3)	Inverter (Make, Model, Capacity etc.)		
(4)	Sensor Box with Temperature sensors and pyranometer		
(5)	Web Box with RS 485 Communication Cable or as Required		
(6)	Array Junction box (AJB)		
(7)	AC Distribution Board as required for the SPV based Power Plant with sufficient safety factor with MFM and with Protective switchgears		
(8)	ACCD / LTPDB if required		
(9)	....sq mm UV Protected DC Solar Cable (Array to AJB - AJB to PCU)		
(10)	....sq mm PVC insulated Cu cable (PCU to ACDB input)		
(11)	XLPE FRLS Armoured Aluminum Cable of suitable size (ACDB to ACCB / LTPDB input / NVR / Existing LT injection point)		
(12)	Earthing wire and LA as per Requirement		
(13)	Multi-contact Male Cable Coupler		
(14)	Multi-contact Female Cable Coupler		
(15)	Maintenance free Earthing kit with Earth pits		
(16)	GI EarthingStrip with necessary accessories & GI Cable Tray		
(17)	Installation kit		
(18)	Safety equipments/ accessories etc.		
(19)	No Voltage Relay		
(20)	Solar Meter (Uni-directional) with suitable communication modem per LT Injection point		
(21)	Bi-directional Solar Meter (HT) with suitable communication modem		
(22)	Solar Logger to fetch data from Inverters (For centralized Energy monitoring		

	system) with CAD-6 of required length		
(23)	Water Supply Pipeline and Pumps for Cleaning of Modules		
(24)	Any Other Component as required.		

- Bidder has to estimate the actual cable lengths required during the compulsory site visit.

Seal and Signature of the Bidder

## Annuxure-1:Format for Covering Letter

To,  
Executive Engineer,  
Streetlight Department,  
Vadodara Municipal Corporation,  
Vadodara.

### **Sub: Submission of the TENDER Document No. VMC/ / /**

Dear Sir,

We, the undersigned, have considered and complied with the "Instructions to Bidders" and have accepted the terms stipulated in the TENDER documents. The scope of work to be offered by the Bidder shall include but not be limited to Design, Engineering, Supply & Procurement, Erection, Testing, Commissioning And Comprehensive Operation & Maintenance for a period of Ten (10) years on turnkey basis; in the State of Gujarat. The Successful Bidder shall be required to ensure the continuous running of plant without any interruption during entire O&M period. All the above shall be as per TENDER Document No.VMC/ / /.

Also we have familiarized our selves with the land surface and sub surface, metrological, climatological and environmental conditions which may exist in the installations area. In full cognizance and compliance with these afore said conditions and the regulations of local government authorities, we the undersigned do hereby offer for the Engineering, Supply & Procurement, Erection, Testing, Commissioning And Comprehensive Operation & Maintenance for a period of Ten(10) years on a turnkey basis; in the State of Gujarat for which we have Bid. The work covered under the Bid shall be completed to the entire satisfaction of your selves or your representative in conformity with the TENDER documents at the prices accompanying this Bid.

It is a term of our Bid that the Project shall be handed over installed, interconnected, tested, commissioned and modified and shall achieve Commissioning not later than 240 days from the date of LOA. This shall be the essence of the Contract between us.

We further agree and stipulate as follows:

1. Until the final Contract Documents are prepared and executed the TENDER documents with any modifications, additions, deletions agreed with the Company(s) and your written acceptance thereof, shall constitute a binding Contract between us, upon terms contained in afore said documents and the Financial Proposal accompanying the Bid.
2. That the Company will not supply any material. In all respects we shall be fully self-sufficient in the performance of the work.



3. I/We understand that you are not bound to accept the lowest of the Bid you may receive.
4. I/ We shall make available to the Company any additional information it may find necessary or require to supplement or authenticate the qualification statement.
5. I/ We acknowledge the right of the Company to reject our Bid without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
6. I/ We understand that you may cancel the bidding process at any time and that you are neither bound to accept any Application that you may receive nor to invite the Applicants to Bid for the Project, without incurring any liability to the Applicants.
7. I/ We further certify that in regard to matters relating to security and integrity of the country, we or any of our Associates have not been charge-sheeted by any agency of the Government or convicted by a Court of Law.
8. I/ We further certify that no investigation by a regulatory authority is pending either against us or against our Associates or against our CEO or any of our directors/managers/employees.
9. I/ We undertake that in case due to any change in facts or circumstances during the bidding process, we are attracted by the provisions of disqualification in terms of the provisions of this TENDER; we shall intimate the Company of the same immediately.
10. We understand that the selected Bidder shall either be an existing Company incorporated under the Indian Companies Act, 1956 or Companies Act 2013.
11. I/ We hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the Company in connection with the selection of Applicants, selection of the Bidder, or in connection with the selection/ bidding process itself, in respect of the above mentioned Project and the terms and implementation thereof.
12. I/ We agree and undertake to abide by all the terms and conditions of the TENDER document.
13. We agree to keep the bidding valid for acceptance for a period of 180 (One Hundred Eighty) days from the date of opening of the Technical Bid (hereinafter referred to as validity period) and the Bid shall not be withdrawn on or after the opening of bidding till the expiration of the validity period or any extension thereof.
14. We also undertake not to vary/modify the Bid during the validity period or any extension thereof.
15. We represent that we have fully satisfied ourselves as to the nature and location of the Project having in mind the general and local conditions and other factors incidental to the performance of the works and the costs thereof.
16. We further represent that from our own investigation of the Site of the Project we have fully satisfied ourselves as to the character, quality and quantity of surface and other conditions to be encountered in the performance of the works and we understand and represent that any failure to acquaint ourselves in respect of these matters and the other factors and conditions as set forth shall not relieve us from any responsibility for estimating properly the difficulty and cost of successfully performing the works.

17. We also acknowledge and accept that you shall not pay for any discontinuance or low performance rate resulting from malfunction of/ or in adequacy of our equipment, instruments or personnel.
18. We agree to return to you all reports and technical data provided for our use in preparing this Bid and in the subsequent conduct of the works. We undertake that we will not use the same for any other work/purpose.
19. We further represent that we have familiarized ourselves with all the terms and provisions of the various parts of the bidding documents and that in making our Bid, we do not rely upon any representation made by any agent or employee of yourselves in respect of the terms of the bidding documents or the nature of the performance of the works.
20. We submit this Bid with the full understanding that our Bid fully complies with all the terms and conditions of the TENDER documents including Bid evaluation criteria and that no deviation/exception to the TENDER documents have been taken by us. We also agree that in case we have taken any exceptions/ deviations to the TENDER documents, the Company will be free to reject our offer on account of such exceptions/deviations.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2026 Signature: \_\_\_\_\_

In the capacity of: \_\_\_\_\_

Duly authorized to sign Tenders for and on behalf of (Name & Address)

\_\_\_\_\_  
Witness

## Annexure-2: Details of Bidder

1. (a) Name:
- (b) Country of incorporation:
- (c) Address of the corporate head quarters and its branch office(s), if any, in India:
- (d) Date of incorporation and/ or commencement of business:
2. Brief description of company including details of its mainlines of business and proposed role and responsibilities in this Project:
3. Details of individual(s) who will serve as the point of contact/ communication for company:
  - (a) Name:
  - (b) Designation:
  - (c) Company:
  - (d) Address:
  - (e) Telephone Number:
  - (f) E-Mail Address:
  - (g) Fax Number:
4. Particulars of the Authorised Signatory of the Bidder:
  - (a) Name:
  - (b) Designation:
  - (c) Address:
  - (d) Phone Number:
  - (e) E-Mail Address:
  - (f) Fax Number:
5. MoU with Supplier company
  - (a) The information above (1-4) should be provided for all the Members of the MoU.

### Annexure-3:Format of Details of Similar Technical Experience

#### INSTRUCTIONS:

- A. The Bidder shall indicate similar EPC experience of grid-connected solar photovoltaic project shere in.
- B. The Bidder shall duly attach the Letter of Award (LOA) from the Client, Commissioning Certificate, and Certificate of Satisfactory Completion of Work from the Client.
- C. Projects without sufficient documentary evidence of execution, commissioning and completion as per the discretion of VMC shall not be considered towards technical evaluation of the Bidder.
- D. The Bidder may indicate more than Ten (10) projects.

Sr.	Name of Client (with name and contact information of Contact Person)	PV Project AC/DC Capacity (inKW)	Work OrderNo. & Date	Commissioning Certificate (Date)
1.				
2.				
3.				
4.				
5.				

Annexure-4: Format of Disclosure of PV Technology (Tentative)

1) 50 kw Rooftop Solar PV System.

<b>PVMODULE</b>		
Type	:	
Manufacturer	:	
Model Number	:	
Module Capacity	:	..... W
No. of Cells per Module	:	
No. of Modules	:	
<b>PV INVERTER</b>		
Type	:	
Manufacturer	:	

## Annexure-5: Format for Project Execution Plan

### Division of Scope of Work

Discipline/ Equipment	Basic Engineering	Design/ Detailed Engineering	Procurement	Supply	Project Management	Construction/ Fabrication/ Installation	Commissioning

#### NOTES:

- Bidder shall clearly indicate the agency which will carry out each activity and the location of activity.
- In case any activity is proposed with back-up consultant, Bidder shall clearly indicate role of back-up consultant
- Bidder to identify major equipment/ items and discipline

### ii. DETAILED PROJECT SCHEDULE

Sr.	Activity	StartDate	EndDate
1.	Issue of LoA	Zero Date	
2.			
3.			

#### NOTES:

The Bidder shall ensure that the entire work is completed within 240 days of issue of LoA.

- All Start Dates and End Dates to be indicated with respect to the Zero Date.
- The Bidder may use as many lines as required to satisfactorily provide the detailed project schedule.

**SIGNATURE OF BIDDER** \_\_\_\_\_

**DESIGNATION** \_\_\_\_\_

**SEAL** \_\_\_\_\_

**DATE** \_\_\_\_\_

## **Annexure-6: Procedure for Performance Testing**

### **PartA: SolarPV power plant Net power generation**

1. The Contractor shall confirm the 'Net Electrical Energy Generation Guarantee (as per Annexure") for annual basis.
2. The Contractor shall demonstrate "Actual Delivered Energy" at metering point for Every year from the date of starting of O&M Period.

### **Operational Acceptance Test Procedure**

#### **Performance Ratio (PR)-Test Procedure**

1. Three(3) months duration of Performance Ratio as determined through the Instantaneous PR Test Procedure specified here should not be less than **75%**.
2. The Instantaneous Performance Ratio Test to prove the guaranteed performance parameters of the power plant shall be conducted at site by the Contractor in presence of the Owner/Owner's Engineer/Consultant. The Contractor's Engineer shall make the plant ready to conduct such tests. The Instantaneous PR Test shall be commenced for aperiod of three (3) months after successful Commissioning and, there will be continuous monitoring of the performance for 90days.The setests shall be binding on both the parties to the Contract to determine compliance of the equipment with the guaranteed performance parameters. This monitoring will be performed on the site under the supervision of the Owner/Owner's engineer/Consultant.
3. The test will consist of guaranteeing the correct operation of the plant over 90days, by the way of the efficiency rate(Instantaneous performance ratio) based on the reading of the energy produced and delivered to the grid and the incident solar radiation. During this period of 90days, any 6(six) instances (i.e any 2 instances for each 30 days)shall be taken to calculate the instantaneous Performance Ratio. If the Instantaneous PR of these six instancesisabove75%,then PR Test shall be considered successful.
4. The successful bidder shall be required to meet minimum guaranteed generation with Instantaneous Performance Ratio (PR) at the time of commissioning as per the GTI levels of the location.

5. The Instantaneous Performance Ratio (IPR) of the SPV System shall be calculated as follows

$$PR_{tc} \text{ (Instantaneous)} = \{P_{ac} / (\text{Instantaneous Irradiance} * \text{Module Area} * \text{Total Nos of Module}) * (\text{Module Efficiency}) / 100\} * 100$$

Where,

- Instantaneous AC Power in Watt at Inverter ( $P_{ac}$ )
- Instantaneous Irradiance (Watt/m<sup>2</sup>)
- Module Area (m<sup>2</sup>)
- Total number of modules
- Module Efficiency in %



## **Annexure 7: Undertaking for Acceptance of 10 Years of NEEGG**

(OnaRs 300 non-judicial stamp paper with Notarized)

TO,  
Municipal Commissioner  
Vadodara Municipal Corporation  
Khanderao Market  
Vadodara ,Gujarat,India

**Sub:** Undertaking for Acceptance of 10Years minimum NEEGG.

**Ref:** Request for Proposal Bid for DESIGN, ENGINEERING, SUPPLY AND PROCUREMENT,  
ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION AND  
MAINTENANCE FOR A PERIOD OF TEN YEARS FOR SOLAR ROOF TOP POWER PLANT  
AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG. (Re-Invite)

DearSir,

I/We, M/s..... hereby give under taking that I/We should strictly comply to provide minimum NEEGG as per below Tables : Annexure If any Shortfall is there in meeting the minimum NEEGG each year, VMC shall impose penalty as per tender terms.

**Annexure-9: Details of Qualified Technical Staff**

<b><i>Sr. No.</i></b>	<b>Name</b>	<b>Relevant Qualification</b>	<b>Additional Certifications</b>	<b>Total Years of Relevant Experience</b>	<b>Remarks</b>
1.					
2.					
3.					
4.					
5.					
6.					

***Note:***

Kindly submit copies of resumes and appropriate certifications with this sheet.

Additional sheets may be used to provide accurate information.

Annexure-10:No Deviation Certificate

Date:

To

**Sub:No Deviation Certificate regarding Bid for DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite) in the State of Gujarat on EPC basis.**

Dear Sir,

We,\_\_\_\_\_ (Bidder's name), confirm our acceptance to all terms and conditions mentioned in the TENDER Document, and all subsequent clarifications, in totality and with drawall deviations raised by us, if any.

---

SEAL AND SIGNATURE OF BIDDER

Date:\_\_\_\_\_

Annexure-11: Declaration on Bidder's relation to Directors

Date:

To,

**Sub: Declaration of relationship with Directors/any other employee/associates.**

Dear Sir,

This has reference to our proposed Contract regarding DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite) in the State of Gujarat to be entered into Agreement with VADODARAMUNICIPAL CORPORATION(VMC), Vadodara.

For the purpose of Section 297/299 of the Companies Act, 1956 we certify that to the best of my/our knowledge;

- i) I am not a relative of any Director of VMC;
- ii) We are not a firm in which a Director of VMC or its relative is a partner;
- iii) I am not a partner in a firm in which a Director of VMC or its relative is a partner;
- iv) We are not a private company in which a Director of VMC is a member or director;
- v) We are not a company in which Directors of VMC hold more than 2% of the paid-up share capital of our company or vice-versa.

---

Authorised Signatory of the Contracting Party

Place:

Date:

**Annexure-12:Format of Power of Attorney as Authorized Signatory**

(On a non-judicial stamp paper of appropriate value)

Know all men by these presents, We, ..... (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms(Name), son/daughter/wife of and Presently residing at .....,who is presently employed with us and holding the position of ....., as our true and lawful attorney (herein after referred to as the“Attorney”)to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Bid for DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite) GUJARAT in the state of Gujarat, pursuant to the TENDER document no. issued by VADODARA MUNICIPAL CORPORATION (“VMC”), including but not limited to signing and submission of all applications, Bids and other documents and writings, participate in Bidders’ and other conferences and providing information/responses to the Company, representing us in all matters before the Company, signing and execution of all contracts including the Contract Agreement and undertakings consequent to acceptance of our Bid, and generally dealing with the Company in all matters in connection with or relating to or arising out of our Bid for the said Project and/or upon award thereof to us and/or till the entering into of the Contract Agreement with VMC.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHERE OF WE,.....,THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS .....DAY OF .....,20.....

For.....

(Signature, name, designation and address)Witnesses:

- 1.
- 2.

Accepted          Notarized

(Signature,name, designation and address of the Attorney)

**Notes:**

1. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
2. Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
3. For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Apostille certificate.
4. This format for Power of Attorney is for reference and in case a Bidder has a different format approved by their management then the same can be submitted.

### Annexure-13:Format of Summary of Audited Financial Statements

To

#### **Sub: Summary of Financial Statement**

**Ref:** Request for Proposal Bid For DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)

Dear Sir,

This is to certify that [Insert name of Bidder] (the “Bidder”) having its Registered Office at ..... [Insert Registered Address of the Bidder] with PAN No..... [Insert PAN No. of the Bidder] and GST No. ....is in the business of [Insert briefly the nature of the business], has recorded the following turnovers and net worth:

Financial Year	Turnover (inINR)	NetWorth( inINR)	For Official Use Only
			Audited Statement Attached?
2023-24			Yes/No
2024-25			Yes/No
2025-26			Yes/No

All figures indicated herein are arrived from the Audit Reports of the Bidder duly submitted to the Income Tax Department.

Sincerely yours,

.....[Official seal of the Chartered Accountant]

Date: [Insert Date] Place: [Insert Place]

[Insert Name of the Chartered Accountant]

[Insert address and contact information of the Chartered Accountant]

All figures indicated herein are calculated as per the guidelines mentioned in the Tender.

#### **NOTES:**

- If the Bidder is seeking financial qualification based on the financial standing of the Parent Company, then a similar certificate summarizing the financial statement of the Parent Company shall be attached by the Bidder as apart of the Bid.
- All audited statements to be attached by the Bidder as apart of the Bid.

## Annexure-15 :Form at of Financial Proposal

To

Sub:Financial Proposal for Bid for DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)

**DearSir,**

I,

---

Present the Financial Proposal for the“**Bid for DESIGN, ENGINEERING, SUPPLY & PROCUREMENT, ERECTION, TESTING, COMMISSIONING AND COMPREHENSIVE OPERATION & MAINTENANCE FOR A PERIOD OF TEN (10) YEARS FOR SOLAR ROOF TOP POWER PLANT AT CITY CONTROL & COMMAND CENTRE BADAMDIBAUG (Re-Invite)**” on EPC basis through the Tender Document No.“VMC//  
/  
/”confirmingthat:

- i. I agree to all the terms and conditions set for this Tender Document. If awarded the Project, the implementation of the Project shall also conform to the terms and conditions, as well as specifications indicated in the Tender Document and as finally indicated by the Evaluation Committee.
- ii. Rates quoted in this Bid is for destination prices **inclusive of all taxes** (unless stated otherwise), levies, duties, packing, forwarding, freight, insurance, loading, unloading,supply, installation, testing, commissioning, and any/all charges for successful Engineering, All statutory charges, Supply & Installation, Construction, Comprehensive Operation and Maintenance of “Project”at the Site.The break-up of taxes considered are also furnished in price bid.
- iii.Rates quoted in this Bidare **inclusive of taxes and duties**.The statutory variation in taxes shall be admissible in accordance with the as per tender Taxes and duties of TenderDocument.Under no circumstances shall escalation in the prices of this Tender Document shall be entertained.
- iv.The details quoted here in stand valid for at least six months from the date of opening of the Price Bid.



#### Annexure-18:Format for Guarantee Card

##### FORMAT FOR GUARANTEE CARD TO BE SUPPLIED WITH EACH SOLAR ROOF TOP SYSTEM

1. Name & Address of theSystem:
2. Date of supply of the system:
  - i. SolarPV Module:
  - ii. Inverter:
3. Details of PV Module(s)supplied in the System
  - iii. Make:
  - iv. ModelSerialNo(s):
  - v. Wattageof thePV Module(s)underSTC:
  - vi. Guaranteevalid upto:
4. Details of Electronics & other BOS items
  - i. Make:
  - ii. Model:
  - iii. SerialNo(s):
  - iv. Guaranteevalid upto:

(Signature)

Name& Designation

Name& Address of the Bidder/bidder

(SEAL)

Place&Date:

(During the guarantee period VMC/use rserves the right to cross check the performance of the systems with the minimum performance levels specified in the Tender specifications).

## Annexure-19:Quarterly Maintenance & Servicing Report

### 1.DETAILSOFSOLARROOFTOPPHOTOVOLTAIC(PV)SYSTEMINSTALLED

1. NameofBuilding:
2. Dateofinstallation:
3. Servicingperiod:Fromto

### 2. USERPROFILE

1. NameandaddressofUser:

### 3. TECHNICALDETAILS

1. SPVModule
  - a. Capacity(Wp),
  - b. Make
  - c. NumbersofModule:
2. Inverter
  - a. Capacity(Wp),
  - b. Make
  - c. NumbersofInverter:

### 4. CHECKOFTHE PRODUCT

1. CorrectinclinationandorientationofSPVpanel :
2. Cleaningofdust fromSPVpanel :
3. Interconnectionofmodules,chargecontrolleretc.:
4. Fuseof chargecontroller:

### 5. DIFFICULTIESINOPERATION/PROBLEMFACEDBYUSER:

### 6. DIAGNOSISDETAILS/REPAIRACTION:

### 7. DATE ON WHICH SYSTEM WAS LAST ATTENDED:REMARKS:

UserName&Signature

Technician'sName&Signature

Date:

(with rubber stamp)

Annexure-20:Project completion Report for SPV Photo-Voltaic (PV) System by the Contractor

SNo	Component	Observation
1	Name of the Building	
	Site/Location with Complete Address	
	Longitude/Latitude	
2	Capacity of system installed (kWp)	
3	<b>Specification of the Modules</b>	
	Type of modules	
	Make of Modules and year of manufacturing	
	No.of Modules	
	Wattage of Modules	
	Module Efficiency	
	No of series & Parallel combinations	
	Tilt Angle of Modules	
3.1	IEC certificate Date of issue Agency Validity Enclose a IEC certificate	
3.2	RF ID tag is pasted inside or outside	
3.3	Type of RFID	

4	PCU	
	Make, & rating Type of Charge controller/MPPT	
	Capacity of inverter and year of manufacturing	
	AC Output	
	Whether hybrid or stand alone	
	Whether indigenous or imported	
	Enclose test certificate as per MNR Requirement	
	Input Voltage to Inverter	
5	Structures	
	Tracking or non-tracking	
	Indigenous or imported	
6	Cables Make and size	
	Enclose Certificate:Rating:-	
	Voltage of cable	
7	Distribution Box	
	Name	
	Make	
	Certificate	
8	Earthling and protections	

	Lightening Arrester(Type)	
9	Detail of Weather Monitoring System (If Installed)	
10	<b>Meter &amp; Back Meter No</b>	

### **Declaration**

It is to certify that all the components/sub systems and materials including junction boxes,cables, distribution boards,switches, circuit breakers used are as per TENDER requirement.

(Solar Company signature and stamp)

Date and place

## VendorList

The list of acceptable makes for equipment/system is as listed below:

Sr.	Description	VendorName
1	PCU / Inverter	SMA
		ABBIndiaLtd.
		HitachiHi-RelPowerElectronicsPvtLtd.
		DeltaElectronics
		SchneiderElect.Ltd
		Sungrow
		Solaredge
		Solis
		Growatt
2	PV Modules	Vendor of Solar Module based on latest ALMM order
3	LT Switchgear component & Enclosure (LT switchgear panel shall be CPRI approved vendor)	L & T
		Siemens
		ABB
		SchneiderElect.Ltd
		Hensel Electric Pvt Ltd
		UrjaTechniques (I)PvtLtd
		Jayesh Electricals Limited
		Havells
		C&S
4	Solar Cable/ DC Cable	M/s LAPP
		M/s Siechem
		M/s KEI Cables
		M/s UniFlex Cables
		M/s Cords Cables
		M/s Apar
		M/s Universal
		M/s KEC
		M/s Leoni
		M/s Suyog Electricals Ltd
		M/s Polycab
		M/s LAPP
5	AC Cable	M/s KEI Cables
		M/s Havells

		M/s Universal
		M/s KEC
		M/s GEMSCAB Industries Ltd,
		M/s Suyog Electricals Ltd
		M/s Apar
		M/s Siechem
		M/s RR Cable
		M/s Polycab
6	Steel Structure for MMS	ESSAR
		TISCO
		SAIL
		JINDAL
8	Earthing Pit Materials	Indelec
		OBO
9	SJB	M/s Hensel Electric Pvt Ltd
		M/s Trinity Solar
		M/s Eaton
		M/s Photon
10	Lugs	Dowell
		Comet
		3D
		HEX
11	Cable Glands	Comet / 3D
12	Optical Fiber Cable	Polycab/RR Cable
13	Lightning Arrestor (ESE type)	Erico
		Nimbus
		AT, Spain
		Ingesco
		Indelec
		Ashlok
14	Energy Meter / Bi-Directional Meter (subject to approval of DISCOM)	SEMS
		EDMI
		DISCOM Approved Make
15	MCCB	SIEMENS
		ABB
		Schneider
		L & T

NOTES:

- (1) The final make selected out of the recommended makes listed above shall be subject to the VMCs approval during detailed Engineering.
- (2) Wherever the make is not specified for any other items, the contractor shall submit credential for vendors for relevant items/equipment's, out of which VMC shall decide acceptance of vendor based on review of credentials. This shall have no price implication. VMC reserves the right to reject the proposed vendor without assigning any reason.
- (3) All other vendors which are approved by Vendor Committee of VMC (Vadodara Municipal Corporation)



**SECTION - 6**  
**FORM OF BID**

## FORM OF BID

Description of the Works:

-----  
-----  
-----

BID

To :

Address :

1. We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, specification, drawings, Bill of Quantities and Addenda for the sum (s) of

\_\_\_\_\_  
\_\_\_\_\_

(-----)

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works in the Contract within the time stated in the document.
3. We agree to abide by this Bid for the period of 120 Days from the date of opening of price bid, and it shall remain binding upon it and may be accepted at any time before the expiration of that period.
4. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
5. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this ----- day of 20

Signature ----- in the capacity of -----

----- duly authorized to sign bids for and on behalf of -----

-----

\_\_\_\_\_

(in block capitals or typed)

Address

---

---

Witness

---

---

Address

---

---

Occupation

---

---

**SECTION - 7**  
**BILL OF QUANTITIES**

## BILL OF QUANTITIES

### Preamble

1. The bill of Quantities shall be read in conjunction with the Instructions to Bidder, Conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, layout, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
4. The rates and prices shall be quoted entirely in Indian Currency.
5. A rate or prices shall be entered against each item in the Bill Quantities, whether quantities are stated or not. The cost of Items against which Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities (in case of Item rate contract).
6. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of Work.
7. General direction and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
8. The method of completed work of payment shall be in accordance with the specification for Road and Bridge works. For building works specifications for building are to be followed.
9. Errors will be corrected by the Employer for any arithmetic errors pursuant to **Clause 29** of the Instructions to Bidder.
10. Rock is defined as all materials which, in the opinion of the Engineer, required blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.

**VADODARA MUNICIPAL CORPORATION****STREETLIGHT DEPARTMENT****PRICE-BID (Without GST)****YEAR: 2026-27****NAME OF WORK : Providing and Erecting of Solar Roof Top Power Plant at City Control & Command Centre Badamdibaug with comprehensive O&M Work for 10 years.(Re-Invite)****CAPEX WORK (WITHOUT GST RATES)**

QUANTITY	ITEM NO	ITEM DESCRIPTION	RATE (Rs.)	PER	TOTAL AMOUNT
		Supply, Installation, Testing & Commissioning of following size of Grid Tied Solar Power Plant with Solar Panels (ALMM approved): Frame Material : Anodized Aluminum alloy Frame With Twin Wall Profile, Front Cover : High Transmission Low-Iron Tempered Glass (AR Coated), High efficiency and positive power tolerance P max: 0/+5, Module Efficiency should be approx. 19.5%-22%, Normal operating temperature 45'C, Junction Box with Waterproof IP67 & MC4 Compatible and Enclosed with Bypass diodes, 100% Electroluminescence test to ensure error free Modules, Thep. temp. co-efficient of the PV module shall equal or better than - 0.45%/degree C. Solar PV modules of minimum fill factor 75% to be used. Unit Production:- More than 4.5 Unit /kw /day (Actual)(1Year Avg) With 10 year Product warranty and 25 year Linear Power Warranty includes all mechanical and electrical parameters of the Solar panel. Modules must be complied to the DCR(Domestic content requirements). The Ration of AC to DC is 5:6 for the Installation capacity which are given in AC KW.			

		<p>Solar Inverter: MPPT Range: MPPT Range: 80-1000 V , Max efficiency: 97.5% - 98.9%, O/p Frequency: 50/60Hz, Operating Altitude (m) <math>\leq</math> 4000, O/p Power Factor: <math>\sim</math>1, O/P THDi: &lt;3%, Operating Temperature Range: -25~60°C, Integrated protection of Inverter are Anti-islanding Protection, Input Reverse Polarity Protection, Insulation Resistor Detection, Ground fault protection, Residual Current Monitoring Unit, Output Over Current Protection, Output Short Circuit Protection, Output Over Voltage Protection, PV array string fault Protection. Protection Degree: IP65, User Interface LCD &amp; APP, Datalogger &amp; Communication: GPRS / Wi-Fi.</p>			
		<p>Integrated, Input Reverse Polarity Protection Integrated, Insulation Resistor Detection Integrated, Residual Current Monitoring Unit Integrated, Output Over Current Protection Integrated, Output Short Circuit Protection Integrated, Output Over Voltage Protection Integrated, Protection Degree: IP65, User Interface LCD &amp; APP, Datalogger &amp; Communication: GPRS / Wi-Fi, Module Mounting Structure: The mounting (Rectangular pipe / square pipe / circular pipe) with requisite cross bars, nuts and bolts, etc. shall be Hot deep galvanized with minimum 80micron coating. The Rectangular / square /circular hollow pipe section used for the structure should have a minimum thickness of 2.0 mm. other than above, the material thickness should be minimum 2.5 mm. A certificate of a structural engineer certifying the strength and stability of the mounting structure to withstand the weight and wind speed of 150 km/hour throughout the life span of 25 years of the system, shall be submitted by the vendors. Hot Dipped Galvanized steel coils.</p>			

		<p>suitable arrangement for base plate for foundation , solar panel mounting, the structure should be suitable for carry the load of solar panel,wiring, sprinkler system etc. with necessary foundation work/wall mount, j bolt, anchor fastner etc. the nut bolt used for installtion of stucture should be (SS 304) quality.The ground clearance of the bottom most edge of solar panel shall not be less than 300 mm to 1200 mm or as per site's technical/feasibility requirement.a. Column –The minimum section (thickness) should be 60MM*40MMb. Rafter - The minimum section (thickness) should be 60MM*40MMc. Purlin - The minimum section (thickness) should be 40MM * 40MM Balane of System with necessary Swichgears (Suitabel size and protection of ACDB &amp; DCDB), inter connecting wiring, earthing system as per the CEIG drawing approval, lightining arrester system as per the CEIG drawing approval, all liasoning work with various gov. dipartment like state nodal agency, DISCOM &amp; CEIG is included in</p>			
		(Excluding All charges namely GEDA Application fees, Solar connectivity Charges, Meter connectivity Charges, Meter testing Charges and system stability/strenthning charges.)			
50	1	Grid Tied Solar Power System: 26 - 50 kW (3 - phase)	41739	per KW	2086950.00
2	2	Providing & Erecting HT Bidirectional meter as per MGVCN Norms.	15750	Each	31500.00
1	3	Providing & Erecting LT Solar meter as per MGVCN Norms.	5040	Each	5040.00
3	4	Providing & Erecting GPRS MODEM as per MGVCN Norms.	9450	Each	28350.00
9	5	Providing & Erecting LT CT of 100/5 A as per MGVCN Norms.	1155	Each	10395.00
3	6	Providing & Erecting Prewired with 3 TTB SMC (Sintex ) Enclosure with Fabricated Metal Stand For HT BD Meter & Modem	18900	Each	56700.00
			<b>Total (Capex)</b>		2218935.00



OPEX WORK (WITHOUT GST RATES)					
50	4	Operation and Maintenance work of Solar Roof Top Power Plant for 1st year	1356	per KW	67800.00
50	5	Operation and Maintenance work of Solar Roof Top Power Plant for 2nd year	1397	per KW	69850.00
50	6	Operation and Maintenance work of Solar Roof Top Power Plant for 3rd year	1438	per KW	71900.00
50	7	Operation and Maintenance work of Solar Roof Top Power Plant for 4th year	1481	per KW	74050.00
50	8	Operation and Maintenance work of Solar Roof Top Power Plant for 5th year	1526	per KW	76300.00
50	9	Operation and Maintenance work of Solar Roof Top Power Plant for 6th year	1572	per KW	78600.00
50	10	Operation and Maintenance work of Solar Roof Top Power Plant for 7th year	1619	per KW	80950.00
50	11	Operation and Maintenance work of Solar Roof Top Power Plant for 8th year	1668	per KW	83400.00
50	12	Operation and Maintenance work of Solar Roof Top Power Plant for 9th year	1718	per KW	85900.00
50	13	Operation and Maintenance work of Solar Roof Top Power Plant for 10th year	1769	per KW	88450.00
			Total (Opex)		777200.00
		Total Rs (Capex + Opex)		2996135	

**Note: (% above or below : in Words (To be filled Online only))**

### BILL OF QUANTITIES

#### (A) Percentage Rate Tender (Up to INR 50 Cr.)

Item No	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figures	Amount

I/We am/are willing to carry out the work at...% above/belowpercent (Should be written in figures and words) of the estimated rate mentioned above. Amount of my /our tender works out as under.

Estimated amount put to tender

Deduct.....% below

Net

In words

Estimated amount put to tender

Add.....% Above

Net

In words

**SECTION - 8**

**SECURITIES AND OTHER FORMS**

## PERFORMANCE SECURITY

TO,

----- (Name of Employer)

----- (Address of Employer)

-----

WHEREAS ----- (name and address of contractor) (hereafter called "the Contractor") has undertaken, in pursuance of Contracts No. ----- dates ----- to execute ----- (name of Contract and brief description of Works) (hereinafter called "The Contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractors such a bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, upto a total of ----- (amount of guarantee)\* (in words), such sum being payable in types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ----- (amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting it with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract to of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such charge, addition or modifications.

This guarantee shall be valid until 60 days from the date of expiring of the Defect Liabilities period.

Signature and Seal of the guarantor -----

Name of Bank -----

Address -----

Date -----

\*An amount shall be inserted by the Guarantor, representing the percentage the Contract price specified in the Contract denominated in Indian Rupees.

**ADDITIONAL PERFORMANCE SECURITY**

[Clause 34.1. (A)]

TO,

\_\_\_\_\_ (Name of Employer)

\_\_\_\_\_ (Address of Employer)

WHEREAS \_\_\_\_\_ (Name and address of contractor) (hereafter called "The Contractor") has undertaken, in pursuance of Contracts No. \_\_\_\_\_ dates \_\_\_\_\_ to execute \_\_\_\_\_ (Name of Contract and brief description of Works) (hereinafter called "The Contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractors such a bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of \_\_\_\_\_ (amount of guarantee) \_\_\_\_\_ (in words), such sum being payable in types and proportions of currencies in which the Contract prices is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of \_\_\_\_\_ (amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting is with the demand

We further agree that no change or addition to or other modification of the terms of the Contract to of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such charge, addition or modifications.

This guarantee shall be valid until **28 days** from the project completion date.

Signature and Seal of the guarantor \_\_\_\_\_

Name of Bank \_\_\_\_\_

Address \_\_\_\_\_

Date \_\_\_\_\_

## BANK GUARANTEE FOR ADVANCE PAYMENT

TO,

\_\_\_\_\_ (Name of Employer)

\_\_\_\_\_ (Address of Employer)

\_\_\_\_\_ (Name of Contractor)

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause 51.1 ("Advance Payment") of the above mentioned Contract, \_\_\_\_\_ (name and address of Contractor) (hereinafter called "the Contractor") shall deposit with (name of Employer) a bank guarantee his proper and faithful performance under the said Clause of the Contract in an amount of \_\_\_\_\_ (amount of Guarantee)\*- \_\_\_\_\_ in words).

We, the \_\_\_\_\_ (bank of financial institution), as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to \_\_\_\_\_ (name of Employer) on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding \_\_\_\_\_ (amount of \_\_\_\_\_ in guarantee)\* words).

We further agree that no change or addition to or other modifications of the terms of the Contractor or Works to be performed thereunder or of any of the Contract documents which may be made between \_\_\_\_\_ (name of Employer) and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modifications.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until \_\_\_\_\_ (name of employer) receives full repayment of the same amount from the contractor.

YOUR'S TRULY

Signature and Seal \_\_\_\_\_  
Name of Bank/Financial Institution \_\_\_\_\_  
Address \_\_\_\_\_  
Date \_\_\_\_\_

\* An amount shall be inserted by that Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

## Letter of Acceptance

(Letter head paper of the Employer)

\_\_\_\_\_(date)  
To,  
\_\_\_\_\_(Name and address of the Contractor)  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sirs,

This is to notify you that your Bid dated \_\_\_\_\_ for execution of the \_\_\_\_\_ (Name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees \_\_\_\_\_ (\_\_\_\_\_) (amount in words and figures) as corrected and modified in accordance with the Instructions to Bidders\* is hereby accepted by our agency.

You are requested to furnish performance security, in the form detailed in para 34.1 of ITB for an amount equivalent to Rs. \_\_\_\_\_ within **10 days** of the receipt of this letter of acceptance up to beyond **60 days** from the date of expiry of defects Liability period i.e. upto \_\_\_\_\_ and the Additional Performance Security for an amount equivalent to Rs. \_\_\_\_\_ shall be valid beyond 28 (twenty-eight) days of Project Completion Date i.e. upto \_\_\_\_\_ and sign the contract, failing which action as stated in Para 34.3 of ITB will be taken.

Yours Faithfully

Authorized Signature  
Name and title of Signatory  
Name of Employer

---

\* Delete "Corrected and" or and modified if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

**Issue of Notice to proceed with the work**

(Letterhead of the Employer)

----- (date)

To,

\_\_\_\_\_(Name and address of the Contractor)

\_\_\_\_\_

\_\_\_\_\_

Dear Sirs,

Pursuant to your furnishing the requisite security in ITB Clause 34.1 and signing of the Contract for the construction of \_\_\_\_\_

\_\_\_\_\_ at a bid Price of Rs.

\_\_\_\_\_.

You are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully

(Signature, name and title of signatory authorized To sign on behalf of Employer)



## AGREEMENT FORM

This agreement, made on the \_\_\_\_\_ Day of \_\_\_\_\_ Between \_\_\_\_\_ (name and address of Employer) (Hereinafter called "the Employer") and \_\_\_\_\_ (name and address of Contractor) herein after called "the Contractor" of the other part.

Whereas the Employer is desirous that the Contractor execute

\_\_\_\_\_  
\_\_\_\_\_  
Name and identification number of contract (hereinafter called "the works") and the employer has accepted the Bid by the Contractor for the execution and completion of such works and the remedying of any defects therein, at a cost of Rs. ....

### NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read construed as part of this Agreement.
2. In Consideration of the payment to be made by the Employer to the contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein in conformity in all aspects with the provisions of the contracts.
3. The employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying the defects wherein contract price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the contract.
4. The Following documents shall be deemed to form and be read and construed as part of this Agreement viz
  - letter of Acceptance
  - Notice to proceed with the works:
  - Contractor's Bid
  - Conditions of contract: General and Special
  - Contract Data
  - Additional conditions
  - Bill of Quantities and Any other documents listed in the Contract data as forming part of the Contract.

In witness whereof the parties there to have caused this Agreement to be executed the day and year first before written The Common seal of \_\_\_\_\_ Was hereunto affixed in the presence of:

Signed, sealed and Delivered by the said \_\_\_\_\_

\_\_\_\_\_

In the presence of

Binding signature of Employer \_\_\_\_\_

Binding Signature of Contractor \_\_\_\_\_

In the presence of

Standing Committee Member 1 \_\_\_\_\_

Standing Committee Member 2 \_\_\_\_\_

**UNDERTAKING**  
**(For Investment)**

I, the undersigned do hereby undertake that our firm M/s  
..... would invest a minimum cash up  
to **25%** of the value of the work during implementation of the contract.

\_\_\_\_\_  
(Signed by an Authorized officer of the firm)

Title of officer

Name of firm

DATE

**UNDERTAKING**  
**(For Validity)**

I, the under signed do here by under take that our firm  
M/s..... agree to abide by this  
bid for a period days From the date of opening of the price bid and it shall be binding  
on us and may be accepted at any time before the expiration of thatperiod.

\_\_\_\_\_  
(Signed by an Authorized officer of thefirm)

Title of officer \_\_\_\_\_

Name offirm \_\_\_\_\_

DATE \_\_\_\_\_

**~~SECTION - 9~~**  
**DRAWINGS**

**SECTION - 10**

**DOCUMENTS TO BE FURNISHED BY BIDDER**

### Check list (for Reference)

Sr. No.	Description	Remarks
1.	Tender Fee (Demand Draft)	Rs. D.D.No.: Bank:
2.	2%E.M.D(DemandDraft)	Rs. D.D.N0. Bank:
3.	Original Legal & Stable Power of attorney.	
4.	The Tenderer must have registered in appropriate class for Electrical Category either with Vadodara Municipal Corporation,Central/State/PWD/M.E.S./SemiGovt.organi zations.	
5.	Electrical Contractor License	Up to Year Issuing Authority
6.	Valid Solvency certificate	Bank Validity Amount
7.	Average annual financial turn over during the last 3 years ending 31 <sup>st</sup> march of the Previous financial year, should beat least 30% of the estimated cost.	
8.	Tenderer should have carried out single similar nature job works during last 7 years  a)40% of estimated amount X 3works b)50% of estimated amount X 2works c)80% of estimated amount X 1work	a) b) c)
9.	Detail Technical Literature / Catalogue.	
10.	Organization setup / Staff Details..	
11.	Provident Fund, ESIs and GST registration	
12.	Last receipt of GST	
13.	Last receipt of Provident Fund and ESIs	

**Seal & Signature of the Tender**