



JAMNAGAR MUNICIPAL CORPORATION

NOTICE INVITING ON LINE TENDER



Jamnagar Municipal Corporation, Jamnagar, Invites On-Line Tender for the **Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission** at Mahanagar Seva Sadan, Jamnagar from competent manufacturers or authorized dealers and having experience and proven track record in this kind of works.

(A) Details of Tender Items					
Sr. No.	Name of Work	Estimated Tender Value In Rs.	EMD In Rs.	Tender Fee In Rs.	Period of Completion of Work
1	Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission	1.35 Cr.	1,35,000/-	3600/-	Year 2023-24

(B) Schedule for tendering is fixed as under		
I	Start Date of Downloading of Tender	From Date: 27-01-2023
II	Last Date for Submission of Online Tender	From Date: 21-02-2023
III	Submission of EMD, Tender Fee & Other documents during office hours	Date: 23-02-2023 during Office Hours in the Office of The Deputy Engineer, Light Branch, 3rd Floor, Mahanagar Seva Sadan, Jamnagar

- (1) Competent Authority, Jamnagar Municipal Corporation, Jamnagar Reserves the rights, without assigning any reasons whatsoever to:
 - Amend the scope and value of any work to be tendered.
 - Reject or accept any tender at its discretion.
 - Cancel the entire tendering process and reject all bids
- (2) Request for extension of time or date for submissions of tenders shall not be entertained beyond the stipulated date and time.
- (3) However anything has been mentioned at anywhere else in this tender
 - The rates to be quoted for this work will be valid for 180 days from the date of Price Bid Opening.
 - Joint Venture is not allowed.
 - Jamnagar Municipal Corporation, Jamnagar shall neither be liable for any such action nor be under any obligation to inform any of the applicants of the grounds for its action and decisions.

Sd/-
Commissioner
Jamnagar Municipal Corporation

(Sign and Seal of the Bidder)

General Terms and Conditions: -

- Bidders can download the Tender Documents free of cost from the web site.
- Bidders have to submit Price Bid in Electronic format only on nprocure website till the Last Date & time for submission.
- Offers in physical form will not be accepted in any case.
- Free vendor training camp will be organized every Saturday between 4.00 to 5.00 p.m. at (n) code solutions-A Division of GNFC Ltd., bidders are requested to take benefit of the same.

Eligibility:

Further Details of this tender are as under:

1.0	Particulars: Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission
2.0	Downloading Tender document:
2.1	Bid documents will be available on web site https://jmc.nprocure.com up to date shown above
2.2	Bidders wishes to participate in this tender will have to register on web site https://www.nprocure.com
3.0	Digital Certificate
3.1	Bidders who wish to participate in on-line tenders will have to procure / should have legally valid digital Certificate (Class - III) as per Information Technology Act-2000 using which they can sign their Electronics bids. Bidders can procure the same from any of the license certifying Authority of India or can contact (n) code solutions- A Division of GNFC Ltd., who are licensed Certifying Authority by Govt. of India.
3.2	All bidders should be Digitally Signed, for details regarding digital signature certificate and related training involved the below mentioned address should be contacted:
	(n)code solutions A division of GNFC 403,GNFC Infotower, Bodakdev, Ahmedabad - 380 054 (India) Sales : 079- 4000 7323 Support : 079- 4000 7300 Email : nprocure@ncode.in
3.3	Bidders who already have a valid Digital certificate need not procure a new digital certificate.
4.0	On line submission of Price-bid
4.1	Bidders can prepare & edit their offers number of times before tender submission date & time. After tender submission date & time, bidder cannot edit their offer submitted in any case. No written or online

(Sign and Seal of the Bidder)

	request in this regard shall be granted.
4.2	Bidder shall submit their offer i.e. Price bid in Electronic format on above mentioned website & Date shown above after Digitally signing the same.
4.3	Offers submitted without digitally signed will not be accepted.
4.4	Offers in physical form will not be accepted in any case.
5.0	Submission of Tender Fees, Bid security and other Documents:
5.1	Tender fee: <u>Rs. 2400/- (Rupees Two Thousand Four Hundred only)</u> by Demand Draft/By cash in JMC window/ in favour of The Municipal commissioner, Jamnagar, payable at Jamnagar from any Nationalised Bank. Demand Draft issued after the last date of submission of bids will not be considers or accepted.
5.2	Bid Security i.e. EMD for <u>Rs. 1,35,000/- (One Lacs Thirty Five Thousand only)</u> in the form of Demand Draft/FDR in favour of The Municipal commissioner, Jamnagar, payable at Jamnagar from any Nationalised Bank. Demand Draft issued after the last date of submission of bids will not be considers or accepted.
5.3	Other documents require to be submitted:
	a. Digital Certificate
5.4	Bidders shall have to submit DD for Tender Fee, DD against EMD and other documents as mentioned above in physical form so as to reach Jamnagar Mahanagar Seva Sadan on date shown above during office hours at Light Branch by Regd. A.D. or speed post. Tender Fee, EMD and other documents received early or later than the time specified will not be accepted in any case and the bid of that bidder shall be considered non-responsive.
5.5	Bidders has to submit the documents as said in 5.4 above and no other condition in any form shall be considered at all, at the time of evaluation of the tender i.e. The tender shall have to submit unconditional offer without differing from any of the tender condition. Submission of Documents needs to be submitted by Speed post or Regd. A.D. only. No hand to hand submission will be allowed.
6.0	Opening of Tender
6.1	Opening of bid documents will held on Date & Time shown above in the office of store Branch, Mahanagar Seva Sadan, Jamnagar.
6.2	Intending bidders of their representative who wish to remain present at Jamnagar Mahanagar Seva Sadan Premises at the time of tender opening can do so.

TENDER

**To,
The Commissioner,
Jamnagar Municipal Corporation,
Jamnagar.**

Dear Sir,

We hereby offer to execute the proposed Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission under contract at the respective rates as mentioned in the accompanying schedule of quantities.

We have studied the site and have read the terms and conditions of work, drawings, special conditions, articles of agreement, conditions of contracts and specifications.

We agree to finish the entire work within 3 Months from the date of order for commencement of work.

We have deposited as earnest money a sum of **Rs. 1,35,000/- (One Lacs Thirty Five Thousand Rupees Only)** with you, which amount is not to bear any interest and we do hereby agree that this sum shall be forfeited by you if we fail to execute the contract when called upon to do so, in the event of your accepting our tender.

Yours faithfully,

Name in capital letters : _____
Name of firm : _____
Name of directors : _____
Name of partners : _____

Articles of Agreement

Made the _____ day of _____ 2023

_____ between _____
_____ (here in after called "the owner") on
one part and

_____ whos
e registered office is situated at

_____ (here in after called "the bidder") on the second part.

Whereas the owner is desirous of constructing Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission for JAMNAGAR MUNICIPAL CORPORATION whereas the bidder has supplied the owner with a full priced copy of said Bills of Quantities (which copy is here in after referred to as "the Contract Bills") and the Contract Bills have been signed by or on behalf of the parties here to: and whereas the Bidder _____ has deposited the _____ sum of Rupees _____ with the Owner for the due performance of this Agreement.

(Sign and Seal of the Bidder)

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. For the Consideration here in after mentioned the Contract will upon and subject to the conditions annexed carry out and complete the work shown upon the contract drawings and described by or referred to in the contract Bills and in the said conditions.

2. The Owner will pay the bidder the sum of Rupees

(Here in after referred to as "the Contract Sum") or such other sum as shall become payable here under at the times as in the manner specified in the said conditions.

3. The said condition and appendix there to shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by, submit themselves to the conditions and perform the agreements on their parts respectively in such conditions contained.

As witness the hands of the said Parties.

Signed by the said

Owner

In the presence of

Witness : _____

Name : _____

Address : _____

Signed by the said

Bidder

In the presence of

Witness : _____

Name : _____

Address : _____

DECLARATION FORM

- (I) I/We hereby declare that I/We have visited the site and fully acquainted myself/ourselves with the local situations regarding materials labour and other factors pertaining to the work before submitting this tender.
- (II) I/We hereby declare that I/We have carefully studied the conditions of contract; specifications and other documents of this work and agree to execute the same accordingly.
- (III) We agree to receive payments if delay is due to late receipt of grant in-aid from Government.

DECLARATION CERTIFICATE (G.R. date 4-2-89 as revised by GR. No. TNC - 1083/6681/4/C, dated 31-8-1994)

- (iv) I/We hereby declare that my/our near relative are not working in Jamnagar Municipal Corporation, Jamnagar of Jamnagar Municipal Corporation in any post.

Seal & Signature of the Bidder

Date :

JAMNAGAR MUNICIPAL CORPORATION
JUBILEE GARDEN, JAMNAGAR-361001
Ph.:0288-2552321, Fax: 0288-2554454

E - TENDER

NAME OF WORK	: - Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission
ESTIMATED COST	: - 1.35 Cr.
PERIOD OF COMPLETION	: - <u>Within 90 days from work order</u>
EARNEST MONEY DEPOSIT	: - <u>Rs. 1.35.000/-</u> (To be paid by Demand Draft/FDR drawn in Favour of the Commissioner, Jamnagar Municipal Corporation, Jamnagar.)
TENDER FEE	: - <u>Rs. 3600/-</u> (Non-refundable)
SECURITY DEPOSIT	: - 3%
TENDER DOCUMENT DOWNLOAD START DATE	: - 27/01/2023
TENDER DOCUMENT DOWNLOAD END DATE	: - 21 /02/2023
EMD OR OTHER DOCUMENT SUBMISSION	: - 23/02/2023 during office hours (Speed post and Regd. A.D. only)
TENDER VALIDITY PERIOD	: - 180 DAYS

(Sign and Seal of the Bidder)

1. GENERAL INFORMATION OF BIDDER

To,
The CONROLLING OFFICER,
LIGHT BRANCH

Details regarding my/our/partners Directors of our Company (in the case of limited company) names address(es) Telephone number(s), Income - Tax office etc. are as under:

Sr No.	Name(s) of person / partner/ company	Full address of the place of business with pin code	Telephone No. (s) Office	Residential address(es)	Telephone No. (s) Residence	Full address of income tax office / ward where income tax returns are filed
1	2	3	4	5	6	7

(A) I/We hereby agree to intimate to you about changes. if any in the above mentioned address(es) areas and Telephone Nos.(s) within fifteen days of its occurrence till my/our deposit for the said work paid by me/us is not refunded to me/us.

**Signature of Bidder
with stamp**

Place:

Date:

(Sign and Seal of the Bidder)

2. TENDER AT A GLANCE

Tender for Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission. The salient features and key provisions of the Tender:

In view of the requirement of Jamnagar Municipal Corporation for installation of Grid tied Solar Photovoltaic rooftop system, tenders are invited from the reputed and experienced manufacturer or bidder for design, supply, installation, commissioning and 5 years comprehensive maintenance contract at any given site in Jamnagar Municipal Corporation. JMC is planning to implement solar roof top project at Pump House Filter Plant is approximately 285 kW rating. The broad specifications of the system (Detailed Specifications are given in the Tender elsewhere) shall be as follows:

- 1) **Solar PV Modules:-**The solar plant shall consist of **Monocrystalline** panels Wp rating of each panel shall not be less than 380 Wp and having valid IEC certificate. **The SPV Module should be Indian Makes only.** Necessary documents in this regards must be provided to JMC.

The bidder shall be required to submit the Self declaration; regarding the Modules used under this supply is “**Made in India**”, from the concerned manufacturer of Solar Modules, before commissioning of the System. Such firm and Shortlisted bidder, those violate the requirement of Indian Make Module shall be put under the black list, and or stop deal list as may be decided by the Commissioner, Jamnagar Municipal Corporation.

ALMM (Approved list of module and Manufactures), the Shortlisted bidder shall have to submit self-declaration regarding domestically manufactured Modules used in the SPV System in this project. Whenever, the ALMM list published by the MNRE, the Model and Manufactures of the Module shall be from the ALMM only used in the SPV System in this project.

- 2) **Inverter:-** IEC certified invertor with in-built anti-islanding facility of a capacity plus minus 10 % of the aggregate capacity of the modules. The combined wattage of all inverters shall not be less than rated capacity of power plant under STC.
- 3) **Mounting structure:-** The mounting (Rectangular pipe / square pipe / circular pipe) with requisite cross bars, nuts and bolts, etc. shall be pre-galvanized or galvanized. 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 2.0 mm. A certificate of a structural engineer certifying the strength and stability of the mounting structure to withstand the weight and wind speed of 200 km/hour (Considering Cyclonic factor 1.15) throughout the life span of 25 years of the system, shall be submitted by the bidders. The ground clearance of the bottom most edge of solar panel shall not be less than 2500 mm.

Note: K1= 0.90, K2= 1.12, K3= 1, K4= 1.15 as per IS 875 (part 3); 2015

- 4) AC, DC cable shall be of ISI mark and reputed make.
- 5) ESE Lightning arrestor shall be provided for each of the Solar Rooftop installations.

(Sign and Seal of the Bidder)

- 6) The system cost shall be inclusive of supply of solar modules, invertors, mounting structure, AC DC cables in RPVC conduit, AC - DB, DC – DB, earthing, LA, Bidirectional meter, Solar AC Meter and its installation.
- 7) DG synchronization is required in case of DG available at site.
- 8) The scope of regular cleaning of the modules for five years shall also be in the scope of bidder. The arrangement of required water etc for regular cleaning of the modules shall be in the scope of the bidder.
- 9) The Tender fee, EMD, eligibility criteria shall be as follow:

Sr. No.	System Capacity	Tender *Fees, Rs.	EMD, Rs.*	The firm should have a minimum cumulative turnover for the last three financial years (ie., 2018-19, 2019-20, 2020-21).	Bidder shall have experience in the execution of design, supply, installation, and maintenance of Grid-connected SPV systems, having a cumulative capacity spread across India during the last three years (i.e., 2018-19 to 2020-21)
1	285 kW	3600.00	1,35,000.00	Rs.3 Crores	Bidder shall have experience in the execution of design, supply, installation, and maintenance of Grid-connected SPV systems, having a cumulative capacity of 800 kW spread across India during the last three years (i.e., 2018-19 to 2020-21). The reference plant of 400 kW or above capacity must have been in successful operation for at least 6 months prior to the date of techno-commercial bid opening.

* No Bidders shall be exempted from payment of Tender fee and EMD, Any Bidders not fulfilled the condition shall be outright rejected.

- 10) The payment terms towards the supply, installation, commissioning and 5 years CMC shall be as follows:
 - a) 50% of the order value upon 100% Supply of material at Site and certification/Verification of JMC/third party approved by JMC
 - b) 30% shall be release after the Installation, Testing and commissioning.
 - c) 20% of the order value against the equivalent amount of performance bank guarantee of 10% valid for a period of 5 years from the date of commissioning of the system (date of meter installation).
 - d) The project completion period shall be 90 days from the date of placement of order, completion should mean, commissioning of the system, meaning commencement of

(Sign and Seal of the Bidder)

injection of power to the grid. The delay if any in the specific completion period shall be dealt with on the basis of the certified documentary evidence of the Single Line Diagram (SLD) drawing, submission and approval to CEI, estimate generation and payment to DISCOM and application submission and approval of CEI for charging of system.

- e) It shall be the responsibility of the bidder to clean the modules throughout the five year CMC period to ensure a **capacity utilization factor of minimum 15 % on annual basis to be measured at inverter /Solar Meter**, until the end of fifth year, inclusive of degradation, if any, of the module and /or inverter. The bidder shall ensure shadow free installation and easy access to the system monitoring, repairs etc.
- f) It shall be mandatory for the bidder to visit the system installation site every 2 month and submit a report to JMC duly signed by the authority of beneficiary agency/office for the system working satisfactorily, in prescribed format, including the electricity generation record of the solar meter and Bi-directional meter reading.
- g) The capacity utilization factor (CUF) of the solar power plant shall not be less than minimum 15 % on annual basis, during the five year CMC period. The capacity utilization factor (CUF) shall be maintained at minimum 15 % and necessary efforts shall be made to achieve it by the bidder. In case the system fails to attain the required CUF annually, the system shall be deemed to underperforming. The calculation of the CUF shall be on the basis of the generation recorded by the inverter / solar system AC meter. The shortfall of energy to achieve minimum 15% CUF on the yearly basis shall be compensated by the bidder to JMC at the rate equivalent to the prevailing DISCOM tariff during the year. Failing which JMC may invoke the entire Performance Bank Guarantee.
- h) Conditional Tender or Tender with deviations shall be outright rejected at discretion of Commissioner of JMC.

3.0 CHECK LIST

To ensure that your offer submitted to JMC is complete in all respects, please go through the following checklist and tick mark for the enclosures attached with your offer:

Sr. No	Description	Attached/ Not attached	Page No. if Attached
1	General Information about the bidder as per Annexure-1		
2	Earnest Money Deposit in the prescribed form		
3	Tender Document Fee in the prescribed form.		
4	The original document duly signed and sealed on every page, as a confirmation of acceptance of the terms and conditions of the document.		
5	A copy GST Number, Permanent Account Number (PAN)		
6a	A copy of EPF registration number and latest challan		
6b	Electrical Contractor License		
7	Relevant IEC certificates for SPV panels, PCU and all the other machineries valid up to 31 st December 2021, can be submitted by successful bidder at the later date. (Brand of the SPV needs to be specified)		
8	Details of similar work done in last three financial years along with copies of the orders and Commissioning certificates from the SNA and customers (as applicable), as per the Offer Evaluation Criteria and as per Annexure - 2 of the Tender document		
9	Details of Technical staff available (Brief Bio-data of key Personnel be given) as per Annexure - 3 of the Tender document		
10	Declaration of the Bidders about any relatives working with JMC as per Annexure - 4 of the Tender document		
11	Deviation, if any, from the specifications, terms and conditions etc. (Annexure - 5)		
12	List of Plant and Machinery (Annexure - 6)		
13	For Turnover of company for last 3 years 2018-19, 2019-20 and 2020-21* practicing CA/CS certificate attached. *Provisional balance sheet of FY 2021-22 shall be allowed.		
14	SPV system instruction manual copy		
15	All the pages of Tender documents/ attachments numbered		
16	Declaration of Non-Blacklisting of the bidder (As per Appendix-IV)		

(Sign and Seal of the Bidder)

4. DETAILS OF EARNEST MONEY DEPOSIT AND TENDER FEE ATTACHED

Sr. No.	Description
1	<u>Earnest Money Deposit</u> Earnest Money Deposit of Rs. submitted in the form of Demand Draft, drawn on _____ Bank, _____ Branch, bearing DD No. _____ dated _____ is attached herewith.
2	<u>Tender Document Fee</u> Tender Document Fee of Rs. submitted in the form of Demand Draft drawn on _____ Bank, _____ Branch, bearing DD No. _____ dated _____ is attached herewith.

Annexure 1

GENERAL INFORMATION ABOUT THE BIDDER

1.	Name of the Company	
2.	Postal Address	
3.	Telephone nos. Fax no.	
4.	e-mail address and URL	
5.	Type of Company Attach Proof of Company Registration along with a copy of the Partnership Deed/ Article of Association and Memorandum of Understanding	Proprietorship/ Partnership/ Private Limited/ Public Limited (Pl. tick appropriately)
6.	Name and designation of the representative of the Bidders to whom all reference shall be made to expedite technical co-ordination.	
7.	Entrepreneur Memorandum Part 2 registration with DIC/ NSIC registration no./ CSPO registration no./ DGS&D registration no.	
8.	EPF registration number	
9.	Factory Address	
10.	Factory Telephone/Fax no.	
11.	Factory e-mail address	
12.	Floor area of the factory	
13.	Manufacturing facilities (a list of machinery be attached as per annexure-6)	
14.	Details of Technical Staff available. Please furnish information as per Enclosed Annexure 3.	

(Sign and Seal of the Bidder)

15.	Details of workmen on muster roll Skilled/unskilled. (attach copy of muster roll)	
16.	List of components manufactured by the company at their factory.	SPV panel/ Inverter Pl. tick appropriately)
17.	List of components sourced from outside/ other agencies.	
18.	Has the company/firm to pay arrear of income tax? If yes up to what amount.	
19.	Turnover of company for last 3 years 2018-19, 2019-20, and 2020-21. And 2021-22 (provisional) Please attach practicing CA/CS certificate.	2018-19 Rs.
		2019-20 Rs.
		2020-21 Rs.
20.	Has any Govt. Dept./ Undertaking ever debarred the company/ firm from executing any work?	

It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect at later date, our tender shall be liable to rejected and our company debarred from executing any business with JMC.

Date:

Sign. and Stamp of the Bidders

5. GENERAL INFORMATION OF TENDER

5.1 DOCUMENTS

The tenders as submitted shall consist of the following documents.

- i) Complete set of Tender documents as sold / downloaded duly filled in and signed by the Bidder and as prescribed in different clauses of the tender documents. Tender Fee and EMD must be submitted with the tender documents as necessary for the qualification.
- ii) Demand draft of tender fee in case of Tender documents downloaded from website.
- iii) Earnest Money Deposit amounting **to Rs. 1.35,000/- (One Lacs Thirty Five Thousand Rupees Only)** send in the manner specified.
- iv) Power of Attorney or a True copy thereof duly attested by a Gazette Officer in case as authorized representative has signed the tender.
- v) Audited Balance sheet for last three years, P.F., and Certificate as per labour Act.
- vi) Declarations regarding the bidder work of comparable nature and construction organization in the Performa enclosed and as description of the works therein.
- vii) The full name and address of the Bidder shall be written on the bottom left hand corner of the sealed cover.
- viii) Other documents mentioned in P.Q.
- ix) Details of experience

Tender documents must have to be submitted only through Reg. A.D. post / Speed Post only. Hand to hand or personal submission of the documents directly at office will not be permitted.

5.2 ALL PAGES TO BE INITIALED

All signature in tender documents shall be dated as well as all pages of all section of Tender documents shall be initialed at the lower right hand corner or signed wherever required in the Tender papers by the Bidder or by person holding power of attorney authorizing him to sign on behalf of the Bidder before submission of Tender.

5.3 RATES TO BE FIGURES AND IN WORDS

The Bidder shall quote the rates in English in both figures as well as in words the rates and amounts tendered by him in the schedule of price bid. The item wise tendered amount for the work shall be entered in the abstract of estimate and duly signed by the Bidder.

5.4 CORRECTIONS AND ERASURES

All corrections and Alterations in the entire of Tender papers will be signed in fully by the Bidder with date. Over writings is not permissible.

(Sign and Seal of the Bidder)

5.5 SIGNATURE OF BIDDER

The Tender shall contain the name, residence and place of business of person or persons making the Tender and shall be signed by the Bidder with his usual signature. Partnership firms shall furnish the full names of all partners in the Tender. It should be signed in the Partnership's name by all partners or, by duly authorized representative followed by the name and designation of the person signing Tender by a Corporation shall be signed by an authorized representative and a Power of Attorney in the behalf shall accompany, the Tender copy of the constitution of the firm with names of all partners shall be furnished when a bidder signs a tender in a language other than English, the total amount tendered should in addition, be written in the same language, the signature should be attested by the least one witness.

5.6 WITNESS

Witness and sureties shall be persons of status and property and their names, occupation and address shall be stated below their signature.

5.7 DETAILS OF EXPERIENCE

The Bidder should enclose documents to show that he has previous experience in having successfully completed in the recent past work of this nature together with the name of Owner's location of sites and value of contract.

5.8 TRANSFER OF TENDER DOCUMENTS

Transfer of Tender documents is not permissible.

5.9 EARNEST MONEY DEPOSIT

The Bidder must pay earnest money as given in the notice inviting Tenders and attached the official receipt, if paid in cash with technical bid Tender. The earnest money can be paid in Demand Draft in favour of Municipal Commissioner; Jamnagar EMD shall be attached with Technical Bid.

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

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

(Sign and Seal of the Bidder)

5.10 SECURITY DEPOSIT

The person/persons whose tender may be accepted (herein after called the bidder) shall pay 3% Security Deposit of the **Basic order** value from the date of receipt of the order **with the validity of 5 year from the date of order**. Performance Deposit of 7% needs to be submitted. Total 10% of Deposit needs to be submitted by bidder.

5.11 VALIDITY

Tenders submitted by shall remain valid for acceptance for a period of 180 days from the said period of 180 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 bidder revoking or canceling 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.

5.12 RIGHT OF JMC TO ACCEPT OR REJECT TENDER

The acceptance of Tender will rest with the JMC. The JMC however, does not bind itself to accept the lowest tender and reserves to itself the authority to reject any or all the tenders received without assigning any reasons whatsoever. Misleading or wrong information submitted by the bidder shall be liable to be rejected.

Tender in which any of the particulars and prescribed information are missing or are incomplete in any respect and / or the prescribed conditions are not fulfilled are liable to be rejected.

Canvassing in connection with tender is strictly prohibited and tenders submitted by the bidder, who resort to canvassing, will be liable to rejection.

Tender containing uncalled remarks or any additional conditions are liable to be rejected.

5.13 TIME SCHEDULE

The time allowed for carrying out the job is as mentioned in special conditions Clause.

5.14 AGREEMENT

The successful bidder shall be required to execute an agreement within 15 days from the date of acceptance of tender. In the event of failure on the part of the successful bidder to sign the agreement within above stipulated period, the earnest money or his initial security deposit will be for fitted and the acceptance of the tender shall be considered as cancelled. The successful tender shall be considered as cancelled. The successful bidder will be required to sign the contract Agreement on as per rule of Gujarat Government Stamp paper.

(Sign and Seal of the Bidder)

6. GENERAL CONDITION OF TENDER

6.1 Acceptance:

Intimation of acceptance of tender shall be given by registered post to the address given below the signature of the bidder in the tender.

6.2 Relation with public Authorities:

The bidder shall comply with all powers and legal orders and directions given from time to time by any local or public authorities and shall pay out of his own money, the fees or charges to which he shall be liable.

6.3 Permit and Licenses:

The bidder shall procure at his sole expenses all permits and licenses and pay all charges and fees for lawful execution of the work.

6.4 Inspection of materials:

1. The bidder shall furnish written information to the Executive stating the original sources of supply and dates of manufacturing of all materials brought or manufactured away from the actual site of the work.
2. The bidder shall furnish the Deputy Executive Engineer every facility and assistance for ascertaining whether or not the work performed is in accordance with the requirements and instructions of the plans and estimates and the specifications. If so, directed the bidder at any time shall comply and after acceptance of the work remove or uncover any portions of the finished work considered necessary for fresh inspection at his own cost.
3. In order to ensure a proper time sequence for required inspection and approval, the information shall be furnished at least two weeks or (otherwise) as directed by the Deputy Executive Engineer in advance of the use or incorporation in the work of any such materials and this shall be given in writing by the bidder.

6.5 Materials

All Materials shall be new and of the best quality confirming through the relevant I.S.B.S Specifications. They must be the product of reliable manufacture of many years' standings. All like parts of material shall be interchangeable. In case of equipments such as circuit breakers, switch fuses etc. a descriptive and illustrated literature shall accompany the tender. The names of manufactures of various materials shall be furnished in Performa. Sample of materials wherever required should be approved by the Engineer in charge before use in the installation. One set of such approved such samples shall be deposited with the Engineer - in - charge.

(Sign and Seal of the Bidder)

All materials shall be rust-proof or rendered rust proof by application of suitable paints. The supply of all equipments, switchgears etc. shall be complete with accessories, fittings and mountings as may be required for their proper performance, and as specified in the relevant IS-BS code of practice and standards.

6.6 Testing:

The bidder shall be completely responsible for the testing. All test shall carried in the presence of Engineer-in-charge or his authorized representative and approval obtained for the test results. The quality and specifications of material supplied by bidder will be examined by third party inspection or analysis report of Gov. Approve laboratory, if required. The expense for that inspection will be charge from bidder. Its result will be binding to the party.

6.7 Bidder's Ability:

In order to enable the department to access the ability of the bidder to execute to work, the bidder shall furnish evidence of his experience and capacity to carry out the work of magnitude and nature.

6.8 Rates:

The rates of items shall include all taxes, transport, loading and unloading charge and excluding of GST. The rates shall be firm and variation in the market is not entertained.

Signature of Bidder

Sd/-
Deputy Engineer
Light Branch
Jamnagar Municipal Corporation

7. SPECIAL CONDITION OF TENDER

- 7.1 The bidder has to supply necessary electrical materials, as per technical specification in accordance with latest code of IS.
- 7.2 Supply, testing shall be completed within specified time, from the date of acceptance of order. Completion period will be 90 days.
- 7.4 The bidder shall make necessary storage arrangement.
- 7.5 In case of any dispute in the execution, specification term and conditions, the decision of Commissioner, JMC shall be final and binding to the bidders.
- 7.6 The bidder shall submit necessary documents showing experience in similar kind of work.
- 7.7 If the rate for additional, altered or substituted are specified in the contract for the work, the bidder is bound to carry out the additional altered or substituted work at the same rates are specified in the contract.
- 7.8 Audited balance sheet for last three years shall be submitted.
- 7.9 The tender shall remain valid for acceptance for a period of 180 days from the date of opening of the tender. The Bidder shall not be entitled during the said period of 12 days to revoke or cancel his 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 term in regard to thereof the Owner shall forfeit earnest money paid by him along with the tender.
- 7.10 3% S.D. shall be paid within 15 days from the date of LOI or Work Order whichever is earlier. The same shall be released after **FIVE years** from the date of completion of work.
- 7.11 The bidder must pay the EMD and tender fee as given in the notice inviting tenders and attach the DD/pay order of same with the Tender, failing of which the tender is liable to be rejected. The EMD / tender Fee can be paid by DD/pay order/Bank Guarantee in favour of Jamnagar Municipal Commissioner, Jamnagar.
- 7.12 No interest shall be paid on the EMD & S.D .The earnest money deposit of the unsuccessful bidder will be refunded within a reasonable period of time without any interest.
- 7.13 The EMD of successful bidder will be retained towards the S.D for the fulfillment of the contract but shall be forfeited if the bidder fails to execute the agreement within 15 days after letter of acceptance of the tender.
- 7.14 Supply, testing completed within specified time limit. Detail schedule of the supply, erection, testing and commissioning shall along with the Tender. Penalty for the late completion will be at rate of 0.5% of the contract value per week and maximum up to 10% of the Contract Value.

(Sign and Seal of the Bidder)

- 7.15** The rates quoted by the bidder shall inclusive of all taxes and exclusive of GST.
- 7.16** All items of supply and work done should be as per relevant IS/ISI marked as specified accordingly.
- 7.17** The successful bidder 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 bidder to sign the agreement within the above stipulated time period the earnest money or his initial S.D. will be forfeited and the acceptance of the tender shall be considered cancelled.
- 7.18** Conditional tender will not be accepted.
- 7.19** The Price escalation or variation clause will not be accepted.
- 7.20** The Bidder shall take necessary safety precaution. Bidder shall hold responsible if accident/ accidents occurred due to negligence/ carelessness of the bidder.
- 7.21** JMC reserves the right to issue work order in part or full to the successful bidder. Successful bidder has no claim loss of business in this regard.
- 7.22** If safety measures will not be observed by the bidders then criminal actions will be taken against him.
- 7.23** Make "and" Brand with model catalog no. of various items should be clearly indicated by bidder as per specifications of items in to the Tender. Bidder should indicate clearly that which kind of Brand he wants to supply.
- 7.24** The Bidder will have to pay any kind of Tax, levy, excise duty etc. by the state Gov./ Central Gov. for supplying of material as per tender. JMC will not responsible for that tax.
- 7.25** The quantity indicated in the tender is approximate and this will be change during the year and it will be binding to the supplier.
- 7.26** Approved rate of items of the Rate Contract will be ordered in bulk or/and as per requirements and it will be bind to the supplier.
- 7.27** If any kind of loss as well as theft occurs during Unloading -loading before delivery of supplied items, Bidder will be responsible for that.
- 7.28** During Delivery of materials bidder will have to make entry of materials on security gate of JMC and copy of "CHALLAN" or Bill will have to give on the security gate. It will be responsibility of bidder for taking sign and stamp of supervisor /officer of JMC with respect of received goods during site delivery. JMC will not take any kind of responsibility of payment of items without sign & stamp of site supervisor as well as entry at security gate.

(Sign and Seal of the Bidder)

- 7.29** Bidder will have to replace or repair the material during warranty/guarantee period within 72 hours; else JMC will take necessary actions. No extra payment will be paid for that. If not done; JMC will impose Penalty of Rs. 1000/- per day.
- 7.30** Material should be as per specification supplied by bidder
- 7.31** For any dispute related to this tender- contract or agreement, the jurisdiction will be at Jamnagar, Gujarat.
- 7.32** Bidder will have to supply and item as per work order within 45 days from the work order date in general circumstances but for urgent order and emergency circumstances material will have to supply as per work order Time Limit otherwise penalty will be levied from bidder.
- 7.33** No child or under aged labour worker been used by the Bidder.
- 7.34** Third party inspection will be carried out by JMC.
- 7.35** 1% Labour Cess will be deducted in each bills.
- 7.36** Photos will have to submit to the branch by the bidder in each and every stage.
- 7.37** Bidder/ agency have to register themselves with JMC with the registration charges as per norms of JMC after the work order given to the agency by JMC.

Signature of Bidder

Sd/-
Deputy Engineer
Light Branch
Jamnagar Municipal Corporation

8.0 GUIDELINES and ELIGIBILITY CRITERIA FOR BIDDERS

1. **SCOPE OF WORK:** The work is to be carried out on ‘**Turn Key Basis**’ which includes survey, design, supply of SPV systems with all accessories and equipment, metering, installation, testing, commissioning and maintenance services for 5 years, of the JMC’s identified sites with free replacement warranty on spare parts against manufacturing defects for five years. It also includes obtaining permission of concern DISCOM and Chief Electrical Inspector (CEI) approvals. i.e.

- a) Survey of identified sites/ prospective beneficiaries of JMC
- b) Preparation of Detailed Project Report (DPR) of the proposed Proposal of SPV Power Plant.
- c) Registration of the Project on JMC online portal with necessary fees, Obtaining No objection certificate, net metering connectivity agreements from concerned DISCOM for grid connectivity and CEI’s approval and payment of CEI Inspection Chagres, Connectivity charges, Meter charges, Meter testing and SMC box charges etc EXCEPT charges for Strengthening of the DISCOM Network, if required.
- d) The supply of Module cleaning system along with necessary pump sets, water tank, and UPVC pipe line along with required accessories is in bidder scope.
- e) The work covers Design, supply, installation, testing, commissioning and comprehensive maintenance for FIVE years, including grid connectivity charges, meter charges etc.
- f) Design, supply, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given in the work order.
- g) Installation of solar meter and bi-directional meters along with second line of protection in the system such as SPD etc.
- h) Installation of Remote Monitoring facility along with necessary dongle with necessary high speed internet connection etc. for the period of 5 years.
- i) The scope of the work covers cleaning and washing of the Photovoltaic Modules regularly (two times in a month) to ensure annual capacity utilization factor of minimum 15 % during the five years CMC.

2. **TARGETS:** Tender is invited for **Installation of Solar Photovoltaic System on Jamnagar Municipal Corporation** under the JMC Solar PV Programme. The quantum of the work therefore shall be as per the feasibility of the site.

3. Eligibility Criteria:

- a. The Bidder shall be a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto. A copy of certificate of incorporation shall be furnished along with the Bid in support of above. Proprietorship, Partnership firms having valid registration of the firm with the concerned Government authorities, shall also be eligible to participate in the Tender subject to their fulfilling all the terms and conditions given in the document.
- b. The cumulative experience of the Bidder. The Bidder shall have an experience of design, supply, installation, testing, commissioning and Operation & Commissioning of Solar Power projects.
- c. The annual average turnover

(Sign and Seal of the Bidder)

- Average Turnover of the Bidder for last three (3) financial years shall per the Tender evaluation.
 - The Net Worth of the Bidder during the FY 2020-21 or FY 2021-22 shall be positive.
 - The local MSME bidders are exempted from the Net-worth criteria and other than local MSME bidders may submit the Net-worth of FY 2021-22 certified from CA if the bidder's net-worth is inadequate for FY 2019-20 & 2020-21.
4. It is mandatory for all bidders to submit their PRICE-BID only through online (e-tendering). Price Bid submitted in physical form shall not be considered for its opening and only online submitted Price Bid will be considered for evaluation. Bidders to note that Price of those bidders shall be opened (Online/e-tendering) who is found technically qualified and is found reasonably responsive to JMC's Tender terms and conditions and Scope of Works.
5. JMC reserve the rights to accept/reject any or all Bids without assigning any reasons thereof. Bidders are requested to be in touch with above-mentioned websites till opening of the Price Bid to know the latest status.
6. The Bidder shall himself have the following experience and financial strength for the respective system as mentioned in below table:

Sr. No.	Item	The firm should have a minimum cumulative turnover for the last three financial years (i.e., 2019-20, 2020-21, 2021-22).	Bidder shall have experience in the execution of design, supply, installation, and maintenance of Grid-connected SPV systems, having a cumulative capacity spread across India during the last three years (i.e., 2019-20 to 2021-22)	Work order & Certificate/s **of the SNA and the User Agency) regarding past work done satisfactorily, to be submitted along with the Tender. *
1	Grid connected SPV Rooftop systems 200 kW	Rs. 3 Crores	500 kW	One single order should be 500 kWp or above capacity. The reference plant of 500 kWp or above capacity must have been in successful operation for at least 6 months prior to the date of techno-commercial bid opening.

* In view of the pandemic in the month of March 2020, bidders are given an option of providing the Turn over and experience of past three consecutive years either including or excluding of 2019-20, which is to be clearly specified by the bidder and given in CA certificate.

7. **SPECIFICATIONS:** The specifications of SPV systems, for which Tenders are invited, are annexed. The Test Report(s) of each of the components/ systems mentioned shall be uploaded/ attached with the Tender.

(Sign and Seal of the Bidder)

- 8. AFTER SALES SERVICES:** Bidders shall have well established network of service centers within a surrounding to site location. Agency shall meet all the tasks related to the after sales services as per the norms shown above.
- 9.** Bidders will ensure that necessary spares are always available with their service centers to provide necessary after sales service to the customers during the warranty period.
- 10. LOI or INTIMATION:** Letter of Intent (LOI) or Intimation letter shall be issued to the shortlisted Bidders indicating the quantity allocated to them and the security deposit amount to be deposited by them with JMC. Shortlisted Bidders will be required to deposit the requisite security deposit within specified time limit shown in the Letter of Intent or intimation letter, failing which the letter of intent will stand as cancelled. The order will be issued to the shortlisted Bidders only after receipt of requisite security deposit.
- 11. SECURITY DEPOSIT:** Bidders, to whom order is awarded, will be required to deposit security deposit of 3% of total order value awarded to them. The Security Deposit will be accepted in the form of Demand Draft issued by Nationalized Bank in favour of Jamnagar Municipal Corporation or deposit in JMC cash collection window. The Security Deposit can also be submitted in the form of Bank Guarantee issued by Nationalized Bank as per JMC's format with validity of 5 year. The Security Deposit submitted will be retained till completion of the work. No interest will be paid on the Security Deposit. The Earnest Money Deposit of the successful Bidders will be retained as security deposit and will form part of the total security deposit required to be deposited by the successful Bidders.
- 12. Additional Order:** In the event of awarding the order of additional quantity, the Bidders will be required to deposit additional Security Deposit on prorata basis within one week of the issuance of LOI for the additional order quantity.
- 13. TIME SCHEDULE:** It is very critical to complete the work as per the order given by the JMC; so as to complete the work within **90 days** from the date of order. In the event of failure to supply no. of systems as per order, will lead to forfeit of the Security Deposit up to 100% and will lead to disqualification of the Bidders for transacting business with JMC for at least three years or the time duration as may be decided by the JMC. Penalty will also be imposed as per the norms of JMC.
- 14.** The Bidders shall arrange to provide JMC, a SPV instruction manual. The Bidders shall also arrange to impart training about routine maintenance procedure. **Copy of the same must be submitted to JMC with the physical documents.**
- 15. IDENTIFICATION OF BENEFICIARIES:** JMC shall inform the site/ beneficiary to be surveyed along with the order or thereafter.
- 16.** In case of any type of misappropriations, cheating or intention of cheating, frauds, irregularities, malpractice, etc. the JMC reserves the right to cancel the order without giving reasons thereof and forfeit the security deposit.
- 17.** Rates quoted by the Bidders will be inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, **warranties** but exclusive of GST and any/ all charges for successful Supply and Installation of the system at any locations in the JMC and all expenses of marketing, commissions etc,

(Sign and Seal of the Bidder)

insurance of the supplies up to Commissioning of the system and shall be borne by the bidder. Any damages to the supplies before commissioning of the system, irrespective of the reason for such damage, shall be to the account of the supplier.

18. During site inspection by JMC staff / authorised representative, if the systems are found uninstalled and false report of installation and commissioning is submitted to JMC for claiming payment, Commissioner of JMC is empowered to forfeit Security Deposit up to 100% & to terminate the contract.
19. Bidders are required to quote rates inclusive of Comprehensive Maintenance Contract (CMC) for the period of **five years** for the system which include module cleaning. The rates quoted shall be inclusive of charges for providing Routine Maintenance services at the beneficiary's end as per site requirements to ensure smooth and satisfactory performance of the system. Replacement of any components of the system is included in the scope of work of CMC. As per the format given in the bid document quarterly report shall be prepared and submitted to JMC after providing necessary services. The capacity utilization factor (CUF) shall be maintained at minimum 15 % and necessary efforts shall be made to achieve it by the bidder. In case the system fails to attain the required CUF annually, the shortfall of energy to achieve minimum 15 % CUF on the yearly basis shall be compensated by the bidder to JMC at the rate equivalent to the prevailing DISCOM tariff during the year. Failing which JMC may invoke the entire Performance Bank Guarantee. The calculation of CUF shall be on the basis of the generation recorded by the inverter at AC side / Solar system AC meter.
20. After the five years CMC period of system the JMC may extend the O & M period as per mutual consent with the bidder.
21. Training of representative of the beneficiary on the aspect of primary trouble shooting and Do's & Don'ts of the SPV systems, including general operation and maintenance, including lodging complaints & primary reporting.

9.0 TENDER EVALUATION CRITERIA

Offers of only those parties who are found qualifying based of following Tender Evaluation Criteria will be taken in to further consideration and prices of only those parties qualifying based of these criterion will be opened.

FINANCIAL COMMERCIAL

- Earnest Money Deposit and Tender Document Fee in the prescribed form shall be submitted along with the Tender.
- The company shall have supplied PV systems in past three years.
- The Bidder shall be a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto. A copy of certificate of incorporation shall be furnished along with the Bid in support of above. Proprietorship, Partnership firms having valid registration of the firm with the concerned Government authorities, shall also be eligible to participate in the Tender subject to their fulfilling other eligibility criteria in terms of Turn Over, Experience etc. as specified in the Tender.
- Bidder should have the valid Electrical Contractor License (Attach Certificate)
- Average Turnover of the Bidder for last three (3) financial years shall be at least Rs. As mentioned in the table. CA certificate to be attached in original.
- The Net Worth of the Bidder during the FY 2018-19 or 2019-20 shall be positive, wherein the Net Worth shall be calculated as follows:
- Net Worth = (Equity + Reserves) – (Revaluation reserves+ intangible assets + miscellaneous expenses to the extent not written off + carried forward losses).
- The bidder shall submit an ORIGINAL Certificate of the Chartered Accountant / Practicing Company Secretary, certifying the Annual Turn Over for the FY 2018-19, 2019-20 and 2020-21, 2021-22 (Provisional) and also certifying the Positive Net worth of the Bidder” (**Copy of audited annual reports should not be provided**).
- The local MSME bidders are exempted from the Net-worth criteria and other than local MSME bidders may submit the Net-worth of FY 2021-22 certified from CA if the bidder's net-worth is inadequate for FY 2019-20 & 2020-21.
- The Tender of only those bidders will be considered who will produce documentary proofs, and have valid Proof of Permanent EPF account no., ESI registration no. and Good and Service Tax no.

Technical

1. The Bidder himself shall have an experience of design, supply, installation and commissioning of at least one single (not aggregate) grid connected solar power project of Capacity as mentioned in at the table at and aggregate capacity as mentioned in table, Rooftop or Ground Mounted grid connected Solar PV Power Plants, which have been successfully commissioned on or after 01 April 2018.
2. Grid tied Solar Rooftop Project executed in Gujarat for CORPORATIONS, GUVNL, PGVCL and others Government body and Private clients the numbers of the systems and capacity in kW executed by the bidder himself shall be mentioned with **NO SUPPORTING DOCUMENTS** to be attached; however the experience of residential solar roof tops executed by the bidder himself in state, but experience of State and other than Gujarat shall be supported with the Work Order and the certificate of commissioning/certificate of experience issued by the State Nodal

(Sign and Seal of the Bidder)

Agency/Certificate of the Chief Electrical Inspector for energizing /charging of the solar power plant shall be submitted

3. For Grid tied solar power projects executed by the bidder himself in the state other than Gujarat, the list of projects commissioned along with the Work Order and the certificate of commissioning issued by the State Nodal Agency/Certificate of the Chief Electrical Inspector for energizing /charging of the solar power plant shall be submitted.

If required JMC reserves the right to get authenticated the certificate issued by the concern issuing authorities.

Note: Any additional document except mentioned above shall not be submitted with the Tender bid.

Other

1. It is mandatory for successful & Shortlisted bidder to have valid IEC certificates for Solar panels, Invertor as mentioned in the specifications. However, its validity shall be get extended before its expiry, if it gets expired, within the period of the order that shall be placed by JMC i.e. The IEC certification need not be submitted with the Tender.

(IEC 61215-2nd edition and, IEC 61730-2, IEC 61683/IS 61683 and IEC 60068-2 (1,2,14,30) /Equivalent BIS Std)

2. The PV modules must be tested and approved by one of the IEC authorized test centers.
3. Test certificates for the BoS items/ components can be from any of the NABL/ BIS Accredited Testing-Calibration Laboratories/ MNRE approved test centers.

GENERAL

- 1) The party shall have declared, if any relatives working with JMC in Annexure –4.
- 2) As an acceptance of terms and conditions, the document **duly signed and sealed** on every page shall be returned along with the offer. Offers not satisfying any of the above mentioned criteria will be liable for rejection.

(Sign and Seal of the Bidder)

Annexure 2

Details of similar work experience ONLY in last three years as per clause 8.7

(Information to be attached with the Technical Offer)

Sr. No.	Name of the Beneficiary of the Solar Roof Top with full address, phone, fax and name of contact person	Solar system capacity in kW installed and commissioned	Ref. & date of the order	Work Order Value, <u>segregated Year-wise ONLY for past 3 years</u>	Details of order And Commissioning Certificate issued by SNA and user (as applicable)	Page no.
Financial Year - 2019-20						
Total ----->						
Financial Year - 2020-21						
Total ----->						
Financial Year - 2021-22						
Total ----->						

- Copies of Work orders along with Work completion, Commissioning certificate given by the State Nodal Agency (SNA) shall be attached with this information.
- If necessary, separate sheet may be used to submit the information.
- Only relevant documents of last three years shall be submitted giving its page no.
- Those bidders who wish to submit details of 2021-22 can do so instead of 2018-19. Thus turnover of the last three years i.e. 2019-20, 2020-21 and 2021-22 shall be taken in to consideration and shall be acceptable.
- The CA certificate certifying the turnover for consecutive three year, including or excluding 2021-22 as per choice of the bidder.

(Sign and Seal of the Bidder)

Annexure 3

Details of Technical Staff available with the Bidder for execution of work

(Information to be attached with the Technical Offer)

Sr. No.	Name	Qualification	Additional Certification, if any	Total Experience, no. of years	Remarks

- Copies of Resumes and appropriate certifications shall be attached with this information.
- If necessary, separate sheet may be used to submit the information.

(Sign and Seal of the Bidder)

Annexure 4
DECLARATION

(Strike off whichever is not applicable)

This is to declare that Mr. /Ms. _____, employee of JMC at
_____(place), is related to our _____
_____(designation and name).

OR

This is to declare that none of the Proprietors/ Partners/ Directors are having any relatives employed or working with Jamnagar Municipal Corporation at any of its offices.

Date :

Sign. and Stamp of the Bidder

Annexure 5
DEVIATION SHEET

Any deviations offered from the terms and conditions of the Offer shall be clearly specified below in this sheet. If there are no deviations offered, it shall be clearly mentioned on this page.

Deviation offered to Chapter No, Clause No. of the Tender document	Deviation offered

Annexure 6

List of Plant and Machinery

(To be completely filled by the Bidders)

For manufacturing of Solar PV panels (as applicable)

S. No.	Name of equipment	Date of purchase	Date of calibration	Utility

For manufacturing of Inverter (as applicable)

S. No.	Name of equipment	Date of purchase	Date of calibration	Utility

QUARTERLY MAINTENANCE& SERVICING REPORT FORMAT

(To be submitted on end of each quarter)

1. DETAILS OF SOLAR PHOTOVOLTAIC SYSTEM INSTALLED at _____ of _____ kW

1. Supplied by : M/s.
2. Date of Commissioning :
3. Servicing period : From _____ to _____
4. Date of this Report :

2. USER PROFILE

1. Name and address of User :

3. TECHNICAL DETAILS

1. System Capacity, kW :
2. Inverter Output Rating , kW AC :

4. CHECK OF THE SYSTEM

1. Cleaning of dust from SPV panel :
2. Interconnection of modules, PCU etc. :
3. Fuse of distribution boxes, switches :

5. DIFFICULTIES IN OPERATION/ PROBLEM FACED BY USER, IF ANY:

6. DIAGNOSIS DETAILS/ REPAIR ACTION:

7. IS THE SYSTEM WORKING SATISFACTORILY: YES / NO.

If 'NO', please give the reason& remedies.

8. GENERATION READING OF GRID CONNECETD SYSTEMON THE DATE OF THE REPORT:

Metering Point	Last quarter reading (kWh) Date:_____	Present quarter reading (kWh) Date:_____	Difference in kWh	Quarterly CUF (%)
Meter reading at Solar Meter(in kWh)				
Solar generation reading at Inverter (in kWh)				

Formula for Quarterly Capacity Utilization Factor (CUF) =Energy measured (difference in kWh) / (90*24*installed **capacity** of the **plant**)

9. Capacity Utilization factor at the end of the quarter and yearly for the financial year (%)

**User Name & Signature
(with rubber stamp)**

**Technician's Name & Signature
(with rubber stamp)**

Date:

(Sign and Seal of the Bidder)

Appendix I

FORMAT FOR WARRANTY CARD TO BE SUPPLIED WITH EACH SOLAR PV SYSTEM

1. Name & Address of the Bidder
2. Name & Address of Beneficiary Agency
3. Date of Commissioning of the system
4. Solar Roof Top system capacity in kW.
5. Details of PV Module/s
Make of PV Module
Rating in Watts of each Module
Total numbers of modules installed
Serial No(s)
Warranty valid up to
6. Details of Invertor
Make of Invertor
Rated Output of Inverter, kW (AC)
Total number of Inverters
Serial No(s)
Warranty valid up to
7. Designation & Address of the person to be contacted for claiming Warranty obligations.

We hereby provide aforesaid warranty and undertake to replace free of cost the PV MODULES, Invertor if found to be mal functioning due to manufacturing defect.

(Signature)
Name & Designation
Name & Address of the Bidders
(SEAL)

Place & Date:

(During the warranty period State Agencies/users reserves the right to cross check the performance of the systems with the minimum performance levels specified in the specifications).

10. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS FOR GRID CONNECTED SPV SYSTEMS

The proposed projects shall be commissioned as per the technical specifications given below. Any short comings will lead to cancelation of order in full or part as decided by JMC. The specifications, in the GERC Regulation on Net Metering shall also be applicable.

1. DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (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, solar meter, bi-directional energy meter and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and shall be designed with necessary features to supplement the grid power during daytime. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., shall conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipment/components.

- Solar PV modules consisting of required number of **Monocrystalline** PV modules.
- Grid interactive Power Conditioning Unit with Remote Monitoring System.
- Mounting structures.
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories.
- Solar Meter and Bi-directional Energy Meter

a. SOLAR PHOTOVOLTAIC MODULES:

1.1.1 The solar plant shall consist of Monocrystalline panels Wp rating of each panel shall not be less than 380 Wp and having valid IEC certificate. **The SPV modules shall be of INDIAN MAKE.** Necessary documents in this regards must be provided to JMC.

The bidder shall be required to submit the Self declaration, regarding the Modules used under this supply are “**Made in India**”, from the concerned manufacturer of Solar Modules, before commissioning of the System. Such firm and Shortlisted bidder, those violate the requirement of Indian Make of Module shall be put under the black list, and or stop deal list as may be decided by the Commissioner, Jamnagar Municipal Corporation.

ALMM (Approved list of module and Manufactures), the Shortlisted bidder shall have to submit self-declaration regarding domestically manufactured Modules used in the SPV System in this project. Whenever, the ALMM list published by the MNRE, the Model and Manufactures of the Module shall be from the ALMM only used in the SPV System in this project.

(Sign and Seal of the Bidder)

- 1.1.2 The 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/IS14286. In addition, the modules must conform to IEC61730 Part-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.
- a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701
 - b) The total solar PV array capacity shall not be less than allocated capacity (kWp) and shall comprise of solar crystalline modules of minimum **380** Wp and above wattage with module efficiency not less than 19%. Module capacity less than minimum **380** watts shall not be accepted
 - c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
 - d) PV modules must be tested and approved by one of the IEC authorized test centers.
 - e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.
 - f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
 - g) Other general requirement for the PV modules and sub systems shall be the following:
 - I. The rated output power of any supplied module can have tolerance of +/-3%.
 - II. 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.
 - III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of bypass 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-65 rated.
 - IV. I-V curves at STC shall be provided by bidder.
- 1.1.3. The following information must be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).
- a) Name of the manufacturer of the PV module
 - b) Name of the manufacturer of Solar Cells.
 - c) Month & year of the manufacture (separate for solar cells and modules)
 - e) I-V curve for the module Wattage, Im, Vm and FF for the module
 - f) Unique Serial No and Model No of the module
 - g) Date and year of obtaining IEC PV module qualification certificate.
 - h) Name of the test lab issuing IEC certificate.
 - i) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001.

(Sign and Seal of the Bidder)

1.1.4. Warranties:

a) **Material Warranty:**

- i. Material Warranty is defined as: The manufacturer shall warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer")
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials
- iv. 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

b) **Performance Warranty:**

- i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

2. ARRAY STRUCTURE

- a) The mounting structure shall be hot dip galvanized with minimum average 80 microns or shall be pre -galvanized with minimum 80 microns as per relevant BIS standard. Each structure shall have angle of inclination as per the site conditions to take maximum insulation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified capacity utilization factor requirement.
- b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed in Gujarat (200 km/hr). It may be ensured that the design has been certified by a Chartered Engineer. Suitable fastening arrangement such as grouting and calming shall be provided to secure the installation against the specific wind speed. **Bidder has to submit the rooftop MMS Structural stability certificate from the valid License holder structure Engineer as format attached. (Appendix II and III).**
- c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS4759, the mounting structure shall be hot dip galvanized with minimum average 80 microns or shall be pre -galvanized with minimum 80 microns as per relevant BIS standard. The additional cost of the structure required, if any, shall be the part of the bided price
- d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures of proper strength can be used which can withstand the wind speed of respective wind zone; Necessary protection towards rusting need to be provided either by coating or anodization.
- e) The Module fasteners used shall be made up of **stainless steel**. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels

(Sign and Seal of the Bidder)

- f) Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof to avoid damage to the slab of the building.
- g) The total load of the structure (when installed with PV modules) on the terrace shall be less than **80 kg/m²**.
- h) The minimum clearance of the structure from the roof level shall be 2000 mm. and also approval required after the award of the contract to avoid the any shadow on solar panel.
- i) The module mounting structure shall be made of GI medium class pipe (as per IS 1239 and Zinc coating as per IS 4736)/GI Channel/GI square pipe/GI Circular Pipe. The grouting of the structure shall be done by PCC 1:1.5:3, which shall withstand the wind speed of 200 km/hr. 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 2.0 mm.

3. JUNCTION BOXES (JBs)

- a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. 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 JBs shall be such that input & output termination can be made through suitable cable glands.
- b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry; Single /double compression cable glands, provision of earthlings. It shall be placed at **5 feet** height or above for ease of accessibility.
- c) Each Junction Box shall have High quality Suitable Capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- d) 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

4. DC DISTRIBUTION BOARD

- a) DC Distribution panel to receive the DC output from the array field.
- b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCBs shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

5. AC DISTRIBUTION PANEL BOARD

- a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/inverter, and shall have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- b) All switches and the circuit breakers, connectors shall conform to IEC60947, part I, II and III/ IS60947 part I, II and III.
- c) The changeover switches, cabling work shall be undertaken by the bidder as part of the project.

(Sign and Seal of the Bidder)

- d) All the Panel's shall be metal clad, totally enclosed, rigid, air -insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
- e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g) Shall conform to Indian Electricity Act and rules (till last amendment).
- h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions
- Variation in supply voltage : $\pm 10\%$
- Variation in supply frequency : $\pm 3\text{ Hz}$

6. PCU/ARRAY SIZE RATIO

- a) The combined wattage of all inverters shall not be less than rated capacity of power plant under STC.
- b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

7. PCU/ Inverter

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 the power conditioning unit. Inverter output shall be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

- Switching devices: IGBT/MOSFET
- Control: Microprocessor /DSP
- 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.) or Single phase as per consumer requirements.
- Output frequency: 50 Hz
- Grid Frequency Synchronization range: $\pm 3\text{ Hz}$ or more
- Ambient temperature considered: -20°C to 50°C
- Humidity: 95 % Non-condensing
- Protection of Enclosure: IP-20(Minimum) for indoor.: IP-65(Minimum) for outdoor.
- Grid Frequency Tolerance range : ± 3 or more
- Grid Voltage tolerance : -20% & $+15\%$
- No-load losses : Less than 1% of rated power
- Inverter efficiency(minimum): $>95\%$
- THD: $<3\%$
- PF : >0.9

(Sign and Seal of the Bidder)

- a) Single Phase / Three Phase inverter shall be used with each power plant system.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power; inverter shall have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- e) The PCU should be completely compatible with the SPV array voltage and local grid / DG supply voltage.
- f) The power conditioning units / inverters shall 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.
- g) The charge controller (if any) / MPPT units environmental testing shall qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS STD. The junction boxes/enclosures shall be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.
- h) The PCU/ inverters shall be tested from the MNRE approved test centers /NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these shall be approved by international test houses.

8. 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 grid comes into service PV system shall again be synchronized with grid 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 power connection need to be provided, as per regulation.

9. DATA ACQUISITION SYSTEM / PLANT MONITORING

- i. Data Acquisition System shall be provided for each of the solar PV plant.
- ii. Remote Monitoring and data acquisition through Remote Monitoring System software at the site with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the bidder. Provision for interfacing these data on JMC server in future shall be kept.

10. METERING

- a) The solar and bi-directional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy as per guidance of DISCOM.
- b) 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 JMC before commissioning of SPV plant.

(Sign and Seal of the Bidder)

c) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement. Second line of protection such as no volt relay shall be provided with the system as per GERC regulations.

11. POWER CONSUMPTION

a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid at APPC.

12. PROTECTIONS

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

12.1. LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning & over voltage 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 shall be provided as per IEC62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

Lightning arrestor shall be provided for each of the Solar Rooftop installations.

12.2. SURGE PROTECTION

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)

12.3. EARTHING PROTECTION

- i. Each array structure of the PV yard shall be grounded/ earthed properly as per IS: 3043-1987. In addition the lightning arrester/masts shall also be earthed inside the array field.
- ii. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

12.4. GRID ISLANDING

- i. 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 immediately. 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.

(Sign and Seal of the Bidder)

ii. A manual disconnect 4pole 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.

13. CABLES

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

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554, IS7098 standards
- ii. Temp. Range: -10°C to $+80^{\circ}\text{C}$.
- iii. Voltage rating 660/1000V
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
- vi. 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. The cables (as per IS) shall be insulated with a special grade PVC compound formulated for outdoor use.
- vii. Cable Routing/ Marking: All cable/wires are to be routed in a UV protected PVC pipe with minimum 1.5mm wall thickness / GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
- viii. The Cable shall be so selected that it shall be compatible up to the life of the solar PV panels i.e. 25 years.
- ix. The ratings given are approximate. All the cables required for the plant are to be provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons.
- x. Multi Strand, Annealed high conductivity copper cable PVC type 'A' pressure extruded insulation or XLPE insulation in between Inverter to AC Distribution box and Aluminium Armoured cable in between AC Distribution box to main LT Panel. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/equivalent BIS Standards as specified below: BoS 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.
- xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2%.
- xii. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

14. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the GERC regulation for Grid connectivity and norms of DISCOM and amended from time to time.

(Sign and Seal of the Bidder)

15. DRAWINGS & MANUALS

- i. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical datasheets 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.
- ii. Approved ISI and reputed makes for equipment be used.

16. CAPACITY OF SOLAR PV SYSTEM ON THE ROOFTOP

The Solar PV system on the rooftop of the selected buildings will be installed for PV capacity permissible by Discom as per regulation issued by GERC.

17. 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.

18. DISPLAY BOARD

A display board shall be installed with each system of minimum size of 12" X 6" made from GI sheet of minimum **20 SWG**. The display board should be fixed one near to solar meter and one at inverter place. The Text shall include Manufacturer's name and address, Phone, fax and mobile number for immediate contact in case of any failure of systems.

19. DOCUMENTATION

Two sets of installation manual / user manual shall be supplied along with the each power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals. **Module layout drawing and all calculations has to be submitted to the JMC for each site. 4 nos. set of single line diagram and licensed electrical contractors' certificate has to be submitted for each site.**

20. BILL OF MATERIAL

The Bidder shall provide the bill of material for grid connect SPV power plant mentioning the quantity of each of the item consisting in the system, along with the offer.

21. SHADOW ANALYSIS

The shadow analysis of each site has to be carried out by Bidder and shall be submitted to JMC, after placement of work order.

General Conditions: applicable to all the systems.

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

(Sign and Seal of the Bidder)

- The BoS items/components of the SPV power plants/systems deployed must confirm to the latest edition of IEC/equivalent BIS standards as specified below:

BoS item/component	Applicable IEC/equivalent BIS Standard	
	Standard Description	Standard Number
Power Conditioners/Inverters*	Efficiency Measurements Environmental Testing	IEC 61683 IEC 60068 2 (6,21,27,30,75,78)
Cables	General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 V Do-, UV resistant for outdoor installation	IEC 60227/IS 694 IEC 60502/ IS 1554(part I & II) / IS 7098 (Part I)
Switches/ Circuit Breakers/Connectors	General Requirements Connectors -safety	IS/IEC 60947 part I,II,III EN 50521
Junction Boxes/Enclosures for inverter/ charge controller/ luminaries	General Requirements	Enclosures IP 65 (for outdoor)/IP 21 (for indoor) as per IEC 529

*** Must additionally conform to the relevant national/international Electrical Safety Standards.**

All wiring for rooftop and grid connected systems shall be in UV-resistant certified for solar application, concealed in galvanized/ UPVC cable trays with minimum 3 cm clearance from the terrace/ rooftop floor.

22. DOCUMENTATION ON JMC ONLINE PORTAL

The bidder shall be required to apply, process and submit necessary documents as per required by JMC / DISCOM/ CEI on JMC portal and installation and commission shall also be documented by the bidder.

22. OTHER GENERAL INSTRUCTIONS

<u>PARTICULAR</u>	<u>INSTRUCTIONS</u>
Regarding the Thickness of Slab at roof	Approximate thickness of slab is 5-6 inches.
Regarding the waterproofing on terrace	If necessary, Waterproofing of the Terrace will be on the scope of the bidder.
Regarding the angle inclination of the panel to meet specified CUF	Bidder is free to install fixed tilted or seasonal tilted panels as ultimately bidder has to maintain the required CUF.
Regarding the anchor fastener on roof	Installer can use the anchor fastener with the proper C.C foundation.
Regarding the water source and cleaning of panels and cleaning frequency.	The arrangement of required machinery for regular cleaning of the modules shall be in the scope of the bidder. Water will be provided by JMC. Cleaning frequency has already been

(Sign and Seal of the Bidder)

	specified in the tender on page no 25 clause no 1 (i). And if bidder wants to install a sprinkler system for the cleaning then it will be under total supervision of the bidder and with the proper arrangement of the system and water discharge arrangement. If system fails from bidder's side the JMC will impose the penalty.
Payment of charges on DISCOMs and GEDA etc on bidder's scope or JMC	It has already been clarified on the tender page no 51, bidder has to pay all the related charges of DISCOM, GEDA etc.
The cumulative experience of the Bidder or parent company	Cumulative experience of the bidder only will be considered.
Site Visit	Bidder can visit the mentioned sites during office hours and in working days prior to the advance communication and approval from deputy engineer of JMC.
DG set details at JMC	There is One DG set of 750 kVA. 750 kVA DG set is connected at JMC Pump House all the buildings.
In the rarest case of Emergency of climate change	JMC also wish to advice to contractor to check the health of the structure and panel with the consideration of wind speed if wind speed is over than the 100 km/h or at the time of cyclone warning; then bidder must have to do the un-installation and safely storage of panel for safety purpose. And reinstall the whole system after the emergency and check the whole system in running conditions. This process will be totally on the bidder's responsibility; JMC will not pay for this. The time limit for un-installation and reinstallation will be only 24 hours after the JMC's intimation/oral instruction to bidder. If bidder fails to do the same; and if any incident/ fatal incident happen then it will total responsibility of bidder. JMC will not bear any other cost.

Sd/-
Deputy Engineer
 Light Branch
 Jamnagar Municipal Corporation

(Sign and Seal of the Bidder)

Appendix II

Date: DD/MM/YY

To,
Jamnagar Municipal Corporation

Subject: Structural stability, sustainability against wind pressure and safety related aspects of mounting structure deployed in solar rooftops.

Sir/Madam,

<Name of the Company/Firm> (the “Company/Firm”) is SUCCESSFUL BIDDER of JMC for implementation of the solar roof tops programme in Government sector by the virtue of being technically qualified for solar roof top Tender floated by JMC during year 2022-23 (the “Tender”). I, the undersigned <Name>, <Designation>, the Owner of Company/Firm have also agreed to abide by the terms and conditions and the technical specifications of the solar roof top PV system provided in the Tender document.

In accordance with the provision of the Tender, the minimum clearance of the structure from the roof level has been specified as 1200 mm. Further that the structure design shall be such that it withstands the wind speed of 200 kmph and total load of the structure shall not increase 60 kg per square meter and that the thickness of the structure material shall not less than 2.0 mm in case of GI Rectangular / Square / Circular hollow Pipe section and other than above the material thickness should be minimum 2.5 mm.

I/we hereby declare that the module mounting structure and all its components including but not limited to fixing of the solar panels to the structure, welded joints, fasteners, zinc spray, grouting/fixing of the structure to the roof surface etc. installed by us at all the solar roof systems registered with JMC under the Tender, have been designed to provide adequate stability to bear the load and to withstand the wind speed of 200 kmph. Further I/we certify that I/we have ascertained and vetted the design of the structure ourselves and by a Structural Engineer to ensure stability and safeness of each of the installation to sustain the wind pressure throughout the lifespan of the installation.

In this regard, we have also obtained the certificate of the Structural Engineer for the installation at <Name of Site> Capacity <KW> regarding the stability of the structure and its strength to sustain a wind speed of 200 kmph. The copy of the certificates of the Structural Engineer is attached herewith.

(Sign and Seal of the Bidder)

I/we further undertake and assure you that the structural stability of the module mounting structure including all the components installed by us at above mentioned site is our responsibility throughout the life span of the solar rooftop PV system.

I/We also absolve JMC of any such responsibility of the safety and the stability of the structure and the solar panels, whatsoever that may arise during the lifespan of the solar roof top PV system.

Thanking you,

Yours faithfully,

Signature

Name

Designation

Stamp of the Company/Firm

Encl: Certificates of the Structural Engineer

Appendix III

On the letter head of the Structural Engineer

To WHOSOEVER IT MAY CONCERN

The undersigned, a Structural Engineer/ FIRM, registered with *<Name of the registering/licensing authority> (registered with any of the Municipal Corporation/ Municipality, Urban Development Authority)* and having valid License/Registration Number *<_____>*. The undersigned has analyzed the design of the mounting structure of the solar roof top PV system and its fixing with i) the roof surface and ii) the solar panels, installed by M/s. *<Name of the bidder>* at the address mentioned below.

Address of the Installation: *<Name of the beneficiary>*

<Address #1>

<Address #2>

<City>

<JMC Registration Number>

Upon satisfying myself on the analysis of the design of the mounting structure of the solar roof top PV system and its fixing with i) the roof surface and ii) the solar panels, I hereby certify that the design of the mounting structure installed at the above-mentioned address meets the strength and stability of the mounting structure to withstand the wind speed of 200 kmph and is safe throughout its life span.

This Certificate is issued on the request of *<Name of the Supplier of SPV System>*.

Name of the Structural Engineer	:	
Signature of the Structural Engineer	:	
Stamp	:	
Date	:	

(Structure drawing along with the structure design, part drawing, assembly drawing duly signed and approved to be submitted for each site to be attached)

(Sign and Seal of the Bidder)

Appendix IV

DECLARATION FOR NOT BLACK LISTED OR TERMINATED OR DEBARRED

Note: The Declaration submitted earlier to this office will not be considered as such a fresh Declaration shall have to be done as on the mile stone dates of this tender document

(Declaration to be submitted on Non-Judicial Stamp Paper of Rs. 300/-)

DECLARATION

I/We hereby declare that I/ We am/ are not partner(s) black listed or terminated or debarred or connected with firm black listed or terminated or debarred in any States, CPWD/ MES / Railways or any Government, Semi-Government or Private body. Also, no complaint is lodged against the Firm/ Company.

At present I/We am/are registered as approved contractor(s), firms in____State, CPWD/MES/Railways.

We, the partners/ owners of this firm, hereby give an undertaking that we are jointly and severally responsible to meet all the liabilities ever and above the business of this firm and make good the above financial loss sustained by the JAMNAGAR MUNICIPAL CORPORATION as a result of our abandoning the works entrusted to us.

Signature of

Bidder with seal:

Date:

(Sign and Seal of the Bidder)

Appendix V

Project completion Report for SPV Photo-Voltaic (PV) System by the Contractor (Submitted after the completion of the installation and in working condition)

Sr. No.	Component	Observation
1	Name of the Building	
	Site/Location with Complete Address	
	Longitude/Latitude	
2	Capacity of system installed(kWp)	
3	Specification of the Modules	
	Type of modules(multi/mono)	
	Make of manufacturing 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	RFID tag is pasted inside or outside	

(Sign and Seal of the Bidder)

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 standalone	
	Whether indigenous or imported	
	Enclose test certificate as per MNRE 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	Earthing and protections	

(Sign and Seal of the Bidder)

	Lightening Arrester(Type)	
9	Detail of Weather Monitoring System(If Installed)	
10	Solar Generation Meter & Bi-directional Meter No, import & Export Reading.	

Declaration

It is to certify that all the components/subsystems and materials including junction boxes, cables, distribution boards, switches, circuit breakers used are as per TENDER requirement.

(Solar Company signature and stamp)

Signature of Bidder with seal:

Date:

FINANCIAL BID GUIDELINES

- Rates quoted by Bidder will be FOR destination prices inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, connectivity charges, meter charges etc; excluding GST, and any/ all charges for successful Supply and Installation of the systems at any locations in the JMC, with charges of five year CMC.
- The rates quoted by the Bidder will be inclusive of any other taxes applicable to such work and exclusive of GST. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by the JMC. Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.
- In no circumstances, escalation in the prices will be entertained.
- Your rates are to be submitted as per the enclosed Performa of schedule of rates **(online only). Physical submission of price bid will disqualify the Bidder.**
- The scope of the bidder shall include besides the cost of the total system with Domestic module, with five years O & M charges, regular cleaning of the modules, submission of the Quarterly report in the format as specified at Page No. 33 of the Tender as specified, DISCOM connectivity charges, Bi-directional meter charges, Inspection fees of CEI, if any, shall be included in the cost to be quoted.

Sd/-
Deputy Engineer
Light Branch
Jamnagar Municipal Corporation

Price Bid (online only)
The rates mentioned are per kW of system capacity

Sr. No.	Item	System Unit rate per kW (in Rs.)
1	Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M. (Rates are must be quoted in Rs. Per kilo Watts only.)	(Submit online only)

NOTE: The rates are to be quoted in Rs./ kW i.e Rs. /1000 Watts.

Estimate:

Name of Work: Annual Rate Contract for Supply, Installation, Testing and Commissioning of Grid-connected rooftop solar power plant System on Pump House Filter Plant of JMC with related comprehensive Electrical, Mechanical & Civil Work including all necessary equipment with 5 (Five) years comprehensive O&M under 15th Finance Commission

<u>Sr. No.</u>	<u>Particular</u>	<u>Approx. Estimated Cost</u>
01	<p>Grid Connected Solar Rooftop photovoltaic System Cables, Wirings, Transformer, DP Structures and other procedure expenses Included</p> <p>As per of Pump House of JMC buildings (03 Nos.) Approx. kilo Watts of buildings roof</p> <p>(1) Pump House Sump Area=205 kW (2) Filter Plant Building-1= 43 kW (3) Filter Plant Building-2=37 kW</p> <p><i>Approx. Total = 285 kW</i></p>	<p>So, 285 kW x 46507/- = Rs. 1,32,54,495/- Say Rs. 1.35 Cr. (Excluding of GST)</p> <p>(Solar panel module+ inverters + BoS + I&C + Transportation)</p> <p>i.e. Rs. 46507/- per kilo watts were approved by St. Committee of JMC by Reso. No. 1122, Dt. 07/10/2022</p>
Approx. Total Estimated Project Cost.		Rs. 1.35 Cr.

Sd/-
Deputy Engineer
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 Jamnagar Municipal Corporation

ABBREVIATIONS AND FULL FORMS

<u>Particular</u>	<u>Full Form</u>
JMC	Jamnagar Municipal Corporation
CUF	Capacity Utilization Factor
SLD	Single Line Diagram
CEI	Chief Electrical Inspector
MNRE	Ministry of New & Renewable Energy
IEC	International Electrotechnical Commission
ALMM	Approved List of Module and Manufactures
SPV	Solar Photo Voltaic
EMD	Earnest Money Deposit
RPVC	Rigid Polyvinyl Chloride
DISCOM	Distribution Companies
CMC	Comprehensive Maintenance Contract
DIC	District Industries Centre
NSIC	National Small Industrial Corporation
MSME	Ministry of Micro, Small & Medium Enterprise
DGS&D	Directorate of General Supplies & Goods
CSPO	Certified Scrum Product Owner
LOI	Letter Of Intent
DPR	Detailed Project Report
SMC	Sheet Moulding Compound
SPD	Surge Protective Device
SNA	State Nodal Agencies
GUVNL	Gujarat Urja Vikas Nigam Ltd.
PGVCL	Paschim Gujarat Vij Company Ltd.
ESI	Employees State Insurance
BoS	Basic Operating System
NABL	National Accreditation Board for Testing and Calibration Laboratories
PCU	Power Conditioning Unit
MPPT	Maximum Power Point Tracker
RFID	Radio Frequency Identification
STC	Standard Test Condition
GRP	Glass Reinforced Polymer Composite Pole
FRP	Fiber Reinforced Plastic
EPDM	Ethylene Propylene Diene Monomer
MOV	Metal Oxide Variastor
DPB	Distribution Panel Board
ACDB	Alternative Current Distribution Board
IGBT	Insulated-Gate Bipolar Transistor
MOSFET	Metal-Oxide-Semiconductor Field-Effect Transistor
XLPE	Cross Linked Poly Ethylene Cable
GERC	Gujarat Electricity Regulatory Commission
CEA	Central Electricity Authority of India

(Sign and Seal of the Bidder)