

DNIT

FOR

**DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING INCLUDING WARRANTY AND 10 YEAR
MAINTENANCE OF 70 KW GRID TIED ROOF TOP SOLAR PV PLANT ON
THE BUILDING OF MUNICIPAL CORPORATION, MOHALI.**

**MUNICIPAL CORPORATION, MOHALI
Sector-68, Mohali, Punjab**

IMPORTANT DATES

LAST DATE FOR DOWNLOADING THE TENDER : 28-07-2015 upto 12:00 Noon
LAST DATE FOR SUBMISSION OF TENDERS : 28-07-2015 upto 5:00 PM
PRE BID MEETING : 16-07-2015 at 12:00 Noon
OPENING OF TECHNICAL AND COMMERCIAL BIDS: 29-07-2015 at 11:00 AM
OPENING OF FINANCIAL BIDS : 30-07-2015 at 11:00 AM

PUNJAB ADMINISTRATION
MUNICIPAL CORPORATION SAS NAGAR MOHALI, PUNJAB

SCOPE OF WORK

Design, manufacture, supply, installation, testing and commissioning along with warranty and operation and maintenance of 10 years for 70 KW grid interactive roof top Solar PV Plant at Municipal Corporation of Mohali located in Sector 68, Mohali.

- a. A complete set of bidding document in English may be purchased from www.etender.punjabgovt.gov.in through online payment of non-refundable fee of Rs. 1000/-
- b. Bid must be submitted through e-tender up to 5.00 PM on date 28-07-2015. All bids must be accompanied by earnest money deposit of Rs. **1,55,000/-** late bids will be rejected. Bids will be opened in the presence of bidder's representative who chose to attend at the address below at 11:00AM on date 29-07-2015. The details are given below

1	Name of Office	: Municipal Corporation, Mohali
2	Postal Address	: Municipal corporation SAS Nagar, Sector-68, Mohali
3	Telephone Nos.	: 5044911,5044910
4	Fax No. Tele Fax	: 5044913
5	Date of commencement of sale of tender doc	:-----
6	Last date & time for receipt of bids	:28-07-2015 at 05:00 PM
7	Time and date of opening of technical bids	: 29-07-2015 at 11:00 AM
8	Time and date of opening of price bid	: 30-07-2015 at 11:00 AM
9	Estimated Cost	: 77.50 Lacs
10	Time Limit	: 3 Month from date of placement of order

- a. The bidding shall be in two parts pattern. Technical Bid and Financial Bid: Technical bid will contain the qualifying requirement and the financial offer will contain the offered price

TENDER NOTICE
PUNJAB ADMINISTRATION
MUNICIPAL CORPORATION SAS NAGAR MOHALI, PUNJAB

e- Tender Notice

E-Tender are hereby invited by Municipal corporation, Mohali from the manufacturer of SPV module/System integrators having specific experience of supply, installation, testing and commissioning of SPV plant to be uploaded on the www.etender.punjabgovt.gov.in and mcsasnagar@gmail.com

Scope of work	Design, manufacture, supply, installation, testing and commissioning along with warranty and operation and maintenance of 10 years for 70 KW grid interactive roof top Solar PV Plant at Municipal Corporation of Mohali located in Sector 68, Mohali.
Cost of tender document	Rs. 1000/-
Estimated cost	77.50 Lacs
Earnest Money Deposit	Rs. 1,55,000/-
Time Limit	3 Month from date of placement of order
Pre Bid Meeting	16-07-2015 At 12:00 Noon
Download of e-tenders document	28-07-2015
Date of submission of e-tenders	28-07-2015
Last date of submission of EMD, cost of tender document, hard copy of eligibility documents required for post qualification including signed and stamped copy of DNIT & all other necessary documents as uploaded in e-Bid	28-07-2015
Opening of technical bid	29-07-2015
Opening of price bid	30-07-2015

1. The DNIT with detailed terms and conditions can be downloaded/ Uploaded by the bidders from the website of <https://etenders.punjabgovt.gov.in>.
2. The tender document should be uploaded.
 - i) **Bid -1** : Shall contain Earnest Money along with cost of DNIT to be submitted online on e-tendering website from upto 05:00 PM on 27-07-2015.
 - ii) **Bid- 2** : Shall contain post qualification documents such as Annual Financial turnover and completion certificate of work & Technical Specifications
 - iii) **Bid -3** : The price bid for each item shall be uploaded separately.
3. The earnest money should be Online in favour of the Commissioner, Municipal Corporation SAS Nagar.
4. **The Bid -1** shall be opened on 29-07-2015 at 11:00 Hrs. and the firm should upload the tender document upto 05:00 PM on 28-07-2015.
5. **The Bid -2** shall be opened only of those bidders whose earnest money will credit in MC account
6. **The Bid -3** shall be opened of those contractors who will be found technical qualified for that item of the **work**. The date of opening Envelope 3 shall be intimated on line after approval of technical bid from the competent authority.
7. The Bidders should upload in Electronic Format on the website scanned copies of eligibility documents shall also be uploaded along within the prescribed time limit.
8. The firm should submit a signed and stamped copy of the DNIT and all other documents duly signed and stamped as uploaded Online on Website by **1700 HRS on 28-07-2015**. The Agency has to produce the original documents as and when asked for by Officer. The failure of the Agency to furnish the said original documents will entail summarily rejection of its tender.
9. Meeting for scrutiny of technical bid and eligibility criteria shall be held as mentioned against the works in the office of Corporation Engineer, Municipal corporation, Mohali.
10. The acceptance of a tender will rest with the Competent Authority who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all the above conditions, tenders without assigning any reason thereof. All tenders in which the above conditions are not fulfilled will be rejected.
11. Conditional tenders are liable to be rejected.
12. Incomplete tenders shall liable to be rejected.
13. The contractor shall be required to sign the contract agreement within ten days of the

intimation of the acceptance of tender to him. Failure on his part to do so may result in invalidation of the contract and forfeiture of the security and earnest money.

14. MINIMUM ELIGIBILITY CONDITIONS

The bidder should be:

- i) A Registered Company registered with Registrar of Companies office, Ministry of Corporate Affairs, Govt. of India
- ii) The bidder company must have minimum C category MNRE-Rating for registering itself as a Channel Partner of the Ministry as a System Integrator/ manufacturer/ solar power developers or applied for the same.
- iii) The bidder must have installing of

Single order of same nature of work of Grid tied roof top Solar pv Plant for 80% of the Project capacity.

OR

Two order of same nature of work of Grid tied roof top Solar pv Plant for 60% of the Project capacity.

OR

Three orders of same nature of work of Grid tied roof top Solar pv Plant for 40% of Project capacity.

Proof of execution of grid connected system with copy of certificates of satisfactory completion and performance from an authority for whom the work was executed including agreement amount, actual amount, date of start, date of completion.

- iv) The authorized share capital/ net worth of the bidder company should be minimum Rs.2 crore as on 30.04.2015
- v) The firm should have service centre in or around Chandigarh within a radius of 50 KM with qualified staff.
- vi) The firm should have authorization from the manufacturer of the PCU (Inverter) and SPV Module.
- vii) The SPV modules to be used should be made in India.

The firm will submit the following documents in respect of above criteria.

- a) The bidder should upload affidavit/ certificate from CA mentioning authorize share capital/net worth of Bidder Company along with the technical bid.
- b) Detail of personnel employed including technical staff.
- c) Detail of machinery tools, plants for manufacturing.
- d) Detail of service centre after sale of service equipment with telephone facility.

- e) Authorization of the manufacturer of PCUs as per Performa attached
 - f) Documentary proof for SPV modules being manufactured in India.
 - g) The firm should also upload an Undertaking on its letterhead that all the terms and conditions of the DNIT are acceptable to the Bidder.
 - h) Certificate of registration of sale tax/ VAT, EPF and service tax and acknowledgment of up to date filed return if required
15. The tender shall remain valid for 3 month from the date of opening of the price bid.
16. The tenderer shall quote the rate both in figure as well as in words.
- 17. Instructions to Bidders regarding e-tendering process**
- a) Tenders without digital signatures will not be accepted by the Electronic Tendering System. No tender will be accepted in physical form and in case it has been submitted in the physical form it shall be rejected summarily.
 - b) Before submission of online Bids, Bidders must ensure that scanned copied of all the necessary documents have been uploaded with the Bid.
 - c) It will be mandatory for all the Bidders to upload all the documents mentioned under „Tender Detail“, template read under ‘Cover Details’.
 - d) The applicants should upload a pdf sheet indicating the description as mentioned under Cover Details and by mentioning „Not Applicable“ in the body of the document as the tender uploading process cannot be completed until and unless all the documents mentioned under the „ Cover Details“ have been uploaded.
 - e) Municipal corporation, Mohali will not be responsible for any delay in online submission of the Bids due to any reason whatsoever.
 - f) Municipal Corporation has full rights to accept or reject any or all the tenders without assigning any reason thereof.
18. For any technical issue related to Electronic Tendering Portal, bidders may contact Municipal corporation SAS Nagar, Mohali, Sector-68, Punjab or email at mcsasnagar@gmail.com , Phone No. 0172-5044910,5044911.
19. No additional documents will be accepted after opening of the technical bid on due date. The sole criteria of qualification / disqualification will depend on the documents uploaded by the bidders.
20. Any material / instrument required to complete/ successful running of the project which is not mentioned in the DNIT will be provided by the party in the quoted rates only.
- 21. The bidder should fill the cost break up form placed at Annexure- I and load it along with the financial bid.**
22. It is mandatory to upload scanned copies of all the documents including service tax registration/VAT registration/Sales Tax, EPF registration as stipulated in the bid

document. If such document is not uploaded this bid will become invalid and cost of bid document & processing fee shall not be refunded.

23. If the contractor is found ineligible after opening of bids, his bid shall become invalid and cost of bid document and processing fee shall not be refunded.
24. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the contractor the bid shall become invalid and cost of bid document and processing fee shall not be refunded
25. The work may be increased or decreased in the interest of Project without assigning any reason thereof.

Commissioner
Municipal Corporation, Mohali

Technical Bid

Name of the Work:

Design, manufacture, supply, installation, testing and commissioning along with warranty and operation and maintenance of 10 years for 70 KW grid interactive roof top Solar PV Plant at Municipal Corporation of Mohali located in Sector 68, Mohali with the following site details:

1	Location /Site details for the SPV Power Project:	
i)	Address of Site	Municipal corporation building, SAS Nagar , Sector-68, Mohali
ii)	Roof top	As per site available
iii)	Solar isolation level	
Iv)	Ambient Temp	45 ⁰ C
	Max	4 ⁰ C
	Min	
v)	Latitude	
vi)	Longitude	
	Elevation	
	Tilt Angle	
	Feeding Point	
	Note Sr, No. ii above, BIDDER MUST VISIT THE SITE BEFORE QUOTING THE RATES , OTHERWISE IT WILL BE ASSUMED THAT THE PARTY HAS ALREADY VISITED THE SITE BEFORE QUOTING THE TENDER, AN UNDERTAKING TO BE FURNISHED ACCORDINGLY	

1. Solar Photovoltaic Modules

The total solar PV array capacity should not be less than 50 KWp .i.e. Output as 50 KWp after inverter on max. Radiation day and should comprise of solar mono / multi crystalline modules of minimum 250Watts. The Photovoltaic modules must be tested **& approved by one of the IEC authorized test centres , Test Certificates can be from any of the NABL / BIS accredited testing / calibration laboratories** the module type must be qualified as per IEC 61215(Second Edition). In addition PV modules must qualify to IEC 61730 Part I to II for safety qualification testing. PV modules must qualify Salt Mist Corrosion Testing as per IEC 61701. SPV module conversion efficiency should be greater than 16% under STC.

IDENTIFICATION AND TRACEABILITY

Each PV module must use a RF identification tag (RFID), which must contain the following information:

- Name of the manufacturer of PV Module
 - Name of the Manufacturer of Solar cells
 - Month and year of the manufacture (separately for solar cells and module)
 - Country of origin (separately for solar cells and module)
 - I-V curve for the module
 - Peak Wattage, I_m , V_m and FF for the module
 - Unique Serial No and Model No of the module
 - Date and year of obtaining IEC PV module qualification certificate
 - Name of the test lab issuing IEC certificate
 - Other relevant information on traceability of solar cells and module as per ISO 9000 series.
- I. The PV module shall perform satisfactorily in humidity up to 100 % with temperature between (-) 10 deg. C to + 85 deg. C. Since the modules would be used in a high voltage circuit, the high voltage insulation test shall be carried out on each module and a test certificate to the effect provided.
- II. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 12 years and 80% at the end of 25 years
- III. Other general requirements for the PV modules and subsystems shall be the following:
- a. Raw materials and technology employed in the module production processes shall not be considered relevant so long as the given specifications are satisfied.
 - b. The rated output power of any supplied module shall not have negative tolerance.
 - c. 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 more than 3 (three) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
 - d. Except where specified, the front module surface shall consist of impact resistant, low-iron and high-transmission toughened glass.
 - e. The module frame, if any, shall be made of a corrosion-resistant material which shall be electrolytic ally compatible with the structural material used for mounting the modules.
 - f. The module shall be provided with a junction box with provision of external screw terminal connection and with arrangement for provision for by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points of may be of sealed type.
 - g. Necessary I-V curves are required to be furnished along with the SPV modules.

2. ARRAY STRUCTURE

PV PANEL STRUCTURES

- a. Wherever required, Suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design with combination of I, C and L sections as per structure design requirement.
- b. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Galvanizing should meet ASTM A-123 hot dipped galvanizing or equivalent which provides at least spraying thickness of 70 microns as per IS5909, if steel is used
- c. Aluminum extruded frame structures with adequate strength and in accordance with relevant BIS standards can also be used with proof that the design of the structure can withstand the wind speed of 150 km per hour.
- d. The Structure shall be made out of either Galvanized steel or Aluminum member as per design to be submitted by firm. The structures shall be designed to allow easy replacement of any module.
- e. Each structure should have angle of inclination as per the site conditions to take maximum insolation.
- f. Each panel frame structure be so fabricated as to be fixed on the rooftop column/wall structures. The structure should be capable of withstanding a wind load of 150Km/hr after grouting & installation. Grouting material for SPV structure shall be as per M15 (1:2:4) concrete specification.
- g. The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the supplier shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of Goods.
- h. The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;
 - i. Determination of true south at the site;
 - ii. b) Array tilt angle to the horizontal, with permitted tolerance;
 - iii. c) Details with drawings for fixing the modules with Sizes.
 - iv. d) Details with drawings of fixing the junction/terminal boxes with Sizes
 - v. e) Interconnection details inside the junction/terminal boxes with Sizes
 - vi. Structure installation details and drawings with Sizes.
 - vii. Electrical grounding (earthing);
 - viii. Inter-panel/Inter-row distances with allowed tolerances; and
 - ix. Safety precautions to be taken
- i. The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the rooftop columns properly. All nuts and bolts shall be of very good quality stainless steel except foundation bolts which will be of MS(GI

Coated) . Detailed design and Drawing shall have to be submitted to Engineer in charge for acceptance and approval before execution of work.

- j. No damage in any way should be caused to the building while installation of SPV Power Plant. If any damage done it will wholly be the responsibility of the bidder and cost shall be recovered from the bidder.
- k. The design of structure to be installed should be approved from Engineer in charge.

3. GRID CONNECTED INVERTERS (SOLAR INVERTORS)

The solar inverters totaling not less than 50 KVA should be provided to convert DC power produced by SPV modules, in to AC power. A multi function power conditioning system combining the functionality of a grid interactive solar inverter with a highly efficient conversion unit having following

Technical Specification:

Output voltage	: 3 phase, 415 V ac (+12.5 %, - 20 % V ac)
Frequency	: 50 Hz \pm 1 Hz
Continuous rating	: Not less than 50 KVA (as per system capacity)
DC input Operating range	: 0 V to 400V nominal
Total Harmonic Distortion	: less than 3 %
Operating temperature Range	: 0 to 55 deg C
Housing cabinet (indoor)	: PCU to be housed in suitable cabinet, in case of IP54 IP 65 for outdoor applications.
Inverter efficiency	: >98 % at full load.

Other important Features/Protections required in the PCU

- Authentic tracking of the solar arrays maximum power operation voltage (MPPT).
 - Array ground fault detection.
 - LCD and piezoelectric keypad operator interface Menu driven
 - Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
 - MOV type surge arresters on AC and DC terminals for over voltage protection from lightning-induced surges.
 - PCU should be rated to operate at 0 to 55 deg. Centigrade above ambient temp
 - All parameters should be accessible through an industry standard communication link.
 - The PCU should go in sleep mode when there is no grid supply.
 - Reduce Active Power (P) on demand.
 - Supply Reactive Power (Q) under normal operation conditions.
 - Dynamic Grid Support - FRT (Fault Ride Through).
 - LVRT (Low Voltage Ride Through).
- I. The PCU shall include appropriate self protective and self diagnostic features to protect itself and the PV array from damage in the event of PCU component failure or from parameters beyond the PCU's safe operating range due to internal or external causes. The

self-protective features shall not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the PCU, including commutation failure, shall be cleared by the PCU protective devices and not by the existing site utility grid service circuit breaker. The PCU shall go to shut down/standby mode, with its contacts open, under the following conditions before attempting an automatic restart after an appropriate time delay; in sufficient solar power output etc.

a) Insufficient Solar Power Input.

When the power available from the PV array is insufficient to supply the losses of the PCU, the PCU shall go to a standby/shutdown mode. The PCU control shall prevent excessive cycling during rightly shut down or extended periods of insufficient solar radiation. The power conditioning units / inverters should be applicable IEC/ equivalent BIS standard for efficiency measurement and environmental testing as per standard code IEC 61683 and IEC 60068 2(6,21,27,30,75,78). The junction boxes/ enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 62208 specifications. Imported power conditioning units should be approved by international test houses. Party must supply and upload the test report of PCU /inverter along with the tender document.

b) Utility-Grid Over or Under Frequency The PCU shall restart after an over or under frequency shutdown when the utility grid voltage has returned to the within limits for minimum of two minutes.

- II. The PCU generated harmonics measures at the point of connection to the utility services when operating at the rated power shall not exceed a total harmonic current distortion of 3 percent, a single frequency current distortion of 3 percent and single frequency voltage distortion of 1 percent, when the first through the fiftieth integer harmonics of 50 Hz are considered.
- III. The PCU Power factor at the point of utility service connection shall be 0.95 lagging or leading when operating at above 25 percent of the rated output, but may be less than 0.95 lagging below 25 percent of the rated output.
- IV. Full protection against accidental open circuit and reverse polarity at the input shall be provided.
- V. The PCU shall not produce Electromagnetic Interference (EMI) which may cause malfunctioning of electronic and electrical instruments including communication equipment, which are located within the facility in which the PCU is housed.
- VI. The PCU shall have an appropriate display on the front panel to display the instantaneous AC power output and the DC voltage, current and power input. The display shall be visible from outside the PCU enclosure. Operational status of the PCU, alarms, trouble indicators and ac and the dc disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front cover of the PCU enclosure.
- VII. **Electrical safety, earthing and protection:**

- a) **Internal Faults:** In built protection for internal faults including excess temperature, commutation failure, overload and cooling fan failure (if fitted) is obligatory.

- b) Galvanic Isolation: Galvanic Isolation is required to avoid any DC component being injected into the grid and the potential for AC components appearing at the array.
 - c) Over Voltage Protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients.
 - d) Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system.
 - e) Cabling practice: Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contact. The PVC Cu cables must be run in GL trays with covers for protection.
 - f) Fast acting semiconductor type current limiting fuses at the main bus-bar to protect from the grid short circuit contribution.
- VIII. The PCU shall include an easily accessible emergency OFF button located at an appropriate position on the unit.
- IX. All exposed surfaces of ferrous parts shall be thoroughly cleaned, primed, and painted or otherwise suitably protected to survive a nominal 30 years design life of the unit.
- X. The PCU enclosure shall be weatherproof and capable of surviving *climatic changes and should keep the PCU* intact under all conditions in the room where it will be housed. In case of String Invertors, it will be installed as per the manufacturer design for which prior approval will be taken from the Municipal Corporation. Moisture condensation and entry of rodents and insects shall be prevented in the PCU enclosure.
- XI. Operating Modes:**
The following operating modes are to be made available:
- Night or Sleep mode :** Where the inverter is almost completely turned off, with just the timer and control system still in operation, losses should not exceed 2 watts per 5 kilowatt.
- In case of Grid Failure, the PCU should go in sleep mode/ turned off immediately.**
- Standby mode:** Where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 20 watts)
- Operational or MPP tracking mode :** The control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner must automatically re-enter stand-by mode when input power reduces below the standby mode threshold. Front Panel display should provide the status of the PCU, including AC Voltage, Current, Power output & DC Current, Voltage and Power input, Battery voltage , pf and fault Indication (if any)

XII. Metering

- i) PV array energy production: Digital Energy Meters to log the actual value of AC/ DC Voltage, Current & Energy generated by the PV system shall have to be provided.
- ii) Solar Irradiance: An integrating Pyranometer (Class II or better) should be provided, with the sensor mounted in the plane of the array. Readout should be integrated with data logging, system.
- iii) Wind Speed: An integrated wind speed measurement unit be provided.
- iv) Temperature: Temperature probes for recording the Solar panel temperature and ambient temperature.
- v) Class(0.5), bidirectional Energy meter be provided, along with necessary CTs/PTs

All major parameters should be available on the digital bus and logging facility for energy auditing through the internal microprocessor and can be read on the digital front panel at any time the current values, previous values for up to a month and the average values. The following parameters should be accessible via the operating interface display.

- AC Voltage
- AC Output current
- Output Power
- DC Input Voltage
- DC Input Current
- Time Active
- Time disabled
- Time Idle
- Temperatures (C)
- Inverter Status

Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage, Over voltage delay, Under voltage delay over frequency, Ground fault delay, PV starting delay, PV stopping delay).

4. DC DISTRIBUTION BOARD

DC Distribution panel to receive the DC output from the array field with analog measurement panel for voltage, current from different MJBs so as to check any failure in the array field. It shall have MCCBs of suitable rating for connection and disconnection of array sections. DCDB shall be fabricated from CRC Sheet from enclosure of dust & vermin proof.

5. COMMON AC DISTRIBUTION PANEL BOARD(ACDPB)

- I. Common AC Distribution Panel Board (DPB) shall control the AC power from inverter. AC Distribution panel (ACDP) should consist of MCCB as incomer and suitable numbers of MCCB out going switches. The panel should be provided 3 Phase copper bus bar of suitable capacity.
- II. Common AC DPB shall have the arrangement for measuring all electrical quantities such as Voltage, Current, Frequency, of different feeder line & energy supplied to the different

feeder.. Common AC DPB shall have sheet iron enclosure of dust & vermin proof & shall have adequate cooling arrangement. The bus-bars are to be made of copper of desired size. Design & Drawing is to be submitted before manufacturer assembly on installation for obtaining necessary approval from Engineer-in-Charge.

6. CABLES

- a. ISI marked PVC insulated Armored Copper Cond. Cable of various sizes as per load requirement for connecting all the modules / arrays to Jn. Boxes and from Jn. Boxes to DC distribution box and from DC distribution box to inverter. Copper/ Aluminium Cables of appropriate size from Inverter onwards in A.C. side 32
- b. Cabling in the yard and control room: Cabling in the yard shall be carried out as per IE Rules. Cabling inside control room and array area should be in cable pipes with proper water/moisture protection sealing. All other cabling above ground should be suitably mounted on cable trays with proper covers.
- c. Wires: Only copper wires of appropriate size and of reputed make shall have to be used. However aluminium cables can be used on A.C side of transmission.
- d. Cables Ends: All connections are to be made through suitable cable/lug/terminals; crimped properly & with use of Cable Glands.
- e. Cable Marking: All cable/wires are to be marked with proper manner by good quality ferule or by other means so that the cable can be easily identified. All the Cu/Al. PVC or XLPE insulated Armd. Sheathed cables required for the plant will be provided by the manufacturer. All cable schedules/layout drawings have to be got approved from the purchaser prior to installation.

7. LIGHTNING PROTECTION

There shall be the required number of suitable lightning arrestors installed in the array area. Lightning protection shall be provided by the use of metal oxide arrestors and suitable earthing such that induced transients find an alternate route to earth. Protection shall meet the safety rules as per Indian Electricity Act.

8. EARTHING PROTECTION

Each array structure of the PV yard should be grounded/ Earthing properly as per IS:3043-1987. In addition the lightning arrester/masts should also be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant should be thoroughly grounded in accordance with Indian electricity Act./IE Rules. Earth Resistance should be tested in presence of the representative of Department after earthing by calibrated earth tester. PCU ACDB and DCDB should also be earthed properly.

9. COMPREHENSIVE MAINTENANCE

All the equipments (Except SPV Modules for which the guarantee period is 25years) shall be provided with comprehensive Maintenance for 10 years against unsatisfactory performance and/or break down due to defective design, workmanship of material. The equipments or components, or any part thereof, so found defective during Comprehensive Maintenance period shall be forthwith repaired or replaced free of cost to the satisfaction of the Engineer-in-charge.

10. SCOPE OF OPERATION & MAINTENANCE OF SPV POWER PLANT FOR A PERIOD OF 10 YEAR FROM DATE OF COMMISSIONING

Regular operation & maintenance of the SPV Power Plant for a period of ten years after commissioning along with supply of consumable items as and when necessary and submission of daily performance dates of the power plant shall come, under the operation & maintenance contract.

The break down maintenance of the entire system including supply of necessary spare parts, if any, are already under the coverage of warranty clause of the specific condition for a period of 120 months from date of commissioning of power plant. The operation and maintenance schedule of the SPV power plant during the 10 years contract period shall be as detailed below :

- a. 10 years operation and maintenance period shall begin on the date actual commissioning for the power plant. Every week manual checking and inspection is required from vendor.
- b. The deputed personnel shall be qualified and well trained so that they can handle any type of operation hazard quickly and timely.
- c. The deputed personnel shall have to keep daily log sheet for the power plant as per format to be supplied after commissioning of the power plant.
- d. The deputed personnel shall be in a position to check and test all the equipment regularly, so that, preventive actions, if any, could be taken well in advance to save any equipment from damage. Any abnormal behaviour of any equipment shall be brought to the notice of Engineer-in-Charge immediately for appropriate action.
- e. Normal and preventive maintenance of the power plant such as cleaning of module surface, tightening of all electrical connections etc.
- f. During operation & maintenance period of ten years of the power plant, if there is any loss or damage of any component of the power plant due to miss management/miss handling or due to any other reasons, what-so-ever, the supplier/firm shall be responsible for immediate replacement/rectification. The damaged component may be repaired, if it is understood after examination that after repairing performance of the component shall not be degraded, otherwise the defective component shall have to be replaced by new one without any extra cost.
- g. List of Spare parts & measuring instruments are to be supplied along with the systems.

11. Operation & Maintenance Instructions :

- I. The successful bidder shall furnish before three months prior to completion of the works, 4 copies of operating and maintenance instructions in English for approval and supply 5 sets of the approved manuals of instructions at the time of inspection and taking over of the equipment. These manuals shall properly bound in book form and contain all information, description of equipment, diagram etc., necessary to enable the customer to operate and maintain the whole scheme.

- II. Proper Operation & maintenance of the plant shall be carried out by the contractor during O&M period of 10 years with 6 monthly review checkups of plant and equipment in detail with purchaser/ department.
- III. Properly qualified and trained personnel well versed in O& M of SPV plants and knowledge of computers with approval from purchaser shall be deployed at site for operation & maintenance.
- IV. Proper repainting, re coating of exposed surfaces to prevent rusting & replacement of worn out parts shall be carried out along with the maintenance of the PCU.
 - Plant personnel shall be deputed on such basis so that a qualified/trained person with a minimum Technical qualification (Diploma in Engineering) should be available at site always during the operation & maintenance period.
 - Supplier shall depute on engineer of their company for the operation and maintenance of the plant who shall be fully responsible for the complete O&M and optimum operation of the plant. The name and contact nos. of this engineer shall be notified to the purchaser, for the purpose of contact, responsibility and correspondence with regard to all trouble shooting.
 - Plant operation reports in a format prescribed by the purchaser shall be furnished by the supplier on a weekly and monthly basis.
 - Plant shall be operated as per the standard IER practices to ensure proper safety measures.
 - The supplier shall ensure replacement of worn out parts and components during the operation & maintenance period for which purpose the supplier shall carry and maintain minimum inventory levels of spares at the plant and at its works.
 - Round the clock maintenance (routine, preventive, breakdown and capital maintenance) of complete plant and equipments including ,
 - SPV Array, PCU, SCADA system with dedicated telephone lines shall be carried out by the supplier in accordance with manufacturer's instructions, manufacturers procedures, relevant safety codes, Indian Electricity Act, Indian Electricity Rules, purchaser's instructions, prudent utility practices etc.
 - In case of any fault, the fault must be removed within 24 hours failing which a penalty of Rs. 1,000/- per day shall be charged. However, under Force Majeure circumstances penalty can be waived off.

SPECIAL TERMS AND CONDITIONS

a) The following instructions must be carefully observed by all the tenderer. Tenders not strictly in accordance with these instructions shall be liable to be rejected.

- i. The rates shall be quoted in figure as well as in words. The amount of each item shall be worked out and the requisite total given
- ii. Telegraphic tenders shall not be accepted.
- iii. The department reserves the right to modify the schedule of requirements, technical particulars and the specifications at any time and to place the order as a whole or in parts, and to reject any or all the tenders without assigning any reasons. The Department will not be responsible for and will not pay for expenses for losses that may be incurred by tenderer in the preparation of the tenders.
- iv. The successful tenderer shall be called upon to enter in an agreement on prescribed form. The contract would be of the nature of individual work contract and Municipal Corporation is not bound to issue Form D etc which is not subject to any sales tax or furnishing of Form D by the Municipal corporation
- v. The Engineer-in-charge reserves the right for any omission/correction in the Notice inviting tender.

b) PRICE

The price quoted shall be on turnkey basis and should be inclusive of all duties and taxes except **service tax**. Sales-tax / VAT, purchase tax, turnover tax or any other tax on material in respect of this contract shall be payable by the Contractor and Government/Municipal corporation will not entertain any claim whatsoever in respect of the same

c) The tenderer shall acquaint with the work and working conditions at site and locality. No claim shall be entertained on this issue after the offer has been submitted. Once the firm has submitted the bid, it shall be presumed that they have inspected the site and work conditions.

d) The unit rate of the equipment and accessories listed in schedule of requirement shall include the followings. The tenderer must quote for each item contained in the schedule of requirement

- a. Cost of material/equipment.
- b. All charges for containers and packing.
- c. All Charges necessary to effect free delivery of material/equipment and other T&P items at the work site including loading and un loading of equipment at site.
- d. All charges such as freights, insurance, customs, excise clearing charges etc.
- e. Sales Tax or any other tax on equipment/T & P's covered in scope of work.
- f. Erection Charges in respect of all items required to complete the entire work under each item.

e) **Inspection:-**

- a. The Department may inspect the Equipments / Materials at the manufacturer's premises before dispatch of the material at its own cost. However, the contractor has to arrange

facilities for inspection of equipment/ material including conducting the required tests in the manufacturing units without any extra cost.

- b. In case of any critical equipment (PCU/Inverter) being manufactured in country other than India then the contractor has to arrange factory test report duly attested on each page by manufacturer of the critical component. The PCU/Inverter shall be tested from MNRE approved test centres like Solar Energy Centre (SEC, Gurgaon), ERTL (East, West, North) or CPRI (Banglore) TUV RHEINLAND etc. if the facility of same is available in such centres at the time of commissioning of solar power plant. Otherwise the same shall be tested at the time of “ Third Party Inspection”(TPI).
- c. In order to have technical control and quality assurance the “ Third Party Inspection”(TPI) shall be done from the outside agency by the department at its own cost. However, the bidder has to provide all necessary help and support in getting the third party inspection carried out at site after installation and commissioning of the system.
- f) No claim on account of fluctuation in prices due to any reason shall be considered.
- g) The work shall be completed to the entire satisfaction of the officer.
- h) The firm has to strictly follow the fair wage clause
- i) **COMPLETION PERIODS**
The time allowed for completion of work shall be 3 months from the written order to commence the work. However the firm will quote the minimum time and period of completion.
- j) **COMMISSIONING:-**
The complete SPV Power Plant will be deemed to have been completed and commissioned when each of the sub-system is individually commissioned, tested and after concluding the satisfactory performance of the same.

12. GUARANTEE :

The SPV module shall be guaranteed life of 25 years and all other equipments shall be guaranteed for a period of 10 years from the date of taking over the installation by the Department against unsatisfactory performance and/or break down due to defective design, workmanship of material. The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith replaced free of cost to the satisfaction of the Engineer in Charge. In case it is felt by the department that undue delay is being caused by the firm in doing this, the same will got done by the department at the risk and cost of the firm. The decision of the Engineer in Charge in this regard shall be final.

13. EARNEST MONEY DEPOSIT & TENDER FEE

(a) EARNEST MONEY DEPOSIT

- i) The tender should be accompanied with earnest money for the value of Rs. 50,000 /- (Rupees fifty thousands only) online in Commissioner, Municipal Corporation Mohali account.
- ii) EMD of unsuccessful tender shall be returned after award of the rate contract. No interest will be paid on the earnest money.

14 PAYMENT TERMS

The payments shall be made as per the following terms and conditions:

- i) 70% of the ordered value after the supply of the complete system at site supported with material receipt issued by user. (The contractor shall raise bill of 70% of the ordered value after the supply of the complete system at site, duly certified by the concerned officer of MC, Mohali as per the technical specification and terms and conditions specified in the work order.
- ii) 20% of the ordered value after installation and commissioning.
- iii) 10% after 60 days from the date of installation and commissioning supported with performance report duly signed by concerned officer of MC, Mohali.

15 PERFORMANCE/ WORK ORDER SECURITY DEPOSIT

- b) The successful bidder shall submit performance security deposit @ 5% of the work order value within 15 days from the date of placing the work order in the form of DD or BG valid for Ten year and the same shall be released after completion of Operation and Maintenance of the Plant.
- c) This work order security may be forfeited in case of non-execution of work against the work order placed and the firm shall be blacklisted for future as per Govt. norms.

16 INSPECTION OF MATERIAL

The material shall be dispatched by the supplier after inspection by the MC, Mohali or his representative at his premises and acceptance of the same.

The supplier shall give pre-dispatch inspection notice of at least 15 days prior to the last date of supply of material.

In case the material offered for inspection fails to meet the specifications stipulated in DNIT /Order /Contract and the material is rejected by the Inspecting Committee, the Indenting Office will have the right to levy a penalty at 0.1% of the order value. In case the material offered for inspection fails during the 2nd inspection also, the Indenting office will have the right to increase the penalty to 0.25% of the order value. In case, the material offered fails during the 3rd and final inspection also, the firm will be liable for penal action including forfeiture of EMD, risk purchase, debarring/blacklisting in future, and no further opportunity for inspection will be provided to the supplier firm.

17. VALIDITY OF BID

The bids shall be valid for a period of two months from the date of opening of tender. MC. Mohali may ask to the bidder(s) to extend the validity, if necessary..

18 WARRANTY

- a. The supplier shall affirm as per standards for quality that anything to be furnished shall be new, free from all defects and faults in material, workmanship and manufacture, shall be of the highest grade and consistent with established and generally accepted standards for material of the type ordered, shall be in full

conformity with the specifications, drawing or samples, if any and shall if operable, operate properly.

- b. Performance of Equipment: In addition to the warranty as already provided, the supplier shall guarantee satisfactory performance of the equipment and shall be responsible for the period or up to the date specified in sub-clause (iii) hereof after the equipment has been accepted by the MC, Mohali to the extent for any defects that may develop such defects shall be removed at his own cost when called upon to do so by the MC.Mohali
- c. The Contractor in consultation with concerned MC, Mohali will conduct training programme for users, focusing on main features, operation and maintenance of the systems. After successful supply/commissioning of the system and training and completed period of Operation and maintenance the system will be handed over to the person designated by the end user.
- d. The Contractor/supplier shall continue to provide spare parts after the expiry of warranty period at the users cost. If the contractor fails to continue to supply spare parts and services to users then MC, Mohali shall take appropriate action against the firm.
- e. The Warranty period shall be 25 Years for the PV modules and 5 years for complete system including PCU/Solar Inverter from the date of commissioning of the system. The contractor shall rectify defects developed in the system within Warranty period promptly. The procedure to rectify the complaint/service to be provided during warrantee period is follows as:

During the warrantee period, the firm shall ensure proper functioning of the systems and complaint, if any, forwarded to the supplier against the system, will have to be attended within 5 days of forwarding such complaints. The procedure to rectify the complaints shall be as under:

- i. The notice through E-mail/hard copy to rectify the complaints shall be issued by the User to the supplier . This shall be followed by two reminders on 3 days intervals each.
- ii. Even after this, the complaints remain unattended the penalty @ Rs. 100.00 per day per Kwh will be imposed & same will be deducted from the payment due to the supplier / out of the Performance Security Deposit/ bank Guarantee. The firm if failed to repair/ replace the defective system within next 5 days after expiry of the earlier Penalty will be Rs. 200 per day complaint then MC, Mohali may consider repairing / replacing such defective system on the cost of the supplier. The firm who shall be penalized by revoking PSD/Bank guarantee shall deemed to be consider as unfit to participate in all the tenders floated by MC,Mohali in future and shall be treated as unsatisfactory performer.
- c) If the whole PSD/ bank guarantee is utilized and the complaints are still pending then a online/hard copies request will be sent to the firm to attend the complaint within 15 days.

- d) If still the firm shall not attend the complaint within the above mentioned period then the firm may be blacklisted and a legal proceeding may be initiated against the firm for Breach the agreement.

19 TIME SCHEDULE, PENALTY/LIQUIDATED DAMAGES

These systems are to be supplied within two months time from the date of issue of work order and installation & commissioning are to be completed within one month time from the date of supply of material at site. The project is to be completed within three months time. The request of supplier for extension in time frame for supply, installation and commissioning of the systems shall not be entertained under any circumstances except in case of force majeure.

The time of delivery or dispatch stipulated in the supply order shall be deemed to be the essence of the contract, and should the contractor fail to offer inspection of material/ deliver or dispatch any consignment within the period prescribed for such delivery or dispatch stipulated in the supply

order, as mentioned in clause no 8, the delayed consignment will be subject to penalty per consignment @ 2.0% per month and delay in installation and commissioning will be subject to penalty per consignment @ 1.0% per month subject to maximum deduction of 10% of the delayed services recoverable on the value of the stores supplied. Once the maximum is reached, the MC,Mohali may consider termination of the contract. In case of non-payment of the contractor, recovery will be made from his bills or amount of Earnest money or security deposited with MC,Mohali, provide also that :

- (a) No recovery of penalty will be made if the Officer accepts the delayed supplies by extending the delivery period up to two weeks by recording in writing that the exceptional circumstances were beyond the control of the supplier and there was no loss to the Government.
- (b) Whether the delay on the part of the supplier is of more than two weeks, the matter for extension of delivery period will be referred by the Officer to the MC, Mohali with a certificate that there are genuine reasons for delay on the part of the supplier and no loss will result to the MC.Mohali. In case extension in delivery period is allowed the case will be decided on merits by the MC,Mohali,. In case the delivery period is amended, no penalty for supplies made during the extended period will be recovered from the supplier.
- (c) On the failure of the suppliers to make supply within the extended period or otherwise and the receipt of such information in the office of the MC,Mohali, risk purchase at the cost of the supplier will be made by the MC,Mohali within two months of the expiry of stipulated delivery period by inviting short terms quotations from the Registered and other known suppliers. The difference of excess cost thus, incurred will be recovered from the supplier from his pending bills, earnest money or security whichever is available.
This procedure will be adopted after serving a registered notice to the supplier to supply stores within 15 days.
- (ii) The Contractor shall not;
 - (a) Sublet the work under this contract or any substantial part thereof to any other party. MC, Mohali shall have at all reasonable time access to the works being

carried out by the contractor under this contract. All the work shall be carried out by the contractor to the satisfaction of MC, Mohali.

- (b) disclose details of the conditions governing this contract to unauthorized persons (Indenting against this contract is permissible only for the bonafide use of Governments departments and quasi public and not for private parties or for the private use of the Government officers).
- (iii) In the event of the contractor failing duly and properly to fulfill or committing breach of any of the terms and conditions of the tender or repeatedly supplying goods liable to rejection hereunder or failing, declining, neglecting/ or delaying to comply with any demand or requisition or otherwise not executing the same in accordance with the terms of this tender, or if the bidder or his agents or servants being guilty of fraud in respect of the contract or any other contract entered into by the contractor or any of his partners or representatives thereof with Government directing, giving, promising or offering any bribes, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise to any person in the employment of Government in any way relating to such officers or person of persons, office or employment or if the contractor or any of his partners become insolvent or apply for relief as insolvent debtor or commence any insolvency proceedings or make any composition with his/ their creditors or attempts to do so then without prejudice to Government rights and remedies otherwise, MC, Mohali shall be entitled to terminate this contract forthwith and to blacklist the contractor and purchase or procure or arrange from Government's stocks or otherwise at the contractor's risk and at the absolute discretion of the MC, Mohali as regards the manner, place or time of such purchases, such supplies as have not been supplied or have been rejected under this agreement or are required subsequently by Government thereunder and in cases where issues in replacement are made from Government's stocks or supplies, the cost of value of stocks or supplies together with all incidental charges or expenses, shall be recoverable from the contractor on demand and the contractor shall not be entitled to benefit from any profit which may accrue to Government.

20 FORCE MAJEURE:

The bidder shall be under no liability if he is prevented from carrying out any of his obligations by reasons of war, invasion, hostilities (whether war declared or not), riots, civil commotion, mutiny insurrection, rebellion, revolution, accident, earthquake fire, floods, Govt. orders and/or restrictions (except power supply restriction), delay or inability to obtain materials due to import or other statutory restrictions or other cause beyond the reasonable control of the bidder. However, such force majeure circumstances are to be intimated immediately and to be established subsequently with proper documents/proofs to the entire satisfaction of MC.

21 ARBITRATION

Dispute Resolution: Any dispute, difference or controversy of whatever nature between the Bidder/Successful Bidder and MC S.A.S. NAGAR shall be settled as per the dispute resolution procedure set below:

- (a) Direct discussion between Parties

The Bidder/Successful Bidder and MC S.A.S. NAGAR agree that any Dispute that may arise between them shall be first submitted for direct discussion between the Parties. For this purpose, the notice of Dispute (the "Notice of Dispute") sent by one Party to the other Party under (a) shall be considered an invitation for direct discussion,

and it should specify a reasonable time and venue for the conducting of negotiation proceedings. In addition, the Notice of Dispute shall specify the basis of the Dispute and the amount claimed. In the direct discussion proceedings, each Party shall be represented by their representatives/officials or employees with sufficient knowledge and authority over the subject matter of the Dispute in order for the discussion to be meaningful. At the discussion proceedings, the Party that has given the Notice of Dispute shall present an offer of a settlement, which may form the starting point of discussions between the two Parties during the discussion proceedings.

(b) Arbitration or Adjudication

a. In the event that the parties are unable to resolve the Dispute through Direct Discussion under Clause (a) provided above, the Parties shall submit the Dispute for arbitration in accordance with the Arbitration and Conciliation Act, 1996. There shall be a Board of 3 (three) arbitrators of whom 1 (one) shall be appointed by the MC S.A.S. NAGAR, 1 (one) shall be appointed by the Bidder/Successful Bidder and the third shall be appointed by the 2 (two) arbitrators appointed as aforesaid.

b. The arbitrators shall make a reasoned award, and any award made pursuant to this point (b) shall be final and binding on the Parties as from the date on which it is made, and the Bidder/Successful Bidder and the MC S.A.S. NAGAR agree to undertake to carry out the award without delay.

c. The arbitration proceedings shall be conducted in the English language and in S.A.S. Nagar (Mohali) only.

d. The cost incurred on the process of arbitration including inter alia the fees of the arbitral tribunal and the cost of the proceedings shall be borne by the Parties in equal proportions. Each Party shall bear its own legal fees incurred as a result of any Dispute under this clause.

e. The rights of the parties shall remain in full force and effect, pending the award in any arbitration proceeding here under. During the bidding process no dispute of any type would be entertained. Even in such cases where MC S.A.S. NAGAR asks for additional information from any Bidder, the same cannot be adduced as a reason for citing any dispute.

22. DISPUTE RESOLUTION & JURISDICTION OF COURT

For the purpose of dispute resolution, this agreement shall be governed by the provision of Arbitration and Conciliation Act, 1996. Any disputes arising out of this contract shall be sorted out within the jurisdiction of Mohali Punjab only.

PROCEDURE FOR FINALIZATION OF WORK ORDERS & THEREAFTER:

1. First the Commercial & Technical part shall be opened on 28-07-2015 at 1100 AM in the Office of MC, Mohali at Sector-68, Mohali in the presence of tenderers of their authorized representative who chose to attend the meeting and thereafter technical bid shall be evaluated.
2. Then Price bid part of only those tenderers, whose offer technically and commercially acceptable after evaluation will be opened in the presence of tenderers of their authorized representative who chose to attend the meeting. The date to open the price part will be informed separately.

13 SUBMISSION OF TENDER

- i) Sealed tender should be submitted in two parts i.e. **Part-I (technical and commercial)** and **part-II (price part)** in the Annexure-3 The firm should submit their offers in two separate sealed envelopes, marked on one envelop as “Part-I “Technical and Commercial Part” and on other envelope as “ Part-II: Price Part”. These envelopes should again be sealed in a covering envelope along with forwarding letter, super scribed on top with

“OFFER FOR DESIGN,SUPPLY, INSTALLATION AND COMMISSIONING OF
70 KW GRID TIED SOLAR PV PLANT AT MC,MOHALI

- ii) Offer should be addressed to the Corporation Engineer, MC Mohali.
- iii) MC,Mohali shall resume no responsibility for misplacement or pre-mature opening of any part of tender, in case of above instructions or not complied by the tenderer.
- iv) Any offer received after the deadline for submission of offers shall be rejected and returned unopened to the tenderer.
- v) All the pages of tender documents, technical specifications, bids, supporting documents etc. shall be indexed, numbered and duly signed by the authorised signatory and company seal should be affixed or each page. Any part of the tender which is not specifically signed by the authorized signatory and not affixed with company seal shall not be considered for the purpose of evaluation.
- vi) The offers should be signed and sealed by the tenderer or his authorised representative. The names and designation of all persons signing shall be typed or printed below the signature.
- vii) Failure of furnish all information and documentary evidence as stipulated in the tender document or submission of an offer i.e. not substantially responsive to the tender document in all respects shall be summarily rejected.

14. DOCUMENTS TO BE ENCLOSED WITH THE OFFER

Part-I & Part-II of the tender should comprise the following documents:

i) Technical & commercial Part-I

The technical & commercial Part: Part-I of tender shall be offered and furnished complete in all respect strictly as per Check list at Proforma-II along with all requisite Annexure and Proforma and their attached documents.

ii) Price part: Part-II

- a) The price of solar power plant of each capacity in full and complete set including all parts inclusive of supply, installation, commissioning, packaging, transportation, FOR , all taxes & levies, octroi, VAT, EPF etc. should be quoted in Annexure-2 and bill of material in 2 (A) (price part).
- b) Price shall remain firm and fixed. Price variation clause is not acceptable.
- c) Any conditional discounts on the prices offered will not be entertained / considered.
- d) Offers should be quoted in lump sum inclusive of all taxes till the execution of the project and conditional offers with taxes will be rejected out rightly.

15. OTHER TERMS AND CONDITIONS

- (i) The offer shall be submitted online on website, conditional tender and tender not accompanied by EMD shall not be accepted.
- (ii) The price quoted should include all taxes and duties, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, Trade Tax/VAT, Income Tax, Surcharge on income tax etc. if any. A supplier/ contractor shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the contractor. If any new tax/duty is levied during the contract period the same will be borne by the firm exclusively. TDS will be deducted from the payment of the contractor as per the prevalent laws and rules of Government of India and Government of Punjab state in this regard.
- (iii) In the event of bid being submitted for a firm, it must be signed separately by each members thereof, or in the event of the absence of any partner, it must be signed on his behalf by a person holding a Power of Attorney authorized him to do so. In case of a company, the quotation should be executed in the manner laid down in the said Companies Article of Association. The signature on the quotation should be deemed to be authorized signatures.

All columns of the technical and financial bid shall be duly filled in and there shall be page numbering of bid document, the rates shall not be overwritten and be both in figures and words. All corrections must be signed by the tenderers.

- vi) Material shall be strictly as per DNIT specifications. If there is any left out specification, the same

shall be considered as per the MNRE specification.
- (vii) All disputes relating to this work shall be subject to the jurisdiction of Mohali.
- (viii) The make of module, batteries and PCU should be strictly as per the make mentioned in the technical form detail and test reports submitted along with the offer. For variation of any make, test report of the same is to be provided with prior approval of MC, Mohali.
- (ix) The Commissioner, MC, Mohali will have the right of rejecting all or any of the quotation without assigning reason thereof.
- (x) In case of any ambiguity in interpretation of any of the clauses/ provision of the said rate contract/DNIT, the decision of the MC, Mohali shall be final and binding.
- (xi) It shall be the sole responsibility of the contractor to get verified the quality & quantity of the supplied material at the site of delivery.
- (xii) The Contractor shall indemnify the MC, Mohali against all third party claims of Infringement of patent, royalty's trademark or industrial design rights arising from use to the goods or any part thereof.
- (xiii) Contractors, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Contractor shall be held responsible for all damage due to in proper packing.
- (xiv) The contractor shall inform the MC, Mohali of the date of each shipment from his works, and the expected date of arrival at the site for the information of the concerned project offices at least 7 days in advance.

- (xv) All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor.
- (xvi) The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, shall be included in the bid price.
- (xvii) MC, Mohali may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the MC, Mohali
- (xviii) MC, Mohali may by written notice sent to the supplier, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of MC, Mohali
- (xix) The Price bid part is to be submitted in a separate sealed envelope indicating on the top of envelope Part –II, Price Bid in the Part-11 Format attached with tender document.
- (xx) The Techno-commercial part should also contain BOM format
- (xix) To assist in the examination, evaluation and comparison of bids the MC, Mohali may at its discretion ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing.
- (xx) At any time prior to the submission of the tender or prior to the opening of the financial bid the MC, Mohali may, for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the Tender documents by amendments.
- (xxi) The quantity of supply mentioned in the DNIT is tentative which can be increased or decreased.
- (xxii) The Technical Specifications to be followed is attached as Annexure - Technical Specification.

16. DECLARATION BY THE BIDDER

I/We (hereinafter referred to as the Bidder) being desirous of tendering for the work under the MC, Mohali tender no. and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document, DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document.
2. The Bidder is capable of executing and completing the work as required in the tender.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the tender.
4. The Bidder has no collusion with other Bidder, any employee of MC, Mohali or with any other person or firm in the preparation of the bid.
5. The Bidder has not been influenced by any statement or promises of MC, Mohali or any of its employees, but only by the tender document.
6. The Bidder is financially solvent and sound to execute the work.
7. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of MC, Mohali.
8. The information and the statements submitted with the tender are true.
9. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
10. The Bidder has never been debarred from similar type of work by MC, Mohali and or Government undertaking/ Department.
11. This offer shall remain valid for acceptance for 12 Months from the date of opening of the tender.
12. The Bidder gives the assurance to execute the tendered work as per specifications terms

- and conditions.
13. The Bidder confirms the capability to supply and install more than Systems/capacity in a year.
 14. The quote to supply the goods and materials specified in the underwritten schedule in the manner in which and within the time specified as set forth in the conditions of contract at the rates given in the financial bid.
 15. The terms and conditions of tender will be binding upon bidder in the event of acceptance of their tender online. The enclosed Earnest Money /performance security deposited by bidder shall be forfeited by the MC,Mohali if the bidder fail to execute the work order released by MC,Mohali..

(Signature of Bidder)

with SEAL

PROFORMA-I

Format for forwarding/covering letter

(To be submitted by tenderers on the official letterhead of the company)

Dated:

No.

To

The Corporation Engineer,
Municipal Corporation, Mohali
Sector-68, Mohali, Punjab

Subject:- **Offer in response to Notice Inviting Tender No.3208 for the rate contract of supply, installation & commissioning of 70 KW Grid tied roof top Solar PV power plant at MC Building in Mohali.**

Sir,

We hereby submit our offer in full compliance with terms & conditions of the above tender. A blank copy of the tender, duly signed on each page is also submitted as a proof of our acceptance of all specifications as well as terms/ Conditions.

We confirm that, we have the capability to supply and install more than
.....KW capacity PV Systems inmonths.

The tender is submitted in two separate and sealed envelopes marked Part-I &
Part-II.

(Signature of Bidder)

With Seal

Performa-II

Check list of Annexures

(The following information/documents are to be annexed and indexed by the Bidders along with the BID)

S.No	Annexure No	Particulars	Yes/No, Flag No.
1.	Annexure-I	Details of Earnest money	
2.	Annexure-II	i)The bidder is a Registered Company/ Corporation Registered in India (enclose copies of ROC certificate and MOA copy) ii) MNRE Grading rating iii) Has installed a grid tied single plant of 10 KW capacity or more. certificate indicating its successful execution upto the said condition to be enclosed in Proforma-III)	
3.	Annexure-III	A copy of the Certificate for solar module battery, PV System Electronics i.e. PCU tested as per MNRE, GOI latest guidelines “minimal technical requirements.	
4.	Annexure-IV	A copy of valid CST /State VAT/ TIN/EPF registration certificate	
5.	Annexure-V	A summarized sheet of cumulative experience and orders in hand for grid and off grid solar solar pv plants to be enclosed in Proforma-IV)	
6.	Annexure-VI	Overall Average Annual Turnover /Net worth of the Company/ Corporation in the last two financial years (A summarized sheet of turnover of last two Financial Years as per format in Proforma-V)	
7.	Annexure-VII	MNRE accredited off- Grid Channel Partner/ Programme Administrator OR Credit Rating (from MNRE Accredited Rating Agency) of “SP 3C” and above	
8.	Annexure-VIII	Details of grid connected MW scale work order in hand; (Attach copies of work order/ LOI)	
9.	Annexure-IX	The bidder has ISO 9001/ ISO 14001 certification	
10.	Annexure-X	Authorization letter of the Bidder, for the person representing his firm, that he is authorized to discuss and with specific mention of this tender as per Clause17(iii).	
11.	Annexure-XI	General information about bidder as filled in Proforma-VIII	

12.	Annexure- XII	Technical Details Form for make and test of various component of Solar power plant of Bidder as filled in Proforma-VI.	
-----	------------------	--	--

* Please flag the annexure and write flag number in the box.

Note: The bid may be submitted strictly as per checklist, Annexure and proforma prescribed otherwise the bid may be ignored.

(Signature of Bidder)

With Seal

PROFORMA- V

**INFORMATION IN SUPPORT OF MEETING ESSENTIAL ELIGIBILITY
CONDITIONS REGARDING ANNUAL TURNOVER/NET WORTH OF THE
BIDDER IN LAST TWO FINANCIAL YEAR**

Name of the Firm _____

Address

Contact Number _____

S.No.	Financial Year	Turn Over (Rs. In lacs)
1.	2013-14	
2.	2014-15	
	TOTAL	

II) Authorised share capital
of the company(Attach ROC
letter/ Approval)

III) Net Worth of the
company; (Attach CA
certificate)

Signature with seal

Name _____

M.No. _____

PROFORMA-VI

GENERAL PARTICULARS OF BIDDER

1	Name of firm	
2	Postal Address	
3	Telegraphic address	
4	Telephone, Telex, Fax No	
5	E-mail	
6	Web site	
7	Name & designation of the authorized signatory to whom reference shall be made	
8	Present activities/business of the firm i. Module Manufacturer ii. Battery Manufacturer iii. PCU manufacturer iv) PV System Integrator	
9	Type of organization - Private Ltd. Company - Public Ltd. Company - Other category	
10	. registration number TIN No & State of billing	
11	EMD of Rs. 1,55,000/-	Attached/ not attached
12	Tender fee of Rs. 1000/-	Attached/ not attached

Annexure; Technical Specification

Technical Specifications Sheet.

Bill of Material			
Sr.No	Items/Materials	Numbers	Make & Specifications
1	Solar PV modules		
2	Grid Tied Solar PCU/ inverters		
3	Module Mounting structure		
4	LT Panel		
5	Cables from modules to inverters		
6	Cables from inverter to LT Panel		
7.	ABT Energy Meter		
8.	Connecters		
9.	AJB's		
10.	MJB's		
11.	Lighting Arrestors		
12	Earthing		
13	Cable Trays		
14.	Others Miscellaneous items		

Signature;

Name & Designation of Authorized Person;

Date;

MINIMAL TECHNICAL REQUIREMENTS / STANDARDS FOR SPV PLANTS

1. PV MODULES:

1.1 The PV modules must conform to the latest edition of any of the following IEC / equivalent BIS Standards for PV module design qualification and type approval:

Crystalline Silicon Terrestrial PV Modules

IEC 61215 / IS14286

Thin Film Terrestrial PV Modules

IEC 61646 / Equivalents

- 1.2 In addition, the modules must conform to IEC 61730 Part 1-requirements for construction & Part 2 - requirements for testing, for safety qualification or Equivalent IS.
- 1.3 PV modules to be used in a highly corrosive atmosphere (coastal areas,etc.) must qualify Salt Mist Corrosion Testing as per IEC 61701 / IS 61701.
- 1.4 IDENTIFICATION AND TRACEABILITY

Each PV module must use a RF identification tag (RFID), which must contain the following information:

- (i) Name of the manufacturer of PV Module
- (b) Name of the Manufacturer of Solar cells
- (c) Month and year of the manufacture (separately for solar cells and module)
- (d) Country of origin (separately for solar cells and module)
- (e) I-V curve for the module
- (f) Peak Wattage, Im, Vm and FF for the module
- (g) Unique Serial No and Model No of the module
- (h) Date and year of obtaining IEC PV module qualification certificate
- (i) Name of the test lab issuing IEC certificate
- (j) Other relevant information on traceability of solar cells and module as per ISO 9000 series.

1.5 WARRANTY

PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 12 years and 80% at the end of 25 years.

2. BALANCE OF SYSTEM (BOS) ITEMS/ COMPONENTS:

- 2.1 The BOS items / components of the SPV power plants/ systems deployed under the Mission must conform to the latest edition of IEC/ E quivalent BIS Standards/ MNRE specifications / as specified below:

BOS Item / System	Applicable BIS /Equivalent IEC Standard Or MNRE Specifications	
	Standard Description	Standard Number
Solar PV Lighting Systems:	Solar PV Home Lighting System	As per MNRE latest Specifications dated 09.09.2011
	Solar PV street Lighting System	
	Solar PV Lantern	

Solar PV Systems		
Charge Controller/MPPT units	Environmental Testing	IEC 60068-2 (1,2,14,30) / Equivalent BIS Std.
Power Conditioners/ Inverters**including MPPT and Protections	Efficiency Measurements Environmental Testing	IEC 61683 / IS 61683 IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std.
Storage Batteries	General Requirements & Methods of Testing Tubular Lead Acid / VRLA / GEL Capacity Test Charge/Discharge Efficiency Self-Discharge	As per relevant BIS Std.
Cables	General Test and Measuring Method PVC insulated cables for working voltage up to and including 1100 V and UV resistant for outdoor installation	IEC 60227 / IS 694 IEC 60502 / IS 1554 (Pt. I & II)
Switches/Circuit Breakers	General Requirements	IEC 60947 part I,II, III /
/Connectors	Connectors –safety	IS 60947 Part I,II,III
	A.C. /D.C.	EN 50521
Junction Boxes /Enclosures for Inverters/Charge	General Requirements	IP 54(for outdoor)/ IP 21(for indoor) as per IEC 529
Controllers/Luminaries		

**In case if the Charge controller is in-built in the inverter, no separate IEC 62093 test is required and must additionally conform to the relevant national/international Electrical Safety Standards wherever applicable

2.2 AUTHORIZED TESTING LABORATORIES/ CENTERS

Test certificates / reports for the BOS items/ components can be from any of the NABL/ IEC Accredited Testing Laboratories or MNRE approved test centers. The list of MNRE approved test centers will be reviewed and updated from time to time.

2.3 WARRANTY

The mechanical structures, electrical works including power conditioners/inverters/charge controllers/ maximum power point tracker units/distribution boards/digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

TECHNICAL BID

For Solar PV Power Plant of 70 KW

1. Solar PV Modules

S No.	Details regarding	Proposed by tenderer
1	Name of the manufacturer & Make of Solar Module.	
2	Type of Solar Cell	
3	Type of Frame Structure (MS/SS)	
4	Enclosed supporting documents if any	From Page No..... to.....
5	Details in case of any deviation from the technical specifications as specified in the tender document.	

2. Battery

S No.	Details regarding	Proposed by tenderer
1	Name of the manufacturer & Make of Battery	
2	Model Type	
3	Dimensions of Battery (size)	
4	Enclosed supporting documents if any	From Page No..... to.....
5	Details in case of any deviation from the technical specifications as specified in the tender document.	

3. BoS Items/Component

S No.	Details regarding	Proposed by tenderer
1	Name of the manufacturer & Make of PCU/ Inverter	
2	Name of the manufacturer & Make of Charge Controller/ MPPT Units	
3	Name of the manufacturer & Make of Switches/Circuit Breaker/ Connectors	
4	Enclosed supporting documents if any	From Page No..... to.....
5	Details in case of any deviation from the technical specifications as specified in the tender document.	

4. Other BOS Items/Component

S No.	Details regarding	Proposed by tenderer
1	Name of the manufacturer & Make of Street light fitting units	
2	Name of the manufacturer & Make of Indore fitting Units	
3	Name of the manufacturer & Make of Solar lanterns	
4	Enclosed supporting documents if any	From Page No..... to.....
5	Details in case of any deviation from the technical specifications as specified in the tender document.	

(Signature of Tenderer)

Seal

NOTE: Above details without copies of work orders, completion certificates and satisfactory performance reports from the users will not be considered.

PRICE BID

Name of work :- DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING INCLUDING WARRENTY AND 10 YEAR MAINTENANCE OF 70 KW GRID TIED ROOF TOP SOLAR PV PLANT ON THE BUILDING OF MUNICIPAL CORPORATION, MOHALI.

S No.	Name of work	Capacity	Amount (in figures)	Amount (in words)
01	DESIGN,SUPPLY, INSTALLATION,TESTING AND COMMISSIONING OF 70 KW GRID TIED ROOF TOP SOLAR PV PLANT ON THE BUILDING OF MUNICIPAL CORPORATION, MOHALI. INCLUDING FIVE YEAR OPERATION & MAINTENANCE	70Kw		
02	O&M of Six Year (with system Warrenty)	70Kw		
03	O&M of Seven Year (with system Warrenty)	70Kw		
04	O&M of Eight Year (with system Warrenty)	70Kw		
05	O&M of Nine Year (with system Warrenty)	70Kw		
06	O&M of Ten Year (with system Warrenty)	70Kw		

Total Rs.

..... **(in words)**

Certified that:

- 1- Above rates are in accordance with the specifications & various terms & conditions mentioned in the tender document.
- 2- The rates are inclusive of all taxes and duties what so ever.

(Signature of Tenderer)

Seal