ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

Materials Department
(Rajasthan Project)
02-A, District Shopping Centre,
Saraswati Nagar,Basni
Jodhpur – 342 005
Rajasthan, India.
Phone -0291-2729472
Fax : 0291-2727050

TENDER NO. SJI8084P19 **Date: 22.05.2018**

INVITATION TO e-BID UNDER SINGLE STAGE TWO BID SYSTEM

Dear Sirs,

OIL invites Bids for the supply, installation and commissioning of **Rooftop Solar Power Plant (15 KW capacity)** through its e-Procurement site under **Local Competitive Bidding (LCB) - Single Stage Composite Bid System**. The bidding documents and other terms and conditions are available at Booklet No. MM-RP-LOCAL-E-01-2005. The prescribed Bid Forms for submission of bids are available in the tender document folder.

The general details of tender can be viewed by opening the RFx [Tender no.] under RFx and Auctions page. The details of items tendered can be found under Item tab and details can be found under Technical RFX.

The tender is invited with firm price for the specified quantity. Further details of tender are given in Rfx Parameters → Technical Attachments as **ANNEXURE IA.**

THE TENDER WILL BE GOVERNED BY:

a) "General Terms & Conditions" for e-Procurement as per Booklet No. MM-RP-LOCAL-E-01-2005 for E-procurement (LCB Tenders).

b) Technical specifications, Quantity and Notes for the **Rooftop Solar Power Plant (15 KW capacity)** as per **Annexure – IA**.

c) The prescribed Bid Forms for submission of bids are available in the Technical Attachments. Technical Checklist, Commercial Checklist & SRP checklist must be filled-up and submitted along with the technical bid.

d) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in *"Annexure-CA certificate"*. The same must be submitted along with the bid.

SPECIAL NOTE:

1.0 Please note that all tender forms and supporting documents are to be submitted through OIL's e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with Tender no. and due date to **CGM (Services), Oil India Limited, Rajasthan Project, 2A, Saraswati Nagar, District Shopping Centre, Basni, Jodhpur-342005, Rajasthan** on or before the Bid Closing Date mentioned in the Tender.

a) Original Bid Security.
b) Detailed Catalogue.
c) Any other document required to be submitted in original as per tender requirement.

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in triplicate.

2.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

3.0 OIL INDIA LIMITED (OIL) has upgraded its E-tender Portal. As part of the new system, the intending bidder must have Encryption Certificate along with Digital Signature Certificate (DSC) of Class III [Organization]. The date for implementation of new system is 12th April 2017 and the requirement of the new DSC will be applicable for the tenders floated on 12th April 2017 onwards. All our current and prospective esteemed bidders are therefore requested to acquire Class III DSC [Organization] along with Encryption Certificate issued by any of the Licensed Certifying Authorities (CA) operating under Controller of Certifying Authorities (CCA) of India as per Indian IT Act 2000. Guideline for getting Digital Signature and other related information are available on the e-tender website www.oil-india.com. The bid signed using any other digital certificate or digital certificate without organization name of the bidder, will be liable for rejection.

4.0 Encryption certificate is mandatorily required for submission of bid. In case bidder created response using one certificate (using encryption key) and bidder subsequently changes the digital signature certificate then the old certificate (used for encryption) is required in order to decrypt his encrypted response for getting the edit mode of his response. Once decryption is done, the bidder may use his new DSC certificate for uploading and submission of his offer. It is the sole responsibility of the bidder to keep their DSC certificate properly. In case of loss of DSC certificate, Oil India Limited is not responsible.

5.0 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical Attachments under Rfx Information tab. The "TECHNO-COMMERCIAL UNPRICED BID" shall contain all techno-commercial details except the prices. The price bid is to be uploaded under "Notes and Attachments" tab as per the Price bid format furnished vide Annexure-F.

6.0 Please refer Annexure-B and Annexure-F for BEC/BRC applicable against this tender. Please ensure compliance to BEC/BRC and submit requisite documentation, failing which offer may be liable for rejection.

7.0 Bidder are advised to fill up the Technical bid check list and Response sheet & Bidder's declaration as per Annexure-C along with the tender documents.

8.0 Please refer "**E-Tender User Manual**" document for help on system settings and procedure to upload technical and price bids.

9.0 Amendments to the NIT after its issue will be published on OIL's website only. Revision, clarification, addendum, corrigendum, time extension etc. to the tender will be hosted on OIL website only. No separate notification shall be issued in the press. Prospective bidders are requested to visit website regularly to keep themselves updated.

10.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.

11.0 Bidders to take special note of the following conditions:

11.1 Against Tender Fee – Payment should be made only through online mode and no other instrument (Cash/DD/Cheques/Cashier Cheque, etc) will be acceptable.

11.2 Against Bid Security/EMD/Performance Bank Guarantee – Only payments through online mode or Submission of Bank Guarantee/LC will be acceptable. No DD/Cheques/Cashier Cheque or any other mode will be acceptable.

12.0 Attention about GST: Please ignore the details given about the taxes, duties & levies in anywhere in Tender documents which is not applicable now after implementation of GST with effect from 01.07.2017. Others all terms and condition remains same. Referred annexure for GST uploaded under Technical bid.

13.0 Pre-Bid Conference: A pre-bid conference to explain Company's exact requirements and to reply queries of Bidders, if any, on the tender stipulations will be held on 12.06.2018 at 11:00 hrs (IST) in OIL's Project Office at 2A, District Shopping Centre, Saraswati Nagar, Basni, Jodhpur -342005, Rajasthan. Maximum of two representatives of each Bidder will be allowed to attend the pre-bid conference on producing authorization letter as per the proforma attached. Bidders interested to attend the Pre-Bid Conference should intimate MANAGER (M&C), Oil India Limited, Jodhpur latest by 09.06.2018.

Yours faithfully,

OIL INDIA LIMITED
Sd/-

(Bhavik Mody)
Manager (M&C)
Rajasthan Project
Jodhpur, Rajasthan

Tender No. & Date : SJI8084P19 22.05.2018

Tender Fee : INR 1,000.00
Bid Security Amount : INR 29,300.00

Bidding Type : Single Bid (Composite Bid)

Bid Closing On : 03.07.2018 at 11:00 hrs. (IST)
Bid Opening On : 03.07.2018 at 15:00 hrs. (IST)

Performance Guarantee : Applicable @10% of order value

OIL INDIA LIMITED invites Press tenders for items detailed below:

Item No./ Mat. Code	Material Description	Quantity	UOM
10 0C000434	Attached as Annexure-A	1	NO
	Installation & Commissioning		
10	Installation&Commissioning of 15 KWp SPP Attached as Annexure- D	1	AU
	Comprehensive AMC		
10	Comprehensive AMC for 1st 5 years Attached as Annexure-E	5	AU
20	Comprehensive AMC for 2nd 5 years Attached as Annexure-E	5	AU
30	Comprehensive AMC for 3rd 5 years Attached as Annexure-E	5	AU
40	Comprehensive AMC for 4th 5 years Attached as Annexure-E	5	AU
50	Comprehensive AMC for 5th 5 years Attached as Annexure-E	5	AU

Standard Notes: BIDDERS ARE ADVISED TO VISIT THE SITE BEFORE BID SUBMISSION. BIDDERS ARE ALSO ADVISED TO ATTEND THE PRE-BID CONFERENCE WITH THEIR QUERIES AS PER THE PRE-BID CONFERENCE CLAUSE.

1) The tender is invited under SINGLE STAGE-COMPOSITE BID SYSTEM. The bidder has to submit both the "TECHNO-COMMERCIAL UNPRICED BID" and "PRICED BID" bid through electronic form in the OIL's e- Tender portal within the Bid Closing Date and Time stipulated in the e-Tender. The "TECHNO-COMMERCIAL UNPRICED BID" is to be submitted as per Scope of Work & Technical Specification of the tender and "PRICED BID" as per the Price Bid format uploaded under "Notes and Attachments" tab.

2) Please go through the help documents in details before uploading the document and ensure

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uploading of technical bid as per the instructions.

3) Bid should be valid for **minimum 90 days** from bid closing date, failing which offer shall be rejected.

4) The original bid security (Amount is mentioned above and also in Rfx Parameters of the tender in OIL's e-portal) should reach us before bid closing date and time of the technical bid. Bid without original Bid Security will be rejected. The bidders who are exempted from submitting the Bid Bond should attach documentary evidence in the TECHNO-COMMERCIAL BID as per clause 9.8 of Section A General Terms and conditions(MM-RP-LOCAL-E-01-2005). The bid security shall be valid up to **03.01.2019**. **Only payments through online mode or Submission of Bank Guarantee/LC will be acceptable. No DD/Cheques/Cashier Cheque or any other mode will be acceptable. Please refer special notes for Bid security through SFMS system.**

5) Successful bidder shall be required to furnish a Performance Security equivalent to 10% of total order value. **Performance security in form of Bank Guarantee/LC will be acceptable. No DD/Cheques/Cashier Cheque or any other mode will be acceptable. Please refer Special notes for Performance security through SFMS system.**

6) Pre-Bid Conference: A pre-bid conference to explain Company's exact requirements and to reply queries of Bidders, if any, on the tender stipulations will be held on **12.06.2018 at 11:00** hrs (IST) in OIL's Project Office at 2A, District Shopping Centre, Saraswati Nagar, Basni, Jodhpur -342005, Rajasthan. Maximum of two representatives of each Bidder will be allowed to attend the pre-bid conference on producing authorization letter as per the proforma attached. Bidders interested to attend the Pre-Bid Conference should intimate MANAGER(M&C), Oil India Limited, Jodhpur latest by **09.06.2018**.

7) Bidders to note that Govt. of India under Micro, Small and Medium Enterprises Development (MSMED) Act 2006, has proclaimed the Public Procurement Policy, 2012 with effect from 1st April, 2012 in respect of procurement of goods and services, produced and provided by micro and small enterprises, by its Ministries, Departments and Public Sector Undertakings for promotion and development of Micro and Small Enterprises. A new Clause on applicability of Public Procurement Policy for procurement of goods from Micro and Small Enterprises(MSE) in the tender is furnished vide Amendment to General Terms and Conditions for Local Tender (MM-RP-LOCAL-E-01-2005). Bidders are requested to take note of the same and to submit their offers accordingly.

8) To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

9) General terms and conditions (document MM-RP-LOCAL-E-01-2005) is enclosed.

10) GST (Goods & Service Tax) will be cost loaded as quoted and in line with provisions of the bidding document. Any claim subsequently by the bidders for additional payment/liability shall not be admitted and has to be borne by the bidders. For GST clause please refer Annexure-GST.

11) Tender fee Payment should be made only through online mode and no other instrument(Cash/DD/Cheques/Cashier Cheque, etc.) will be acceptable.

12) Purchase Preference on Local Content is applicable against this tender. Please refer the Special Notes in this document for the applicable clause.

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Special Notes : AA. Purchase preference policy (linked with Local Content)(PP-LC)

a) Ministry of Petroleum & Natural Gas, Government of India implemented PP-LC Policy to provide Purchase Preference (linked with local content) by notification no. Ref. O-27011/44/2016-ONG-II/FP dtd. 25.04.2017.

b) As per the PP-LC policy, 50% of the tendered quantity would be awarded to the lowest techno-commercially qualified LC (Local Content) manufacturer / supplier which are within the price band of 10% of the L1, subject to matching the L1 price. Bidders seeking Purchase preference (linked with Local Content)(PP-LC) shall be required to meet / exceed the target of Local Content (LC) as per values furnished vide MOPNG notification no. O-27011/44/2015-ONG-II/FP dated 25.04.2017 as on the bid closing date. The remaining quantity will be awarded to L1 (i.e. Non Local Content (NLC) manufacturer / supplier not meeting prescribed LC criteria).

c) In case a bidder is eligible to seek benefits under PP-LC policy as well as Public Procurement Policy for MSEs-Order 2012, then the bidders should categorically seek benefits against only one of the two policies i.e. either PP-LC or MSE policy. If a bidder seeks free of cost tender document under the MSE policy, then it shall be considered that the bidder has sought benefit against the MSE policy and this option once exercised cannot be modified subsequently.

d) Price Break-up: The bidder shall provide break up of "Local component" and "Imported Component" along with their price bid.

e) Such bidders shall furnish following undertaking from the manufacturer on Manufacturer's letter head along with their techno-commercial bid. The undertaking shall become a part of the contract:

"We _____ (Name of Manufacturer) undertake that we meet the mandatory minimum Local Content (LC) requirement i.e. _____ (to be filled as notified at Enclosure I of the policy) for claiming purchase preference linked with Local Contents under the Govt. policy against under tender no. _____."

f) Above undertaking shall be supported by the following certificate from Statutory Auditor engaged by the bidder, on the letter head of such Statutory Auditor (as per the provisions of the aforesaid policy):

"We _____ the statutory auditor of M/s _____ (name of the bidder) hereby certify that M/s_____ (name of manufacturer) meet the mandatory Local Content requirements of the Goods and/or Services i.e. _____ (to be filled as notified at Enclosure I of the policy) quoted vide offer No._____ dated _____ against OIL's tender No._____ by M/s _____ (Name of the bidder).

g) Failure to submission of documents as mentioned in a), b) & c) above will be treated as "Calculation of LC is not verifiable, the value of LC of the said component shall be treated as NIL" and hence will not be eligible for PP-LC.

h) At the time of bidding, the bidder has to confirm in their bid for submission/complying the following in the event of order:

1) In case of procurement of goods under PP-LC, the LC content may be calculated by the supplier and the verification of the procurement of goods, service shall be carried out by a Statutory Auditor engaged by the bidder.

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2) The supplier shall provide the necessary local content documentation to the statutory auditor, which shall review and determine the local content requirements have been met, issue a local content certificate to that effect on behalf of procuring company, stating the percentage of local content in the good or service measured.

3) The local content certificate shall be submitted along with each invoice raised. However, the % of local content may vary with invoice while maintaining the overall % of local content for the total purchase of the pro-rata local content requirement. In case, it is not satisfied cumulatively in the invoices raised up to that stage, the supplier shall indicate how the local content requirement would be met in the subsequent stages.

i) A bidder who has been awarded the contract after availing Purchase Preference is found to have violated the LC provision, in the execution of the procurement contract of goods and/or services shall be subject to financial penalty over and above the PBG value prescribed in the contract and shall not be more than an amount equal to 10% of the Contract Price. View this, the supplier shall confirm in their bid for submission of PBG (PBG-PPLC) of 10% of the contract value which shall be valid throughout the execution of the contract(format as provided vide the notification). This PBG-PPLC is in addition to the PBG, which is required to be submitted by the successful bidder as per OIL's general terms & condition. Bidders to provide an undertaking complying to the submission of additional PBG along with their bid, in case of availing PPLC benefit.

j) Bidders should note that PP - LC shall not be available in case of procurement of goods / services falling under the list of items reserved for exclusive purchase from Micro and Small Enterprise (MSEs) or Domestically Manufactured Electronic Products (DMEP).

BB. CONFIRMATION OF BID SECURITY / PERFORMANCE SECURITY:

The following clause is applicable for bid security / performance security submitted in the form of bid bond/LC. Bidders are requested to strictly comply to this clause:

Bidders are requested to advise the Bank Guarantee issuing bank to comply with the following and ensure to submit, the receipt of the copy of SFMS message as sent by the issuing bank branch, along with the original Performance Bank Guarantee to OIL's order/contract issuing office.

The bank guarantee issued by the bank must be routed through SFMS platform as per following details:

(i) "MT 760 / MT 760 COV for issuance of bank guarantee
(ii) "MT 760 / MT 767 COV for amendment of bank guarantee
The above message / intimation shall be sent through SFMS by the BG issuing bank branch to Axis Bank, Jodhpur Branch, IFS Code - UTIB0000057; Swift Code: AXISINBB057. Branch Address - AXIS Bank Ltd, Prince Tower, Near Jaljog Circle, Residency Road, Jodhpur - 342003"

ANNEXURE – A

TECHNICAL SPECIFICATIONS FOR GRID INTERACTIVE ROOFTOP MOUNTED SOLAR PHOTO-VOLTAIC SYSTEM

1.0 INTRODUCTION:

It has been proposed to setup a 15 KWp (estimated) grid interactive solar photovoltaic power plant (without battery back-up) at the Rooftop of OIL House building, Oil India Limited (OIL), Jodhpur, Rajasthan, India.

The Grid Interactive Rooftop Mounted Solar Photovoltaic (PV) plant shall consist mainly of the following components

A) Solar PV Modules-

Specification- Poly Crystalline Silicon PV Modules with Efficiency >15% with approval as per IEC 61215 and IEC 61730 (Part – I and Part –II (for safety) and IEC 61701 for salt mist corrosion. These shall be Class A only, suitable for continuous outdoor use, in extreme temperature and dusty conditions, shall be made of high quality laminated in ultraviolet stabilized polymer material such as Ethyl Vinyl Accelerate (EVA), Tedler, and toughened glass. The size of single crystalline silicon PV cells shall be so chosen so as to maximize energy density and align with economies of scale. The peak power output of the PV Module shall be minimum 300Wp under STC

The PV modules shall be provided/equipped

- with frame of anodized channels for size and simplicity in installation offered as a single module or series parallel combination of modules.
- with screw-less frame with solar cable and connector.
- with by-pass diode to minimize power drop caused by shade.
- lightweight cells, resistant to abrasion, hail impact, rain, sand, water and environmental pollution and shall be provided with anti-reflection coating and back surface field (BSF) structure to increase conversion efficiency.
- The terminal box on the module should have a provision for opening for replacing the cable, if required.
- Each PV module must use a RF identification tag (RFID), which must contain the following information:
    - Name, monogram or symbol of the manufacturer of PV Module
    - Name, monogram or symbol of the Manufacturer of Solar cells
    - Type or model number of the module
    - Month and year of the manufacture (separately for solar cells and module)
    - Polarity of terminals or leads (colour coding is permissible)
    - Maximum system voltage for which the module is suitable
    - I-V curve for the module
    - Peak Wattage, Im, Vm and FF for the module
    - Unique Serial No and Model No of the module
    - Date and year of obtaining IEC PV module qualification certificate
    - Country of origin (separately for solar cells and module)
    - Name of the test laboratory issuing IEC certificate
    - Other information on traceability of solar cells & module as per ISO9000 series

ANNEXURE – A

The V-I curve of each PV module with serial numbers are to be submitted along with modules.

Warranty: Each solar PV module shall be warranted by the manufacturer with free replacement if the output under standard light condition falls more than 10% in first 10 (ten) years and 10% in next 15 (fifteen)years.

B) Module Mounting Structures

Specification: Hot Dip/ Pre Galvanized/ Aluminium/any suitable material with SS nuts and bolts. Designed to withstand wind speed and seismic factors of the site.
The module mounting structure shall be

- as per MNRE specifications and supply & installation shall be under the scope of Vendor.
- Non corrosive anodised aluminium/ hot dip galvanized MS angles of proper size and shall withstand wind speeds of 200 KM/hour
- The minimum thickness of galvanization shall be at least 70 microns. All fixing fasteners shall be of stainless steel grade SS 304. Legs assembly shall be of MS Hot Dip galvanized material.
- Designed in accordance with the latitude of the place of installation. The array mounting structure shall be designed to allow easy replacement of any module and shall be in line with site requirement. Structure shall be designed for simple mechanical and electrical installation.
- It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the Rooftop properly.
- The mounting structures must be suitable to mount the SPV modules/panels/arrays on the Rooftop at an angle for optimum tilt. The module alignment & tilt angle shall be calculated to provide the maximum annual energy output. This shall be decided based on the location of array installation.
- The support structure design & foundation shall be designed to withstand wind speed up to 200 kmph using relevant Indian wind load codes.
- The minimum clearance of the lowest part of the module/module structure and the developed Rooftop level shall not be less than 300mm.
- The legs of the structures shall be fixed suitable angle nosing (in scope of vendor). While making foundation design, due consideration shall be given to the weight of module assembly and maximum wind speed.
- The foundation pedestals wherever necessary shall be concrete.
- The mounting of solar modules shall be done on rooftop and entire Fabrication of elevated structure and the structure atop sloping roofs shall be done by the Bidder.
- The array structure shall be grounded properly using maintenance free earthing kit.
- The entire PV module setup shall be installed on roof terrace of the 3 storied office building-OIL HOUSE which has height 12m above ground level. The leg/base frame of the PV module may preferably be mounted on to the existing RCC column projections/pedestals.
- In case the mounting/pedestal is inevitably required to be made on to the roof slab other than beam/column supports, safety of the RCC roof slab for Wind load (on modules) and Dead load combinations may be analyzed as per relevant IS code. Structural details and reinforcement detailing of the building can be obtained from Civil Engineering section of this office.

- Any kind of breaking/digging/demolishing of the RCC slab is not permissible unless otherwise permitted by the Engineer In-Charge.

C) Inverters

Specification: Three-phase string inverters ideal for rooftop systems complying with all requirements for IP 65 protection – their housing provides reliable protection from dust and water, including high pressure washing. With Fast MPP tracking and a wide input voltage range to ensure the high levels of efficiency even at low irradiation, to achieve an **efficiency of up to 98%** with integrated data-logger to send all important operating data through Internet portal.

As SPV array produce direct current electricity, it is necessary to convert this direct current into Alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to maximize Solar PV array energy input into the System.
The DC power produced is to be fed to inverter for conversion into AC. In a grid interactive system AC power shall be fed to the grid at three phase 415 V AC bus. Power generated from the solar system during the daytime shall be utilized fully by powering the building loads and feeding excess power to the grid as long as grid is available. In cases, where solar power is not sufficient due to more demand or cloud cover etc. the building loads shall be served by drawing power from the grid. The inverter should always give preference to the Solar Power and will use Grid power only when the Solar Power is insufficient to meet the load requirement.
The output of the inverter must synchronize automatically its AC output to the exact AC voltage and frequency of the grid. Inverter shall continuously monitor the condition of the grid and in the event of grid failure; the inverter should automatically switch to off-grid supply within 20-50 milliseconds. The solar system should then be resynchronized with the grid within two minutes after the restoration of grid. Grid voltage shall also be continuously monitored and in the event of voltage going below pre-set value and above a pre-set value, the solar system shall be disconnected from the grid within the set time. Both overvoltage and under voltage relays shall have adjustable voltage (50% to 130%)and time settings (0 to 5 seconds).Metal Oxide Varistors (MOVs) shall be provided on DC and AC side of the inverter.

The inverter control unit shall be so designed so as to operate the PV system near its maximum Power Point (MPP), the operating point where the combined values of the current and voltage of the solar modules result in a maximum power output.

The inverter shall be a true sine wave inverter for a grid interactive PV system. It shall be efficient and reliable solid-state device (IGBT type).

Each Sub-Array Junction Box will have Suitable Reverse Blocking Diodes of maximum DC blocking voltage of1000 V with suitable arrangement for its connection.
The degree of protection of the outdoor inverter panel shall be at least IP-65.Typical technical features of the inverter shall be as follows:

- Continuous output power rating:>= 15kWp
- Maximum input voltage: 1000 V

- Nominal AC output voltage: 415V, 3 Phase
- Accuracy of AC Voltage control: ± 1%
- Output frequency: 50 Hz
- Accuracy of frequency control: ± 0.5%
- Ambient temperature: 10 deg C to 55 deg C
- Grid voltage tolerance: -20 % and + 15 %
- Power factor control: 0.95 inductive to 0.95 capacitive
- No-load losses:< 1% of rated power
- Inverter efficiency (minimum): 96%
- Maximum efficiency/ European efficiency: 98% minimum
- Power Control: MPPT
- Surge Protection Device (SPD): Required (Type I & 2)
- Overload behaviour: Current limitation; power limitation
- Total Harmonic distortion (TDH):< 3 % @ nominal apparent power
- Protection required: DC reverse-polarity/AC short-circuit current capability/ galvanic isolation, Anti-islanding protection / Grid regulation: As per EN, VDE standard

Liquid crystal display shall at least be provided on the inverters front panel or on separate data logging/display device to display following:

- DC Input Voltage
- DC Input current
- AC Power output (kW)
- Current time and date
- Time active
- Time disabled
- Time Idle
- Temperatures(C)
- Converter status
- AC Output Voltage

Nuts & bolts and the inverter enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.

All doors, covers, panels and cable exits shall have gaskets or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks.

Operation Mode:

• Night or sleep mode: Where the Inverter is almost completely turned off, with just the timer and control systems still in operation; losses shall be less than 2W per 5 kW.

• Standby mode: Where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 10W).

• Operational of MPP tracking mode: the control system shall continuously adjust the voltage of the generator to optimize the power available. The power conditioner shall automatically re-enter standby mode when input power reduces.

• Below the standby mode threshold: Front panel shall provide display of status of the inverter.

D) PV Cable

Specification: Single-pole, double insulated EBXL, XLPO (Strings) solar cable of adequate rating with fine-wire copper strand. The robust, flexible and space-saving design ensures constant electrical and mechanical properties during the whole life of the PV installation. TÜV certified according to the latest regulations. -40°C to +120°C (permanent) UV, ozone and hydrolysis resistant 1.1KV, Copper Armoured XLPE insulated.

E) MC4 Connector (Pair Male-Female)

Specification: With safety clip that requires a tool to unlock (NEC2008 compliant) Certified for applications with modules according to IEC61730, Safety class II, Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment - with Minimal voltage drop, High current-carrying capacity, Minimal power loss, Minimal contact resistance, High durability contacts withstand up to 1 million mating cycles, Operating temperatures up to 350°C.

F) Junction Boxes

Specification: Dust, vermin and water proof made from FRP

G) AC Cable

Specification: Adequate rating Power Cable shall be 1.1 kV, multi-core, stranded Copper conductor, XLPE insulated galvanized steel wire/strip armoured, flame retardant low smoke (FRLS) with PVC outer sheath made on PVC compound, conformity to IS:7098& other relevant standards.

H) Distribution Boxes, cables and accessories

Specification: An ACDB shall be provided in between PCU and Load/grid interface of suitable rating of connection and disconnection of PCU from load Class 1 Energy Meter for solar power monitoring.

All the cables shall be supplied conforming to IS standard as per requirement.

I)LT Panel

Specification: LT Panel with MCCBs at incomers and outgoing with proper rating Auto synchronization facility having reverse power and other protection relays. The Components shall be from the Make as specified. Having 2 Separate Compartments for Protective items and Power Distribution/ Collection.

J) Monitoring System

Specification: This Monitoring System should be able to show and log all the major parameters from the Inverters and AC system and should be able to generate reports (generation, other operation parameters etc.) with errors and faults. This system should be accessible through web portal for remote monitoring. It can store historical data. It must be industrial grade.

K) Earthing System
Specification: As per relevant IS

L) Lightening Arrester
Specification: As per relevant IS, ESE Type

M) Solar Meter
Specification: As per specification and approval of State DISCOM. Approval from State DISCOM and payment of fees, if any, shall be the responsibility of the Bidder. No payment shall be paid by OIL in this regard.

N) Surge protection devices in both DC power side and AC power side

O) Any other item not mentioned but required for proper installation and commissioning of the plant shall have to be provided by the supplier as per standard.

2.0 LOCATION:

Location Details
Name of State: Rajasthan
District: Jodhpur
Location: OIL House of Oil India Limited (rooftop)
Latitude: 26°14'5.10"N
Longitude: 73° 1'2.10"E
Roof top area of installation: 1500 sq. feet

3.0 OPERATING CONDITIONS:

a. Operating Environment: 10 to 50 Deg. C
b. Operating Relative Humidity: 0 to 80%
c. Storage temp.: 15 to 45 Deg. C
d. Elevation: 221 m above MSL

4.0 SCOPE OF SPECIFICATION:

a) The scope of these specifications shall cover design, engineering, manufacture, quality surveillance, testing at manufacturer's works, packing and supply, erection, testing and commissioning and performance testing of 15KWp (estimated) grid interactive Rooftop mounted solar photovoltaic system with associated components for installation at Oil India Limited, Jodhpur

b) The systems shall be complete with PV modules, inverter, metering, junction boxes, AC, DC distribution boards and cables, communication interface, and any other equipment necessary for safe and efficient operation of the system.

c)The work shall also include interconnection of PV system with the existing OIL grid supplying power to the building.

d) The civil works for installation of complete system shall also be in scope of supplier.

e) The equipment offered shall conform in all respects to high standards of engineering, design and workmanship and be capable of performing in commercial operation up to Bidder's guarantee in a manner acceptable to OIL, who will interpret the meaning of drawings and specifications and shall have the power to reject any work or materials, which in his judgment are not in full accordance therewith.

f) It shall be the responsibility of the Bidder to ensure that all the works as per scope of the specification are completed for safe and efficient working of the system.

g) All the necessary co-ordination with regard to sub-contracted items shall be carried out by the Bidder. The customer (OIL) will communicate only with the Bidder for all matters pertaining to this contract.

h) Considering the reliability of the grid, no electrical storage batteries are envisaged as excess electricity generated by the solar panels which is not required by the equipment/devices in the building premises shall be exported to the grid.

5.0 CODES AND STANDARDS

a) All Equipment and accessories shall comply with requirement of standards published by Bureau of Indian Standards (BIS). In-case no BIS codes exist the equipment shall meet the requirement of international standard including IEEE for design and installation of grid connected PV system. The list of standards adopted shall be indicated in the bid.

b) The SPV Module must be provided with acceptable Test& Certified documents.

c) The quality of equipment supplied shall be generally controlled to meet the guidelines for engineering design included in the standards and codes listed in the relevant ISI and other standards, such as:

- IEEE 928: Recommended Criteria for terrestrial PV power systems.
- IEEE 929: Recommended practice for utility interface of residential and intermediate PV systems.
- IEEE519: Guide for harmonic control and reactive compensation of Static Power Controllers.
- National Electrical NFPA 70-1990 (USA) or Equipment National standard.
- National Electrical Safety Code ANSIC2 (USA) or equipment national standard.
- IEC: 61215 (2005) - Crystalline silicon terrestrial photovoltaic (PV)modules– Design qualification and type approval
- IEC 61683 / IS 61683 - Efficiency Measurements of Power Conditioners/Inverters including MPPT and Protections
- IEC: 61730 -1, -2 Photovoltaic (PV) module safety qualification Part 2: Requirements for testing
- IEC: 60904-1(2006) Photovoltaic Devices-Part-I: Measurement of Photovoltaic current- Voltage Characteristic
- IEC: 62446 (2009)- Grid-Connected Photovoltaic Systems— Minimum Requirements for System Documentation, Commissioning Tests and Inspection:

- IS 9000: Basic environmental testing procedure for Electronic and electrical items.

6.0 SPECIFIC TECHNICAL REQUIREMENTS:

a) The Solar PV power system shall be rooftop mounted, grid connected without battery back-up.

b) The PV Array shall consist of a number of individual PV modules or panels that have been wired together in a series and/ or parallel combination and shall meet the generation power capacity of 15KWpeak (estimated).

c) The DC power generated from SPV array shall be converted to AC power with Power Conditioning Unit /Inverter, consisting of grid-tied Inverter and the associated control and protection devices. The voltage level shall match the grid voltage (415 Volts AC, 3-phase & Neutral, 50 Hz)

d) Output from Power Conditioning Unit shall be connected to an existing LT power distribution panel, wherein continuous synchronization with grid power shall be automatically active through static circuitry mechanism & devices.

e) Maximum available power of Solar PV Plant will be drawn during the daytime and during any shortfall in power generated by Solar PV Plant during time then extra power required shall be drawn from the Utility Source/without interruption to serve the load requirement. In case of any failure of grid power supply, PV Solar power supply will also automatically get disconnected immediately and the same will be restored automatically at restoration of grid power.

f) DUTY CYCLE: Average Hours of Operation/day: 8-11 hours per day, as per the solar insolation levels of the site.

7.0 SUPPLY& INSTALLATION OF DC COMBINER BOX /ARRAY JUNCTION BOX:

a) Enclosure: The array junction boxes shall be made of PC-GFS Polycarbonate-Glass fibre substance) thermoplastic having minimum IP65/66 protection in accordance with IEC 60 529 with the help of internally embedded polyurethane gasket.

b) The enclosure should be double insulated with protection class II. In view of the same, IEC60439/IEC61439 (new revision) comes as an important standard as it fulfils this requirement of enclosure to be double insulated. (Test certification is required for IP65/ IP 66 degree of protection.) The lid shall be of transparent poly-carbonate.

c) Fuse Protection on Strings: DC fuses rated from 2A to 25A from leading manufacturers to be used in the combiner box to provide over-current protection.

d) Surge Protection Device: Surge Protection devices or SPD to be provided to protect the combiner/junction box from any power surge and voltage spike. SPD to be used should meet Type 2 regulations, and to be typically rated between 600 to 1000V.

e) Input Glands/Connectors: The combiner/array junction box offered is to be provided with IP67rated Cable Glands or MC 4 connectors at the input side to lead the array strings into the box. Suitable markings should be provided for easy identification and cable ferrules shall be fitted at the cable termination points for identification.

f) Degree of protection against mechanical load: IK 08 (5 Joule)

g) Toxic behaviour: Halogen/Silicon free, conform to RoHS directive 2002/95/EC

h) Temperature Tolerance range: -40 deg C to +120 deg C

i) Chemical Resistance: Acid, Lye, Petrol, Mineral Oil & partially resistant from Benzene.

j) UV behaviour: UV stabilized, even after many years there should be no sign of brittleness.

8.0 PROTECTIONS AND CONTROL

a) PV system software and control system shall be equipped with islanding protection as described above. In addition to disconnection from the grid (islanding protection) i.e. on no supply), under and overvoltage conditions, PV systems shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) side for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenance are needed. Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit.

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

9.0 METERING SCHEME

a) Metering is required to measure the Solar Gross Generation on continuous basis and register cumulative energy based on 15-minute interval basis, daily, monthly and yearly energy generation.

b) The average voltage and power factor based on 15-minute interval must also be recorded.

c) Meter must also display on demand, instantaneous, AC system voltages and currents, frequency, reactive power with sign, total harmonics current and voltage distortion etc.

d) Meters shall comply with the requirements of CEA Regulations on "Installation and Operation of Meters" and in conformity with IS 13779 or IS 14679.

e) An integrating pyranometer (class II or better) is to be provided with the sensor mounted in the plane of the array. Readout shall be integrated with data logging.

10.0 POWER QUALITY REQUIREMENTS:

a) DC Injection in to the grid: The injection of DC power into the grid shall be avoided by using an isolation transformer at the output of the inverter. It is proposed to limit DC injection within 1% of the rated current of the inverter as per IEC 61727.

b) The limits for harmonics shall be as stipulated in the CEA Regulations on grid connectivity which are as follows:

- Total Voltage Harmonic Distortion= 5%
- Individual Voltage Harmonic Distortion=3%
- Total Current Harmonic Distortion=8%

c) Voltage Unbalance-The Voltage Unbalance in the grid shall not exceed 3.0%.

d) Voltage Fluctuations: The permissible limit of voltage fluctuation for step changes which may occur repetitively is 1.5%. For occasional fluctuations other than step changes the maximum permissible limits is 3%.

11.0 COMMUNICATION INTERFACE:

a) The project envisages a communication interface which shall be able to support
- Real time data logging
- Event logging
- Supervisory control
- Operational modes
- Set point editing

b) The following parameters shall also be measured and displayed continuously.
- Solar system temperature
- Ambient temperature
- Solar irradiation/insolation
- DC current and Voltages
- DC injection into the grid (one-time measurement at
- Efficiency of the inverter
- Solar system efficiency
- Display of I-V curve of the solar system
- Any other parameter considered necessary by supplier of the solar PV system based on prudent practice.

c) Data logger/PC based monitoring system must record these parameters for study of effect of various environmental & grid parameters on energy generated by the solar system and various analysis would be required to be provided through bar charts, curves, tables, which shall be finalized during approval of drawings.

d) The communication interface shall be an integral part of inverter and shall be suitable to be connected to local computer and also remotely via the Web using either a standard modem or a GSM/WIFI modem.

12.0 WEATHER MONITORING STATION:

a) An integrating PYRANOMETER for measuring the Solar Irradiance is to be provided, with the sensor mounted in the plane of the array. Readout is to be integrated with the data logging system.

b) In addition, temperature probes for recording the Solar panel temperature and ambient temperature are to be provided.

13.0 LIGHTNING PROTECTION AND EARTHING:

a) Required numbers of suitable lightning arrestors should be installed in the array area. Lightning protection shall be provided by the use of suitable earthing conductors and electrodes so that any lightning strike may find an alternate route to earth. Protection shall meet requirements of Central Electricity Regulations, 2010, and IS 2309:1969 (Protection of Buildings and allied structures from lighting).

b) Each array structure of the PV system should be grounded properly as per IS: 3043-1987.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 CEA Regulation-2010. Earth resistance should be tested in a dry weather in presence of the representative of customer, after earthing work is complete, with a calibrated earth tester and should have a value not more than the value specified in the relevant Code/Rules.

c) In case the SPV Array cannot be installed close to the equipment to be powered & a separate earth has been provided for SPV System, it shall be ensured that all the earth connections are bonded together to prevent the development of potential difference between any two earths.

14.0 CIVIL WORKS:

a) Embedment of structures suitable for mounting PV modules.

b) All the machinery such as hydra, JCBs, fork-lifts, for unloading of materials at site, movement of materials, foundation, erection of structures, module mounting, etc. shall be in the scope of Vendor.

15.0 SYSTEM DOCUMENTATION:

Complete documentation on the system must be provided to OIL. System documentation should include an owner's manual and copies of relevant drawings for whatever system maintenance might be required in the future.

16.0 TESTS AND TEST REPORTS:

Final acceptance tests for the PV plant shall include, but not limited to, the following:

a) Visual inspection
b) Verification that all required system and equipment labels, markings and placards are correct and in the proper locations. This includes ensuring that all equipment is properly listed, identified and labelled, suitable for the conditions of use, and installed according to the listed product instructions.
c) Wiring & cabling
d) Earthing connections
e) Mounting and support structures
f) Modules
g) Lightning protection including surge protection
h) Insulation Resistance Measurement
i) Importance of PV system wire insulation for safety and performance
j) Measurement methods for AC and DC circuits
k) Interpretation of insulation test data and application of the results
l) Test equipment selection
m) Array Performance Measurement

- Electrical measurement, including calculating circuit voltages and currents to verify that the PV array and system operating parameters are within specifications.
- I-V Curve Tracing and discrete voltage and current measurement
- PV system performance verification, correction and measurement using capacity test
- Interpreting I-V curves for performance troubleshooting
- Power performance Index and Energy performance index
- Calculations of energy yield
- Power rating, inverter efficiency, module temperature, array yield, system losses, etc.

17.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

a) Type test certificates for all the tests specified for the factory built Solar PV modules: Approved by MNRE Authorized test centre or equivalent International Labs (certificate to be submitted along with the offer).

b) Module mounting structure- Certificate from MNRE approved test centre.

c) Inverter: Certificate from MNRE approved test centre.

d) DC Cable- TUV Certification

e) Bill of materials.

f) Annexure – C: Bidder's declaration

g) Documents as specified in BEC/BRC criteria.

18.0 MAINTENANCE REQUIREMENT:

a) Easy access shall be provided for all components in the SPV plant and grid connecting equipment. Maintenance platform shall be provided for easy inspection of all the equipment.

b) If special tools are required for installation and maintenance, the bidder shall indicate the same and to be supplied free of cost.

c) The Bidder shall furnish operating and maintenance instruction manual to enable the purchaser to carry out maintenance of equipment effectively and safely.

d) Washing / cleaning of SPV panels would be carried out as per the prudent practice of the supplier.

19.0 LAYOUT REQUIREMENT:

The overall dimensions of the SPV Plant shall suit the Rooftop space provided for the layout requirements. The arrangement to suit this space shall be intimated at the time of approving the general arrangement drawing of the equipment.

20.0 INSTRUCTIONS, O&M MANUALS & DOCUMENTS TO BE SUBMITTED ALONG WITH SUPPLY:

a) Four copies of Instruction and Operation and Maintenance Manual in English should be provided with the system.

b) The manual shall be furnished at the time of dispatch of the equipment and shall include the following aspects:

- Erection drawings with written assembly instructions.
- Detailed instructions and procedures for the installation operation and maintenance.
- About solar PV system– its components and expected performance.
- Clear instructions about mounting of PV module (s)
- About the electronics
- DO’s and DONT’s
- Principle of Operation of various equipment
- Safety and reliability aspects
- Metering scheme
- About power conditioning unit’s software and controls
- Clear instructions on regular maintenance and troubleshooting of solar power plant
- Name and address of the person or service centre to be contacted in case of failure or complaint.

- Rated voltages, current and all other technical information which may be necessary for correct operation of the SPV plant.
- Catalogue numbers of all the components which are liable to be replaced during life of the SV plant and all the component parts.
- Trouble shooting and diagnostic procedure

c) Warranty certificate: Solar PV modules for 25 years as specified in the technical specifications.

d) System warranty certificate for the entire system for 12 months from the date of commissioning.

21.0 MAKES OF COMPONENTS:

Only indigenous brands of components will be used in the solar cell/panel system. Makes of various items will be as under:

a) Poly-crystalline solar panel: SSL/Sun Fuel/Evolve India Group/Sirius Solar Energy/Empire Solar/HHVSolar Technologies/Jain Irrigation Systems/ reputed Indian

b) Poly-crystalline solar cell: SSL/Euro Multivision/UPV Solar/KL Solar/Jupiter Solar/ reputed Indian

c) Inverter/filter on-grid: Evolve India Group/Power One Microsystems/ABB/reputed Indian

d) EVA film: RenewSys/Allied Glasses/SSL/Dugar Polymers/BrijEncapsulants

e) Modular mounting structure: NEPC/RN Solar/reputed Indian
f) MCCB, MCBs : ABB/ Siemens/ Schneider Electric
g) AC cable:Polycab/ Havells/ Finolex/ CCI
h) DC Cable: TUV certified.

22.0 NOTE:

a) Bidders must visit the installation site and carry out all required assessments prior to submission of bid.

b) General arrangement drawing of the plant to be approved by OIL prior to supply and installation.

	Compliance by Bidder	
CC. BID REJECTION CRITERIA (BRC)	**Indicate 'Confirmed' / 'Not Confirmed' / Not applicable**	**Indicate Corresponding page ref. of unpriced bid**
In addition to the General Terms and Conditions for Local Tender, the following BEC / BRC criteria will be applicable against this tender: The bids shall conform to the specifications, terms and conditions given in the tender. Bids shall be rejected in case the item(s) offered do not conform to technical specifications and to the respective international / national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications, and terms & conditions, the following requirements shall have to be particularly met by the bidders, without which the offer will be considered as non-responsive and rejected. All the documents related to BEC / BRC must be submitted along with the technical bid.		
A) TECHNICAL BRC		
1.0 The SPV modules / SPV systems must be tested and approved from MNRE's Solar Energy Centre/ MNRE authorised testing laboratories/centres, for assessing this manufacturer shall furnish latest type test reports. (copies of approval and test reports be attached).		
2.0 The bidder should have installed at least one Grid connected Solar PV Power Plant having capacity of not less than 15 kW which should have been commissioned during the last five (05) years as on original bid closing date of the tender.		
3.0 The details of projects executed in the past five (05) years shall be submitted along with tender documents. A certificate issued by the Govt. Organization/MNRE Authorized Agency/Project owner towards the satisfactory installation and functioning of the power plants to be furnished by the bidder.		
4.0 Bidder must agree to carry out comprehensive annual maintenance contract for a period of 25 years from the date of commissioning. Undertaking in this regard must be submitted along with the bid.		
5.0 Bidder shall have to quote for all the items mentioned in the NIT otherwise, their offer shall not be considered for evaluation. Note: Documentary evidence (self-attested) for all the above must be furnished along with the bid, failing which offer would be rejected.		
B) FINANCIAL CRITERIA:		
1.0 The bidder shall have an annual financial turnover of minimum INR 14,40,300/- during any of the preceding 03 (Three) financial/accounting years reckoned from the original bid closing date, irrespective of whether their bid is for all the tendered items or not.		
2.0 "Net Worth" of the bidder should be positive for the financial/accounting year just preceding to the original Bid Closing Date of the Tender.		
3.0 Considering the time required for preparation of Financial Statements, if the last date of preceding financial/accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial/accounting year are not available with the bidder, then the financial turnover of the previous three financial/accounting years excluding the preceding financial/accounting year will be considered. In such cases, the Net worth of the previous financial/accounting year excluding the preceding financial/accounting year will be considered. However, the bidder has to submit an affidavit/ undertaking certifying that 'the balance sheet/Financial Statements for the financial year …….. has actually not been audited so far'.		
Notes: a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:- i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed as in CA certificate document. OR ii) Audited Balance Sheet along with Profit & Loss account. In case of foreign bidders, self-attested/digitally signed printed published accounts are also acceptable. b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.		

	Compliance by Bidder	
C) COMMERCIAL CRITERIA:		
1.0 Bids are invited under Single Stage Composite Bid System. Bidders shall quote accordingly.		
2.0 Bidders must confirm that Goods/materials to be supplied shall be brand new (of recent make) and of the best quality and workmanship and shall be guaranteed for a period of 12 months from the date of supply against any defects arising from faulty materials, workmanship or design. Defective goods/materials or parts rejected by OIL shall be replaced by the supplier at the supplier's expenses without any extra cost to OIL.		
3.0 The prices offered shall have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.		
4.0 Bids received in physical form against online invitation through e-portal shall be rejected (except the documents specifically called for in hard copies, if any). Similarly, Bids received after the bid closing date and time shall be rejected. Also, modifications to bids received after the bid closing date & time shall not be considered.		
5.0 Bids containing incorrect statement shall be rejected.		
6.0 Validity of the bid shall be minimum 90 days from the date of Bid closing. Bids with lesser validity shall be rejected.		
7.0 Evaluation of Bid shall be done on total value as obtained as a sum of all items basis.		
8.0 Bid Security in ORIGINAL shall be furnished by the Bidder as a part of their TECHNICAL BID. The amount of Bid Security and its validity shall be as specified in the Bid Document. Any bid not accompanied by a proper bid security in ORIGINAL shall be rejected without any further consideration. A bid shall be rejected straightway if Original Bid Security is not received within the stipulated date & time mentioned in the Tender and/or if the Bid Security validity is shorter than the validity indicated in Tender and/or if the Bid Security amount is lesser than the amount indicated in the Tender.		
9.0 Successful bidder shall be required to furnish a Performance Security equivalent to ten percent (10%) of total evaluated value of the Purchase Order. Bidders should undertake in their bids to submit Performance Security as stated above		
10.0 A bid shall be rejected straightway if it does not conform to any one of the following clauses: (a) Validity of bid shorter than the validity called for in the Tender. (b) Original Bid Security not received within the stipulated date & time mentioned in the Tender. (c) Bid Security with (i) validity shorter than the validity called for in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.		
11.0 Bidder must accept and comply with the following clauses as given in the Bid Document, failing which bid shall be liable for rejection: i) Liquidated Damages ii) Guarantee of material iii) Arbitration / Resolution of Dispute iv) Force Majeure v) Applicable Laws vi) Performance Security		

ANNEXURE – C

BIDDER'S DECLARATION

The following check list must be completed and submitted with the offer. Please ensure that all these points are covered in your offer. These will ensure proper evaluation at our end.
Please mark Yes or No to the following question, in the right hand column

Sl. No.	ITEM	YES / NO
1	Whether all items to be provided as per technical specifications?	
2	The SPV modules / SPV systems must be tested and approved from MNRE's Solar Energy Centre/ MNRE authorised testing laboratories/centres, for assessing this manufacturer shall furnish latest type test reports. Copies of approval and test reports be attached. Have you submitted?	
3	The bidder should have installed at least one Grid connected Solar PV Power Plant having capacity of not less than 15 kW which should have been commissioned during the last five (05) years {2013-14,2014-15,2015-16 ,2016-17 and 2017-18}. Proof of certificates to be attached. Have you attached ?	
4	The details of projects executed in past five (05) years shall be submitted along with tender documents. A certificate issued by the Govt. Organisation/MNRE Authorised Agency/Project owner towards the satisfactory installation and functioning of the power plants to be furnished by the bidder. Documentary evidence is to be submitted. Have you submitted?	
5	Bidder must agree to carry out comprehensive annual maintenance contract for a period of 25 years from the date of commissioning. Undertaking must be submitted along with the bid. Have you submitted the undertaking?	
6	Inverter: Certificate from MNRE approved test centre. Have you submitted?	
7	DC Cable- TUV Certification. Have you submitted?	
8	Bill of materials of entire PV system. Have you submitted?	

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ANNEXURE –D

INSTRUCTIONS FOR INSTALLATION AND COMMISSIONING:

1.0 The supplier shall execute the jobs as per specifications and OEM guidelines

1.1 Supplier shall issue his/her work persons with all the safety gadgets.

1.2 Quality of jobs carried out by the Supplier shall be of high standard and should be as per the norms of Central Electricity Authority Regulations, 2010, NEC and other electrical standards recognized by the company.

1.3 Installation & commissioning shall be considered as complete only if it meets the full satisfaction of OIL's engineer in charge.

1.4 OIL shall reserve the right to ask the supplier to re-do poor quality job at no extra cost to OIL.

2.0 MANPOWER

2.1 All personnel deputed by the Supplier shall be competent for the job.

2.2 All workers shall be medically fit and able to carry out the various jobs assigned to them.

2.3 Job shall have to be carried out in consultation with OIL's engineer in charge.

2.4 The boarding/lodging, transportation to site, including transportation of materials at site and related costs shall be under the scope of the supplier.

2.5 Loading and unloading of materials/ machines shall be the scope of the Supplier.

3.0 General HSE points to be adopted by the Supplier:

a) It will be solely the Supplier's responsibility to fulfil all the legal formalities with respect to the Health, Safety and Environmental aspects of the entire job (namely, the persons employed by him, the equipment used, the environment etc.) under the jurisdiction of the district of that state where it is operating. The Supplier has to ensure that all sub-Suppliers hired by him/her comply with the same requirement as the Supplier himself/herself and shall be liable for ensuring compliance all HSE laws by the sub-Suppliers.

b) The number of work persons hired/engaged by the Supplier shall depend on the quantum and/or exigency of jobs. Company engineer/ company supervisor may direct the Supplier/Supplier's supervisor to hire more persons if considered essential.

c) It will be entirely the responsibility of the Supplier or his/her Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in OIL's installation and safety of workers engaged by him/her. The

crew members will not refuse to follow any instruction given by company's Safety Officer / Engineer / Official / Supervisor/Junior Engineer for safe working/ operation.

d) Any issues regarding compensation arising out of the job carried out by the Supplier whether related to pollution, Safety or Health will be solely under the scope of the supplier and supplier cannot make OIL liable for the same.

e) Any compensation arising due to accident of the Supplier's personnel while carrying out the job will be solely the responsibility of the Supplier and supplier cannot make OIL liable for the same.

4.0 TOOLS AND TACKLES:

a) All tools and tackles shall be of standard make and must conform to IS or relevant standard.

b) Whenever OIL inspector/ Engineer wishes to inspect, Supplier shall produce the tools and tackles for inspection. Items must be replaced suitably whenever found defective.

c) All tools & tackles required for carrying out the job shall have to be arranged by the supplier.

5.0 CUSTOMER'S ON SITE INSTRUCTION:

a) Bidder shall provide necessary onsite instruction and demonstration on the system related today to day operation & maintenance of the system including basic troubleshooting.

b) On-site instruction shall be considered by the Vendors and costs towards this, if any, shall be deemed to have been included in the overall quoted costs of the system. No additional costs towards to & fro travel, boarding & lodging shall be made on this account.

ANNEXURE – E

COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC)

Comprehensive Annual Maintenance Contract:

Bidder/supplier of the solar PV plant has to take over the annual maintenance of the plant for 25 years once the plant is successfully handed over to OIL after installation & commissioning.

1. BRIEF POINTS REGARDING THECOMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

a) The contractor shall ensure trouble free operation of the complete solar PV plant system.

b) The contractor shall carry out maintenance of the installation as per the guidelines of the scope of work of CAMC given below during the entire contract period. During the inspection/maintenance schedule, the equipment in the solar PV plant will be thoroughly checked for proper operation, cleaned and serviced. However, contractor shall submit a detailed PM schedule once PO is placed. PM schedule shall be approved by OIL before signing of contract.

c) The contractor shall also make any additional visits during the contract period, if required, in case of breakdown or if called by OIL's personnel. The same will be intimated by OIL. During any visit in the contract period, boarding/lodging, transportation of the contractor's personnel and materials required shall have to be arranged by the contractor.

d) The contractor shall also undertake replacement/repair of any defective part of the solar PV plant system free of cost during the contract period.

e) The contractor should frame a mutually agreed bridging document between OIL & the contractor with roles and responsibilities clearly defined.

f) The price quoted shall be firm and binding, for entire 25 years. Contractor shall have to provide an undertaking to this effect along with supply of materials.

g) At the end of the contractual period, the solar PV plant system shall be handed over to OIL in excellent working condition. If any equipment/part/component of the solar PV system is found to be defective due to improper maintenance, it shall be replaced by the contractor free of cost.

2. CONTRACT GUIDELINES: It is the responsibility of the contractor to ensure maximum output from the plant by cleaning/maintaining the equipment on a regular basis during the whole contract period (O&M) as per OEM recommendation. The contractor shall maintain the plant along with spares for 25 years.

TheComprehensive AMC, therefore, shall be of duration of 25 years as follows:

- Comprehensive annual maintenance contract for 25 years after handing over the plant to OIL.

ANNEXURE – E

Once the PO is awarded to the successful bidder for SITC (supply, installation, testing & commissioning), the bidder is to immediately enter into an agreement with OIL for the AMC for a period of25 years.

The CAMC shall include overall supervision of maintenance activities that are required to ensure optimum performance of the Solar PV system as per the performance guarantee parameters submitted and established by the contractor at site and accepted by OIL.
The contractor shall submit a Detailed Annual Maintenance schedule to OIL within 15 days of the placement of the purchase order and award of contract for comprehensive AMC.

2.1 The scope of maintenance of the plant shall cover two parts:

a) Scheduled/ Preventive/ predictive maintenance including cleaning/washing of solar panels

b) Unscheduled/ Breakdown maintenance

a) Scheduled/ Preventive maintenance
The contractor shall have to carry out scheduledand preventive maintenance of the solar PV plant for 25 years (to be carried out after successful commissioning of the completed plant to satisfaction of OIL), which includes maintenance of the plant including regular maintenance.

The contractor shall also submit a detailed report every month to OIL about the maintenance carried out in the concerned period.

For ongoing cleaning and maintenance, the contractor shall provide sufficient manpower to carry out routine maintenance in line with OEM's recommendation. All tools/tackles and consumable materials shall be to contractor's account. However, water for cleaning can be provided from OIL's source.

b) Unscheduled/ Breakdown maintenance
In case of malfunction/breakdown in the plant, the contractor shall have to troubleshoot and rectify the failure/breakdown themselves. Any spares/replacement parts required to put the plant back into service shall have to be supplied by the contractor without any cost to OIL.

2.2 Spares required during AMC
The contractor shall supply all spares required during the AMC period. This includes spares/consumables for scheduled as well as unscheduled/breakdown maintenance.

2.3 Warranty

The Contractor shall be liable to replace any parts/components that have failed, may fail or show signs of defects during operation or due to poor workmanship of contractor’s personnel or from any act or omission by the vendors/contractor for a period of 25 years from the date of handing over and acceptance by OIL of the complete Plant, free of cost during the currency of the contract period.

The contractor will have to hand over the plant to OIL in excellent working condition. After completion of AMC period, the final certificate shall be given by OIL's engineer. If there is any defect found in the component/equipment, the same shall have to be replaced by the contractor within one month, if contractor fails to do so, the same will be repaired/replaced by OIL and the cost shall have to be borne by the contractor.

The above includes, but not limited to, replacement/repair of any defective part (all components including PV modules, arrays, power supply unit, converter, inverter, all electronic cards, modules, fuses, fans, switches, wires and cables, lamps, transformers, cables etc.), civil structurers for supporting the panels, metallic structures, cable mounting system etc. of the solar PV plant.

2.3.1 **Penalty**

In case of breakdown/malfunctioning of the plant after successful installation and commissioning of the plant including acceptance by OIL till the completion of AMC, the contractor shall be allowed a notice period of 10 days to rectify the malfunction /breakdown failing which a penalty of 50% of the per day charge of CAMC contract for each day of delay from 11^{th} day shall be levied till rectification is done.

2.4 Payment against Comprehensive AMC

Against the AMC, the contractor shall raise the bills quarterly and shall be paid against the quarterly bills. If intimated by OIL, the contractor has to visit the site or visit themselves if they want, with their own cost.

Contractor shall submit a monthly certificate/health report/maintenance report to Electrical Engineering department stating the health/condition of the solar PV plant and/or any repair/maintenance job done during their periodic visits to the installation. Bills should be submitted along with the monthly reports. Bills without the accompanying health report/maintenance report will not be entertained.

3. SCOPE OF WORK OFCOMPREHENSIVE ANNUAL MAINTENANCE CONTRACT

3.1 Scheduled/ Preventive maintenance

3.1.1 The contractor shall ensure trouble free operation of the solar PV plant system by undertaking scheduled maintenance of the plant as per the recommendations of the respective OEMs/vendors of component items. The components of the solar PV plant shall be checked for loose connection/heating and the same shall be rectified. Troubleshooting and repair of the solar PV plant shall be done by the contractor.

The contractor shall submit a detailed PM schedule of the plant within 15 days of placement of PO. The schedule shall be approved by OIL before signing thecontract.

3.1.2 During the inspection/maintenance schedule, the equipment in the solar PV plant will be thoroughly checked for proper operation, cleaned and serviced.

3.1.3 Scope of regular maintenance work:

a) Periodicity of maintenance: Every month

b) Maintenance work to be carried out

i) Cleaning of solar PV modules/arrays monthly with water*
ii) Checking and tightening all wiring connections in PV arrays and electrical cables in PCU, earthing and lightning protection system
iii) Checking of proper functioning of PCU and recording all parameters, including any Fault/incipient fault
iv) Measurement of solar irradiation
v) Troubleshoot faults, if any, and rectify the same- if the fault cannot be rectified, the maintenance team will inform OIL and contractor. Contractor will arrange for rectification of the fault with the help of OEM/expert. Spares for regular/breakdown maintenance will be in contractor's scope.

*** Note:**
A) If the weather is dusty, cleaning of PV arrays more than twice every month is to be carried out as per instruction of engineer-in-charge of OIL. No extra charge can be claimed for this.
B) Water will be available free of cost from the installation. Any equipment viz. hose pipe, mops, pressure washer etc. will be in contractor's scope.
3.1.4 In case of any faults/ other problems not directly connected to the solar PV plant, (for example, non-functioning of a light fitting in a room supplied with solar power), the same shall be reported to concerned electrical engineer/Junior Engineer/supervisor.
3.1.5 The contractor shall check the solar PV plant for any damage and ingress of water.
3.1.6 Following reports shall be submitted by the contractor in hard copy during the periodic visits:
a) Healthiness/problems of solar PV plant (as per solar PV plant OEM(s)' guidelines)
b) Operation checked status (of all components of the solar PV plant, changeover system etc.)
c) Report attended and action taken (in details) for malfunctioning solar PV plant
d) Any other relevant point
3.1.7 The starting date for annual maintenance service shall be the date on which the plant shall be handed over to OIL to their full satisfaction.
3.1.8 Any other points specifically not mentioned in the supply, installation and commissioning and annual maintenance services, but required for successful operation shall be in the scope of the contractor.

Any spares/serviceable parts/replacement parts required to put the defective plant back into service shall have to be supplied by the contractor without any cost to OIL.

4. STATUTORY REQUIREMENT FOR WORK

4.1 The contractor shall execute the jobs as per specifications in the Annual Maintenance contract.

4.2 Contractor shall issue his/her work persons with all the safety gadgets.

4.3 Quality of jobs carried out by the Contractor shall be of high standard and should be as per the norms of Central Electricity Authority Regulations, 2010, NEC and other electrical standards recognized by the company.

5. MANPOWER

5.1 All personnel deputed by the contractor shall be competent for the job.

5.2 All workers shall be medically fit and able to carry out the various jobs assigned to them.

5.3 Personnel deployed by the contractor shall be changed/replaced by the contractor if it is desired by OIL to do so. OIL shall not be required to give any reason for such request/instruction.

5.4 Job shall have to be carried out in consultation with OIL's engineer in charge.

6.0 General HSE points to be adopted by the Contractor:

a) It will be solely the Contractor's responsibility to fulfil all the legal formalities with respect to the Health, Safety and Environmental aspects of the entire job (namely, the persons employed by him, the equipment used, the environment etc.) under the jurisdiction of the district of that state where it is operating. The contractor has to ensure that all sub-contractors hired by him/her comply with the same requirement as the contractor himself/herself and shall be liable for ensuring compliance all HSE laws by the sub-contractors.

b) The number of work persons hired/engaged by the contractor shall depend on the quantum and/or exigency of jobs. Company engineer/ company supervisor may direct the contractor/contractor's supervisor to hire more persons if considered essential.

c) It will be entirely the responsibility of the Contractor or his/her Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in OIL's installation and safety of workers engaged by him/her. The crew members will not refuse to follow any instruction given by company's Safety Officer / Engineer / Official / Supervisor/Junior Engineer for safe working/ operation.

h) Any issues regarding compensation arising out of the job carried out by the Contractor whether related to pollution, Safety or Health will be settled and payable by the contractor only.

i) Any compensation arising due to accident of the Contractor's personnel while carrying out the job, will be payable by the contractor only.

j) A contractor employee must, while at work, cooperate with his employer or other persons so far as is necessary to enable compliance with any requirement under the act or the regulations that is imposed in the interest of health, safety and welfare of the employee or any other person.

7.0 FORCE MAJEURE:

a) In the event of either party being rendered unable by force majeure to perform any obligation under the contract, the relative obligation of the party affected by such force majeure shall stand suspended till such time that normal conditions are restored. The term force majeure shall mean act of God, strikes, lockouts or other industrial disturbances, wars (whether declared or not), riots, earth quake, storms, fire etc.

ANNEXURE – F

PRICE BID FORMAT

i) Supply Part

Line item	Description	HSN Code	Qty.	Unit	Quoted Price inclusive of Design, Manufacture, Packing & Forwarding A	Applicable GST B	Total price C= A+B	Freight, insurance inclusive of applicable GST D	Net price E= (C+D)
10	15 KWp roof top solar PV plant (grid connected)		1	NO					

Total cost of supply (E) =

ii) Installation & Commissioning part (All inclusive- Installation, hooking up with grid, laying of cables, testing and commissioning)

Line item	Description	SAC Code	Qty.	Unit	Install. & comm. Cost F	GST G	Total price H= (F+G)
20	Installation & commissioning of 15 KWp roof top solar PV plant (grid connected)		1	AU			

Total cost of Installation & Commissioning (H) =

iii) Comprehensive Annual Maintenance Contract (all inclusive)

(Note: Bidder has to fill up the figure for cost of comprehensive AMC for 25 years as detailed below, otherwise his bid shall be rejected outright)

Line item	Description	SAC Code	Qty.	Unit	Comprehensive AMC cost I	Applicable GST etc. J	Total price K= (I+J)
30	Comprehensive AMC for 1st 5 Years		5	AU			
	Comprehensive AMC for 2nd 5 Years		5	AU			
	Comprehensive AMC for 3rd 5 Years		5	AU			
	Comprehensive AMC for 4th 5 Years		5	AU			
	Comprehensive AMC for 5th 5 Years		5	AU			

Total cost of Comprehensive AMC (K) =

Grand total cost = (E) + (H) + (K) =

Note: Lowest bidder shall be decided based on the total cost of item 10,20 & 30.

B. BID EVALUATION CRITERIA:

The bids conforming to the specifications, terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria shall be considered for further evaluation as per General Terms and Conditions for Local Tender and the Bid Evaluation Criteria given below:

1.0 The evaluation of bids shall be done as per the Price Bid Format (SUMMARY) provided in the Tender / e-tender portal.

2.0 If there is any discrepancy between the unit price and the total price, the unit price shall prevail and the total price shall be corrected accordingly. Similarly, if there is any discrepancy between words and figure, the amounts in words shall prevail and will be adopted for evaluation.

3.0 To ascertain the inter-se-ranking, bid prices shall be converted into Indian Rupees and the comparison of responsive bids shall be made strictly as per online Price bid format, subject to corrections / adjustments, if any.

4.0 Other terms and conditions of the enquiry shall be as per General Terms and Conditions for Local Tender. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BEC / BRC) mentioned here contradict the Clauses in the General Terms & Conditions of Local Tender of the tender and/or elsewhere, those mentioned in this BEC / BRC shall prevail.

ANNEXURE - GOODS AND SERVICES TAX

1. For the purposes of levy and imposition of GST, the expressions shall have the following meanings:

   (a) GST - means any tax imposed on the supply of goods and/or services under GST Law.

   (b) Cess – means any applicable cess, existing or future on the supply of Goods and Services as per Goods and Services Tax (Compensation to States) Act, 2017.

   (c) GST Law - means IGST Act 2017, CGST Act 2017, UTGST Act, 2017 and SGST Act, 2017 and all related ancillary Rules and Notifications issued in this regard from time to time.

2. The rates quoted by the bidders shall be inclusive of all taxes, duties and levies except GST. However, bidders are required to provide separately the rate and amount of all types of taxes, duties and levies. In case, the quoted information related to various taxes, duties & levies subsequently proves wrong, incorrect or misleading, OIL will have no liability to reimburse the difference in the duty/ tax, if the finally assessed amount is on the higher side and OIL will have to right to recover the difference in case the rate of duty/ taxes finally assessed is on the lower side. Further, bidders have to clearly show the amount of GST separately in the Tax Invoices. Further, it is the responsibility of the bidders to make all possible efforts to make their accounting / IT system GST compliant in order to ensure availability of Input Tax Credit (ITC) to Oil India Ltd.

3. Offers without giving any of the details of the taxes (Including rates and amounts) as specified above will be considered as inclusive of all taxes including GST. When a bidder mentions taxes as extra without specifying the rates & amount, the offer will be loaded with maximum value towards taxes received against the tender for comparison purposes. If the bidder emerges as lowest bidder after such loading, in the event of order on that bidder, taxes mentioned by OIL on the Purchase Order/ Contracts will be binding on the bidder.

4. Bidders are required to pass on the benefit arising out of introduction of GST, including seamless flow of Input Tax Credit, reduction in Tax Rate on inputs as well as final goods by way of reduction of price as contemplated in the provision relating to Anti-Profiteering Measure vide Section 171 of the CGST Act, 2017. Accordingly, for supplies made under GST, the bidders should confirm that benefit of lower costs has been passed on to OIL by way of lower prices/taxes and also provide details of the same as applicable. OIL reserves the right to examine such details about costs of inputs/input services of the bidders to ensure that the intended benefits of GST have been passed on to OIL.

5. **When Input tax credit is available for Set Off**
   Evaluation of L-1 prices shall be done based on Quoted price after deduction of Input Tax Credit (ITC) of GST, if available to OIL. OIL shall evaluate the offers on the basis of the quoted rates only and any claim subsequently by the bidders for additional payment/liability shall not be admitted and has to be borne by the bidders

When Input tax credit is NOT available for Set Off

Evaluation of L-1 prices shall be done based on Quoted price only.OIL shall evaluate the offers on the basis of the quoted rates only and any claim subsequently by the bidders for additional payment/liability shall not be admitted and has to be borne by the bidders.

6. Bidders agree to do all things not limited to providing GST compliant Tax Invoices or other documentation as per GST law relating to the supply of goods and/or services covered in the instant contract like raising of and /or acceptance or rejection of credit notes / debit notes as the case may be, payment of taxes, timely filing of valid statutory Returns for the tax period on the Goods and Service Tax Network (GSTN), submission of general information as and when called for by OIL in the customized format shared by OIL in order to enable OIL to update its database etc. that may be necessary to match the invoices on GSTN common portal and enable OIL to claim input tax credit in relation to any GST payable under this Contract or in respect of any supply under this Contract.

7. In case Input Tax Credit of GST is denied or demand is recovered from OIL by the Central / State Authorities on account of any non-compliance by bidders, including non-payment of GST charged and recovered, the Vendor/Supplier/Contractor shall indemnify OIL in respect of all claims of tax, penalty and/or interest, loss, damages, costs, expenses and liability that may arise due to such non-compliance. OIL, at its discretion, may also withhold/recover such disputed amount from the pending payments of the bidders.

PROFORMA - I

AUTHORISATION FOR ATTENDING BID OPENING

Date: _____

TO
CHIEF GENERAL MANAGER (SERVICES)
Materials & Contracts Department
Oil India Ltd., Rajasthan Project
Jodhpur-342005
Rajasthan, India

Sir,

Sub: OIL's e-Tender No. SJI8084P19

We hereby authorise Mr. /Ms. _____ (Name and address) to be present at the time of Pre-Bid Meeting / Un-priced Bid Opening / Price Bid Opening and for any subsequent correspondence / communication of the above Tender due on _____ on our behalf.

Yours Faithfully,

Authorised Person's Signature: _____
Name: _____
Designation: _____
Seal of the Bidder:

Note: This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person who signs the bid.

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