

This tender floated in GeM portal. Bidder has to submit their offer through GeM only.

## 1.0 **EARNEST MONEY DEPOSIT (EMD)**

You have to remit Rs.35,000/- (Rupees Thirty Five Thousand only) towards Earnest Money Deposit by NEFT/BG in favour of M/s IREL (India) Limited drawn on any Scheduled / Nationalised Bank payable at Udyogamandal. NEFT Details as per Annexure-IX. EMD if remitted by NEFT, UTR No. with bank details to be uploaded along with technical bid. If payment is not through RTGS /NEFT, scanned copy of BG shall be attached during submission of tender and original shall be sent to IREL so as the same reaches IREL before the due date of opening of Tender, or else Offer may not be considered for evaluation. No interest is payable on EMD.

In case where the EMD provided in form of BG in the prescribed format attached with the tender, the BG shall be obtained from a scheduled Bank.

The EMD will be forfeited if

(1) the tenderer changes the terms and conditions or prices or withdraws his quotation subsequent to the date of opening or

(2) the tenderer fails to accept the order when placed or fails to commence supplies/works after accepting the order.

EMD shall be refunded to unsuccessful tenderers, within 30 days of placement of order on the successful tenderer. EMD shall be refunded to the successful tenderer on remittance of full Security Deposit (SD) amount. The EMD may be adjusted against security deposit of the successful bidder. However, if EMD is submitted in the form of Bank Guarantee, fresh Bank Guarantee in the prescribed format or demand draft/ bankers cheque is to be submitted towards SD.

## 2.0. **BENEFITS TO MSEs & Start-ups:**

To avail MSE benefits, bidder has to submit UAM (Udyam Aadhar Memorandum) Certificate along with the bid submission, based on new classification criteria as per "Ministry of Micro, Small and Medium Enterprises Notification dated 01.06.2020".

The Micro & Small Enterprises (MSEs) registered with National Small Industries Corporation (NSIC) are eligible for the following benefits:

- (a) Issue of tender document free of cost.
- (b) Exemption from payment of Earnest Money Deposit.

In case where the EMD provided in form of BG in the prescribed format attached with the tender, the BG shall be obtained from a scheduled Bank.

The EMD will be forfeited if

a) The tenderer changes the terms and conditions or prices or withdraw his quotation subsequent to the date of opening.

b) The tenderer fails to accept the order when placed or fails to commence supplies / works / services after accepting the order.

c) In case bidder submits false/fabricated documents.

d) In case bidder fails to submit SD as stipulated in the tender.

**The MSE's / Startups are required to submit valid Registration Certificate issued by NSIC along with tender.**

**MSE's / Startup claiming the above benefits have to exclusively mention in their offer for consideration by IREL(India) Limited.**

## PRE-QUALIFICATION CRITERIA (PQ)

The bidder should meet the following minimum pre-qualification criteria:

### **1.0 TECHNICAL**

The bidder must have successfully commissioned at least one projects/systems having similar installation of minimum 48 kWp capacity in last 7 years as on 30-10-2022, and must have completed satisfactory operation for at least one (1) year.

OR

The bidder must have successfully commissioned at least two projects/systems having similar installation of minimum 30 kWp capacity in last 7 years as on 30-10-202, and must have completed satisfactory operation for at least one (1) year.

OR

The bidder must have successfully commissioned at least two projects/systems having similar installation of minimum 24 kWp capacity in last 7 years as on 30-10-202, and must have completed satisfactory operation for at least one (1) year.

Similar installation means Design, obtaining clearance, supply and installation of grid connected solar power system.

Bidder shall upload the copy of work/purchase orders and Completion certificate/copy of invoice etc. as proof of execution of the work.

### **2.0 FINANCIAL**

Minimum Average Annual Turnover for the last three years (2019-20, 2020-21, 2021-22) should not be less than 10.5 Lakhs.

### **3.0 OTHER ELIGIBILITY CRITERIA**

- 3.1 The bidder must be manufacturer or EPC / Installer must be approved by MNRE.
- 3.2 The PV modules used should be the approved make of MNRE and accepted by ALMM (Approved List of model and manufacturers) for solar photovoltaic modules.
- 3.3 The bidder must not have been debarred / blacklisted by any Govt. Dept., agency, PSUs / institution / agencies / autonomous organizations. The bidder shall submit a self-certification by an authorized person duly notarized to this effect.
- 3.4 Documents against the Pre-qualification criteria as above complete in all respect must be uploaded. Failure to compliance of above shall make the bid incomplete and as such it shall be rejected. In the absence of receipt of Prequalification criteria, the offer will not be considered under any circumstances.

### **4.0 Bidder shall submit relevant certificates to fulfill the eligibility criteria prescribed in the tender document along with following documents/information.**

- 4.1 Bidder's Information Sheet
- 4.2 Product technical specifications
- 4.3 Standards maintained for various components to be used in the project.
- 4.4 Safety consideration for system protection
- 4.5 Warranty certification of equipments/ components
- 4.6 Site visit certificate.

### **5.0 SITE VISIT IS MANDATORY.**

The bidders are advised to inspect the site before submitting their quotation. Interested bidders shall visit the site & carryout the survey on any working days at our specified visiting

hours. Bidder shall upload the site visit certificate duly signed by the IREL, RED officials indicating that the survey is carried out by the bidder. The tender submitted without site visit certificate will be rejected out rightly.

The bidders also advised to study the labour supply / availability, trade union practices and labour rates prevailing Udyogamandal.

**The Bidder is expected to verify all instructions, forms, terms and specifications in the Tender Document. Failure to furnish all information required in the tender document will be at the Bidder's risk and may result in rejection of the bid.**

#### **6.0 MICRO & SMALL ENTERPRISES & STARTUP'S**

6.1 **MSE:** The MSE's registered with National Small Industries Corporation (NSIC) are eligible for relaxation of prior experience / prior turnover criteria subject to meeting of quality and technical specification.

#### **6.2 CONDITIONS FOR START-UP COMPANIES**

1. Subject to meeting of Quality and Technical specifications, IREL (India) Limited may consider allowing the participation of "Start up" companies with capability to execute the services, as per technical specifications/ perform the job as per scope of work specified in the tender and subject to meeting extant & relevant guidelines of Government of India. This should be confirmed and substantiated in the technical bid.
2. The bidder who intends to participate as "Start-up" company should enclose the Certificate of Recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India during submission of technical bid.
3. Prequalification Criteria with respect to Prior Turnover and Prior Experience may be relaxed for Start-ups as per the GOI guidelines.
4. However, there may be circumstances like procurement of items/services related to public safety, health, critical security operations and equipment, etc wherein IREL(India)Limited reserves the right to not consider relaxation of Prior Turnover and Prior Experience for Start-up Companies as per GOI guidelines.
5. Start-up Companies, who are also registered as MSEs and wish to avail the benefits as applicable to MSE, shall submit relevant documents covered under Conditions for Micro and Small Enterprises elsewhere in this tender.

#### **6.3 DECLARATION IN CASE OF MSE BIDDERS / START-UP COMPANIES**

In terms of Tender Conditions applicable for Micro & Small Enterprises (MSEs)/ Start-ups, we hereby declare as under

- a) We are a Micro / Small Enterprise, as on bid closing date of this tender.
- b) We are a service provider for quoted services and valid documentary evidence for same is submitted.
- c) MSE certificate submitted by us is authentic & valid as on bid closing date of this tender.
- d) We are a 'Start-up' company and we are enclosing copy of certificate of recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India.
- e) We declare the above details are true. In case any of the details are found to be false/untrue, our offer will be liable for rejection /cancellation of order/ subjected to appropriate actions as per tender Terms & Conditions.

Authorized Signatory  
(With Company Seal & Signature)

## SPECIAL CONDITIONS OF CONTRACT (SCOC)

### 1.0 SCOPE OF WORK

- 1.1. The broad scope of the work (not limited to) includes Design, Obtaining No Objection Certificate (NOC)/Permission, approval from Central Electricity Company (CEA), Distribution Company-Kerala State Electricity Board (KSEB) for the Installation and grid connectivity, Packing and forwarding, transportation and supply of all the materials up to project site, loading & unloading, storage in safe custody at site, Civil & structural works, Carrying out preliminary tests at site, Installation, Performance testing and commissioning of Grid Connected 60 kWp Solar PV System at the Administrative Building roof top at our 11/0.440KV substation of IREL, RED, Udyogamandal.
- 1.2. Inter connection of solar power plant, connection to net metering facility at our 11/0.415 KV substation of IREL, RED, Udyogamandal or the location identified by the CEA, Power Distribution Company (KSEB) for grid connectivity.
- 1.3. The successful contractor shall follow the procedure, take all permits, approval, license, Insurance etc. as applicable from the concerned authorities as per the procedure Distribution Company (CEA & KSEB) .
- 1.4. The successful contractor shall carry out the operation and maintenance of the systems including supply of spares and consumables required if any during for **a period of 5 years** after commissioning, i.e during the warranty period. The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective SPV modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 5 years. **SPV modules shall be surface cleaned once in six months without charging extra cost.** During the period the bidder shall undertake scheduled maintenance as well as breakdown maintenance without fail.
- 1.5. The successful contractor shall take AMC for the 5 years (i.e after completing warranty period and from 6<sup>th</sup> year to 10<sup>th</sup> year) on chargeable basis. Spares for the maintenance work during the AMC period shall be provided either by IREL, RED on free of cost or shall be supplied by the bidder on chargeable basis. During the period the contractor shall undertake scheduled maintenance as well as corrective maintenance without fail. **Scheduled maintenance shall be carried once in three months, irrespective of the no. of breakdown maintenance.**
- 1.6. Bidders are advised for site visit before submitting the quote. The bidder shall carry out Shadow Analysis at the site and accordingly design string & array layout considering the optimal utilization of space, material and labour.
- 1.7. Successful contractor shall submit single line diagram for the plant indicating all wiring details, connecting details, array layout drawings along with shadow analysis report to IREL, RED before commencement of installation work.
- 1.8. The successful contractor shall, on behalf of IREL, take necessary action through IREL for obtaining the required feasibility report, approval/permissions for the installation of solar power plant and its registration including connectivity in NET metering from respective distribution utility department (Feasibility and registration fee shall be made by IREL, RED). The successful contractor should facilitate submission of all required applications by IREL and follow up and liasoning for obtaining NOC for the Net metering and grid connectivity etc. for the completion of the work.
- 1.9. On Grid Rooftop Solar power plant consists of :-
  - 1.9.1. Mono Crystalline PERC Solar Photo Voltaic (SPV) modules array,
  - 1.9.2. Module Mounting Structure,
  - 1.9.3. Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls, metering & Protections, interconnect cables, Junction boxes and switches.
  - 1.9.4. Earthing and lightening protections.
  - 1.9.5. IR/UV protected PVC Cables, pipes, Hardware and accessories, etc.
  - 1.9.6. All these hardware should conform to the BIS or IEC or international specifications.
- 1.10. Grid tied Rooftop Solar power plant without battery and shall be designed with necessary features to supplement the grid power during day time.

- 1.11. The contractor shall ensure installation of NET Meter/connectivity in coordination with Division/Sub Divisional offices of respective Govt. Departments. The testing and synchronization of Net Meter shall be ensured by the Bidder in coordination with TMR & Divisional office of respective Govt. Departments before Commissioning of the system. Net-meter must be tested & approved by respective Govt. Departments or other agencies as applicable.
- 1.12. Any accessories/components/materials etc. which have not been specifically mentioned in this Contract but which are necessary for the completeness of the project in all respect shall be provided by the contractor without any extra cost and within the time schedule and for efficient and smooth operation and maintenance of the SPV plant.

1.13 **Background**

IREL (India) Limited (Formally Indian Rare Earths Limited) Rare Earths Division (RED) Udyogamandal, Kerala is a central PSU Category 1, is presently processing rare chloride flakes to high pure rare earths (HPRE) compounds and its value addition operations. RED Electrical substation is 11/0.415 KV system, with a total connected load of 3500 KW and maximum contract demand of 800 KVA. DG set 320 KVA as standby power supply unit.

Already a 60 kWp grid connected solar power plant in service. This tender is intended to go in addition to existing solar system.

**2.0 SOLAR PHOTOVOLTAIC MODULES**

- 2.1. The Modules convert the sunlight reaching the panel into DC Power. The amount of power they produce is roughly proportional to the intensity and the angle of the light reaching them. *Contractor* has to ensure the proper positioning of the Modules to take maximum advantage of available Sunlight within site constraints with the Sun's movements during the day.
- 2.2. The PV modules used should be one of the approved make of MNRE and accepted by ALMM (Approved List of model and manufacturers) for solar photovoltaic modules.
- 2.3. The solar PV modules shall consist of required number of Monocrystalline PERC PV Modules (IREL reserves the right to have the modules tested in its presence prior to dispatch). The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-2- requirements for construction & Part 2 - requirements for testing, for safety qualification or equivalent IS.
- 2.4. Contractor shall follow the latest Engineering Practice, ensure long-term compatibility requirements and continuity of equipment supply and the Safety of the Operating Staff.
- 2.5. Contractor is required to optimize generation of electricity in terms of kWh generated with available Solar Radiation at the site (may be obtained through use of efficient electronics components, lower cable losses, maximization of power transfer from PV Modules to Converter and the Grid etc).
- 2.6. The Solar power plant Systems shall support Remote Monitoring of important Parameters. The system shall be designed such that personnel without any background knowledge in Microprocessor-based Technology are able to operate the System. The operator interface shall be such that operating personnel shall be able to operate the system easily after having received some basic training.
- 2.7. The Manufacturer shall arrange Certification on Qualification of PV Modules.
- 2.8. The SPV Cells shall be manufactured using unique highly efficient diffusion process or any other technology so as to ensure uniform diffusion profiler to achieve close spread and higher efficiency for each cell.
- 2.9. Stabilized net output of the Solar PV Array for the Solar Power System should not be less than the Nominal design level for the System under Standard Test Condition.
- 2.10. Each Solar PV Module shall be warranted by the Manufacturer for at least 90% of its rated power for 10 Years from the date of System acceptance.

- 2.11. The Contractor shall provide the sample Solar PV Module electrical characteristics including current-voltage (I-V) performance curves and temperature co-efficient of power, voltage and current. However, the tabulated document with all the relevant data like voltage, current, power output for all the modules also to be provided.
- 2.12. The PV Modules shall be suitable for continuous outdoor use.
- 2.13. The PV Module 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.
- 2.14. PV Module shall be provided with frame of anodized channels for size and simplicity in installation offered as a single module or series parallel combination of modules. The PV Module shall be provided with screen-less frame with Solar Cable and Connector.
- 2.15. Since the PV modules is erected in a corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701. The PV modules shall also be capable of resisting heavy wind load of 150 KM/Hr.
- 2.16. The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 500 Wp and above wattage.
- 2.17. Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- 2.18. PV modules must be with test certificate from the manufacturer and approval certificate from MNRE/IEC authorized test centres and the test certificate shall be provided along with the supply of PV module.
- 2.19. The module frame shall be made of corrosion resistant materials, preferably having 4 dip anodized aluminium.
- 2.20. The Contractor shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
- 2.21. Other general requirement for the PV modules and subsystems shall be the Following:
  - 2.21.1. The rated output power of any supplied module shall have tolerance of +/-3% max
  - 2.21.2. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2% from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
  - 2.21.3. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall be weather proof having hinged, lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
- 2.22. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).
  - 2.22.1. Name of the manufacturer of the PV module
  - 2.22.2. Name of the manufacturer of Solar Cells.
  - 2.22.3. Month & year of the manufacture (separate for solar cells and modules)
  - 2.22.4. Country of origin (separately for solar cells and module)
  - 2.22.5. I-V curve for the module Wattage,  $I_m$ ,  $V_m$  and FF for the module
  - 2.22.6. Unique Serial No and Model No of the module
  - 2.22.7. Date and year of obtaining IEC PV module qualification certificate.
  - 2.22.8. Name of the test lab issuing IEC certificate.
  - 2.22.9. Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001.
- 2.23. The positioning or tilting of solar panels shall be according to the shade analysis to movement of sun above the region.

### **3.0 ARRAY/MODULE MOUNTING STRUCTURE**

Module mounting structures shall meet the following specification:



- 3.1 Hot dip galvanized (80 microns and above) GI mounting structures of Tata steel or Apollo may be used for mounting the modules/ panels/arrays. (Test certificate for the 80Micron thickness shall be provided by the party at the time of supply of structural materials for the clearing the payment part.)
- 3.2 The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.
- 3.3 Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, and nuts & bolts (SS Fasteners). Necessary protection towards rusting need to be provided either by coating or anodization. **The structural materials shall be painted with 2 coat corrosion resistant paint.**
- 3.4 Structures also can be used which can withstand the wind speed of respective wind zone roughly 150km/ hour.
- 3.5 Special care should be taken while designing all structures for modules to cater to heavy rainfall.
- 3.6 Each structure should have angle of inclination as per the site conditions to take maximum duration for the fall of sun light. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- 3.7 PV modules shall be secured to support structure using screw fasteners and/or metal clamps. Screw fasteners shall use existing mounting holes provided by module manufacturer. No additional holes shall be drilled on module frames
- 3.8 Adequate spacing shall be provided between any two modules secured on PV array for improved wind resistance.
- 3.9 The fasteners used should be made up of **stainless steel**. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- 3.10 Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- 3.11 The structures should be laid on the rooftop and proper drainage of rain water over terrace through the installation area should be maintained.
- 3.12 The structures (lugs) should be suitably loaded with reinforced concrete blocks of appropriate size 300mm x 300mm x 300mm cubical shape with M25 concrete mixture. Waterproofing shall be provided in the areas where RCC blocks are placed on the terrace
- 3.13 The minimum clearance of the structure from the roof level should be sufficient to allow ventilation for cooling, also ease of cleaning and maintenance of panels as well as cleaning of terrace.
- 3.14 The array shall be located sufficiently inside the boundary wall of the terrace (parapet wall) and should not be projecting out. PV array shall be installed in the terrace space free from any obstruction and/or shadow. PV array shall be installed utilizing optimum terrace space to minimize effects of shadows due to adjacent PV panel rows.
- 3.15 Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection, ease of installation, replacement, cleaning of panels and electrical maintenance etc.
- 3.16 Each array may be provided with two bird repellents spikes at a level higher than the upper edge of the array. The location of the spike should be selected for minimum shadow effect.

#### **4.0 ARRAY/ MAIN JUNCTION BOXES (JBs)**

- 4.1 The Junction Boxes (JBs) made of **GRP/ FRP/with full dust, water & vermin proof** arrangement shall be provided. All wires/cables shall be terminated through copper cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- 4.2 Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208. Hinged door with EPDM rubber gasket to prevent water entry. Single/double compression cable glands for the cables.
- 4.3 MCB protection shall be provided for each string for +ve cables.

- 4.4 Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs)/SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- 4.5 Suitable markings shall be provided on the bus bar for easy identification and suitable cable glands with ferrules must be fitted at the cable termination points for identification.
- 4.6 Array Junction Box shall **IP 65(for outdoor& indoor)** as per IEC 60529 and shall be provided with fuses and Isolators of suitable ratings.
- 4.7 ACDB shall have surge protection device of class 2 as per IEC 60947/60364-5-53, to protect inverters from surges in the AC line.
- 4.8 AJBs/MJB may be kept below the modules. In case of need this can be installed on wall or rooftop. ACDB shall put at safe distance from DCDB/AJBs/MJBs to avoid Eddy current interference.

## 5.0 DC DISTRIBUTION BOARD

- 5.1 Dust & vermin proof Enclosures of Polycarbonate/GRP/FRP/Powder coated Aluminium/ Cast Aluminium Alloy and shall have **IP 65(outdoor &indoor)** compliant to IEC 60529.
- 5.2 The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.
- 5.3 Suitable cable entry points with cable glands and ferrules shall be provided.
- 5.4 DC SPD of type 2 compliant to IEC 60497 with fuse shall be provided.
- 5.5 Design ambient temperature shall be 0-60 deg C.

## 6.0 AC DISTRIBUTION PANEL BOARD

- 6.1 AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and shall have necessary over current & surge protection.
- 6.2 All switches and the circuit breakers, connectors shall conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.
- 6.3 All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase/single phase, 415/230 volts, 50 Hz.
- 6.4 The changeover switches, cabling work shall undertaken by the bidder as part of the project.
- 6.5 Suitable cable entry points with cable glands and ferrules shall be provided.
- 6.6 DC SPD of type 2 compliant to IEC 60497 with fuse shall provide.
- 6.7 Design ambient temperature should be 0-60°C. 95 percent humidity and dusty weather.
- 6.8 All panel boards shall be **of IP 65 protections**.
- 6.9 All panels shall confirm to Indian Electricity Act & rules (till last amendment)
- 6.10 All the 415 V or 240 V devices/ equipment like bus support insulators, circuit breakers, SPDs, VTs, etc. mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions
  - 6.10.1 Variation in Supply Voltage +/- 5% max
  - 6.10.2 Variation in Supply frequency +/- 2 Hz max
- 6.11. All DC and AC switch gears shall be of the make L&T/Seimens/ Schneider/Eton

## 7.0 GRID TIED POWER CONDITIONING UNIT/INVERTER

- 7.1 The DC power produced is fed to **String Inverter** for conversion into AC. In a grid interactive system, AC power shall be fed to the grid at three phase 415/400VAC bus. Power generated from the solar system during the day time is utilized fully by powering to the grid as long as grid is available.
- 7.2 The output of the inverter must synchronize automatically it's AC output to the exact AC voltage and frequency of the grid.
- 7.3 Inverter shall continuously monitor the condition of the grid and in the event of grid failure, the inverter automatically switches to off-grid supply within a cycle. The solar system is resynchronized with the grid within two minutes after the restoration of grid or DG set.

- 7.4 Grid voltage shall also be continuously monitored and in the event of voltage going below a preset value and above a pre-set value, the solar system shall be disconnected from the grid within these time.
- 7.5 Metal Oxide Varistors (MOVs) shall also be provided on DC and AC side of the inverter.
- 7.6 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.
- 7.7 The inverter shall be at pure sine wave inverter for grid interactive PV system.
- 7.8 Following shall also be displayed Protective function limits (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.)
- 7.9 The inverter enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.
- 7.10 All doors, covers, panels and cable exit shall be provide with gasket or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks.
- 7.11 The system should automatically „WAKEUP“ during day time and “SLEEP” during night.
- 7.12 An energy meter shall be installed in between the solar grid inverter and the building distribution board to measure gross solar AC energy production (“the solar generation meter”)
- 7.13 Operation Mode:
- 7.13.1 Night or Sleep Mode: where the Inverter is almost completely turned off, but control system and time shall be still in operation, losses shall be less than 2 W per 5kW.
- 7.13.2 Standby Mode: Where the control system continuously monitors the output of the solar generator until pre-set value is exceeded(typically10W).
- 7.13.3 MPP tracking mode: The control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner shall automatically re-enter standby mode as input power reduces below the standby mode threshold. Front panel shall provide display of status of the inverter.
- 7.14 The Power-Conditioning Unit (PCU) should contain a Maximum Power Point Tracker (MPPT), Grid side Converter and Grid side Filter
- 7.15 The PCU must automatically synchronize with the grid and shall shutdown in case off and very low power generation, and wake-up automatically from shutdown. The power conditioning unit/inverter shall also be DG set interactive. Inverter output should be compatible with the grid frequency.
- 7.16 Typical technical features of the **String inverter** shall be as follows:
- 7.16.1 Switching devices: IGBT/MOSFET
- 7.16.2 Control: Microprocessor type (DSP)
- 7.16.3 Nominal AC output voltage and frequency: 415V, 3 Phase, 50 Hz
- 7.16.4 Grid Frequency Synchronization range: +/- 2 Hz
- 7.16.5 Ambient temperature considered: 0°C to 60 °C
- 7.16.6 Humidity: 95% non-condensing
- 7.16.7 Protection of enclosure IP 20(Min) for indoor & IP 65 for Outdoor.
- 7.16.8 Grid frequency tolerance range: within +/- 3Hz
- 7.16.9 Grid voltage tolerance: -20 % , +15%
- 7.16.10 No load losses: less than 1% of rated power
- 7.16.11 Inverter efficiency: 98% or above
- 7.16.12 MPPT efficiency: 98 or above
- 7.16.13 THD: < 3%
- 7.16.14 PF: >0.98 at normal power
- 7.17 PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

- 7.18 The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power. Inverter shall have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- 7.19 Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- 7.20 The power conditioning units/inverters shall comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1, 2, 14, 30) /Equivalent BIS Std.
- 7.21 The charge controller (if any)/MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS standard. The junction boxes/enclosures should be IP 65(for outdoor & indoor) and as per IEC 529 specifications.

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

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

## **9.0 PROTECTION**

- 9.1 The SPV power plant should be provided with Lightning and over voltage protection, connected with proper earth pits. The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components. The source of over voltage can be lightning or other atmospheric disturbance.

### **9.1.1 LIGHTNING PROTECTION**

- 9.1.1.1 The lightning arrester shall be made of minimum 20 mm diameter x 1000 mm long x 100micron, Nickel sealed copper bonded rod with copper spike as per provisions of IS 2309-1969. Necessary concrete/structural foundation for holding the lightning arrester in position shall be made after giving due consideration to maximum wind speed. The lightning arrester shall be earthed through 25 mm X 3 mm thick copper flat to earth pits/earth bus with proper Insulation. Height of Lightning arrestors from Array Structure should be minimum 4metres.
- 9.1.1.2 Most areas of the State being prone to lightning, Type-II SPDs shall be included as a mandatory requirement.
- 9.1.1.3 Similarly Type I+II SPD shall also be provided on the grid side in ACDB or PCU to protect the PCU from damage

### **9.1.2 EARTHING PROTECTION**

- 9.1.2.1. Each array structure of the PV yard shall be grounded/ earthed properly as per IS: 3043-1987. In addition, the lightning arrester, solar power plant/masts shall also be earthed inside the array field. Earth Resistance shall be tested in presence of IREL as and when required after earthing by calibrated earth tester. PCU, ACDB, DCDB, lightning arrestors should also be double earthed separately as per the guide lines of KSEBL.
- 9.1.2.2. Earth resistance shall not be more than 1 Ohm. It shall be ensured that all the earthing points are bonded together to make them at the same potential.
- 9.1.2.3. Earthing rod 16 mm diameter x 1200 mm long x 250microns with tinned & pressed terminals.

Double earthing - Dual down conductor & dual earth pit for module mounting structure, lightning arrester and body of equipment's to be provided.

### 9.1.3 **SURGE PROTECTION**

- 9.1.3.1 Internal surge protection shall consist of surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)
- 9.1.3.2 Surge protection device should be provided on both the DC side and the AC side of the solar PV system. It should have protection voltage of 2.5 kV & Nominal Discharge current of 5 kA (8/20)  $\mu$  sec.
- 9.1.3.3 The DC surge protection devices (SPDs) should be Type 1 + 2 industrial as per CEA norms for industrial units installed in the DC distribution box adjacent to the solar inverter.
- 9.1.3.4 The AC SPDs shall be installed in the AC distribution box adjacent to the solar inverter.
- 9.1.3.5 The SPD's earthing terminal should be connected to earth through the abovementioned dedicated earthing system.
- 9.1.3.6 SPDs shall be of the make Mersen/Eaton/ Schneider/Seimens

### 9.1.4 **GRID ISLANDING**

- 9.1.4.1 In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.
- 9.1.4.2 A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel

## 10. **CABLES & WIRINGS**

- 10.1 The Cable & Wires shall comply with IEC60227 or IS694 & IEC60502 or IS1554 BSEL50618 (for DC cables for PV systems).
- 10.2 All copper flexible cables shall comply with IS651 and make should be Lapp, Polycab.
- 10.3 Colour code shall be followed for over all wiring i.e, red for positive, black for negative, green for earth.
- 10.4 All cable shall run in suitable PVC Conduits. No cable shall be directly exposed to sunlight.
- 10.5 Cable Sizes should be as per the given Current and Voltage ratings.
- 10.6 Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) shall be insulated with a special grade PVC compound formulated for outdoor use.
- 10.7 Cable Routing/ Marking: All cable/wires shall be routed in a GI/PVC/FRP cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
- 10.8 The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
- 10.9 The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

## 11.0 **REMOTE MONITORING SYSTEM**

- 11.1 Data Acquisition System shall be provided for the solar PV plant.
- 11.2 Data Logging Provision for system parameters, plant control, monitoring time of operation, energy generation Co2 saved, performance ration etc shall be provided.

- 11.3 Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.
- 11.4 Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system
- 11.5 T The following parameters are accessible via the operating interface display in real time separately for solar power plant:
  - 11.5.1 AC Voltage.
  - 11.5.2 AC Output current.
  - 11.5.3 Output Power
  - 11.5.4. Power factor.
  - 11.5.5 DC Input Voltage.
  - 11.5.6 Input Current.
  - 11.5.7 Time Active.
  - 11.5.8 Time disabled.
  - 11.5.9 Times Idle.
  - 11.5.10 Power produced
- 11.6 Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage).
- 11.7 All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values previous values for up to a month and the average values) shall be made available for energy auditing through the internal microprocessor and shall be read on the digital front panel.
- 11.8 PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.
- 11.9 Computerized DC String/ Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.
- 11.10 String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.
- 11.11 Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
- 11.12 The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.
- 11.13 All instantaneous data shall be shown on the computer screen.
- 11.14 Software shall be provided for USB download and analysis of DC and AC parametric data for plant.
- 11.15 Provision for Internet monitoring and download of data shall be also incorporated.
- 11.16 Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
- 11.17 Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
- 11.18 Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.
- 11.19 Remote Monitoring and data acquisition through Remote Monitoring System software at IREL with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on IREL server and portal in future shall be kept.

## **12.0 NET METER**

- 12.1 IREL, RED is already connected through NET meter for the existing 60 kWp grid connected solar power plant. Further connectivity/modification required for connection of the new 60 kWp power will be in the scope of the bidder subjected to the approval/sanction from CEA & KSEBL.
- 12.2 If not the approval/sanction from CEA & KSEBL, The bidirectional electronic energy meter (HT NET meter, 0.5Sec. class) shall be installed for the measurement of import/Export of energy.
- 12.3 The Contractor must take approval/NOC from the Concerned for KSEB connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to IREL before commissioning of SPV plant.
- 12.4 Reverse power relay shall be provided by contractor (if necessary), as per the local KSEB requirement. The On-grid solar power plant will be connected to the grid through a net meter as per the single line diagram indicated in this document. The indicative specification of the Net-meter is as follows:

## **13.0 GENERATION METER**

As suggested by the KSEB, Three Phase Four wire, 3 x 240VAC, 20-100Amps ISI marked Direct current operated Energy Meter, DLMS Cat C having calibration LED, AMR compliance & front sealing facility to be used as generation meter up to 20KW with Accuracy:1.0 GPRS/GSM Modem with connecting cable & antenna for running smoothly up to 10 year for AMR facility.

## **14.0 DISPLAY BOARD**

- 14.1 Display board of size 3 ft x 3 ft that gives detailed circuit diagram of the system with its description should be provided.
- 14.2 Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Text of the signage may be finalized in consultation with IREL.

## **15.0 SPARES LIST**

A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc. along with spare set of PV modules be indicated, which shall be supplied along with the equipment

## **16.0 DRAWINGS & MANUALS**

- 16.1 Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be provided to IREL, RED.
- 16.2 Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power calculations, synchronization along with protection equipment.
- 16.3 Approved ISI and reputed makes for equipment be used.
- 16.4 For complete electro-mechanical works, bidders shall supply complete design, details and drawings to be submitted to IREL
- 16.5 The following shall be submitted to EIC along with the final bill for the certification and recommendation of bill submitted.
- 16.5.1 Single Line Diagram for the plant indicating all wiring details, connecting details.
- 16.5.2 Array layout drawings along with shadow analysis report.
- 16.5.3 Commissioning report
- 16.5.4 Catalogues of critical components
- 16.5.5 JCC

- 16.5.6 Warranty certificate/Warrantee certificates issued for major components by OEMs
- 16.5.7 I-V Curves of Solar modules
- 16.5.8 Operation manual
- 16.5.9 Dos & Don'ts in the form of a booklet
- 16.6. **Following drawings shall be submitted by contractor after placement of LOA/work order.**
- 16.6.1. General Arrangement of System (GAD)
- 16.6.2. Part drawing of structures
- 16.6.3. Complete Electric drawing of system (detailed SLD)
- 16.6.4. Weight analysis of system
- 16.6.5. Civil foundation drawings
- 16.6.6. Wind Speed withstand capacity certificate duly certified by chartered engineer
- 16.6.7. Agreement to undertake Operation and Maintenance for a period of 10 years (First five years under performance warranty period and remaining five years under the AMC period).

**17.0 STANDARDS / CERTIFICATES**

- 17.1. The goods supplied and works executed under this contract shall confirm to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be applicable. 17.2. The Bidder shall submit all the valid test certificates and reports of the system components following the latest MNRE Guidelines and the same components shall be supplied for which the test reports/ certificates are submitted.
- 17.3. The work shall be carried out in the best workman like manner in conformity with this specification, the relevant specifications/codes of practice of Indian Standard Institution, approved drawings and instructions of the Engineer-in-Charge or his authorized representative issued from time to time. In case of any conflict between the standards, the instructions of Engineer-in-Charge of IREL, RED shall be binding.
- 17.4. Quality certification and standards for grid-connected solar Roof – Top Net Metering PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected solar Ground Mounted Net Metering PV systems/ plant must conform to the relevant standards with latest revisions and certifications given below:

<b>Solar PV Modules/Panels</b>	
IEC 61215/ IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1 /IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating-: Irradiance and temperature performance measurements, and power rating
IEC62716	Photovoltaic (PV) Modules – Ammonia (NH3) Corrosion Testing (As per the site condition like dairies, toilets)
IEC61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
<b>Solar PV Inverters</b>	
IEC62109-1, IEC62109-2	Safety of power converters for use in photovoltaic power systems – Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
IEC/IS 61683 (as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading)



IEC 62116/UL1741/ IEEE1547(as applicable)	Utility-interconnected Photovoltaic Inverters-Test Procedure of Islanding Prevention Measures
IEC60255-27	Measuring relays and protection equipment - Part 27: Product safety requirements
IEC60068-2 /IEC 62093 (as applicable)	Environmental Testing of PV System-Power Conditioners and Inverters
<b>Fuses</b>	
IS/IEC 60947 (Part 1, 2 &3) EN50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part1: General rules b) Low-Voltage Switchgear and Control-gear, Part2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part3: Switches, dis- connectors, switch-dis-connectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems - Safety
IEC 60269-6	Low voltage fuses, part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems.
<b>Surge Arrestors</b>	
BFC17-102:2011	Lightening Protection Standard
IEC 60364-5- 53/ IS15086-5	Electrical installations of buildings-Part5-53: Selection and erection of electrical equipment-Isolation, switching and control
IEC61643-11:2011	Low-voltage surge protective devices-Part11: Surge protective devices connected to low-voltage power systems-Requirements
<b>Cables</b>	
IEC 60227/IS694, IEC60502/IS1554 (Part1 &2)/IEC69947 (as applicable)	General test and measuring method for PVC(Polyvinylchloride)insulated cables (for working voltages up to and including 1100V, and UV resistant for outdoor installation)
BSEN50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
<b>Earthing / Lightning</b>	
EC 62561 Series (Chemical earthing) (as applicable)	IEC 62561-1 Lightning protection system components (LPSC)- Part1: Requirements for connection components IEC62561-2  Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds.
<b>Junction Boxes</b>	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use.
<b>Energy Meter.</b>	
IS 16444 or as specified by the DISCOMs.	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 – Specification (with Import & Export/Net energy measurements).
<b>Solar PV Roof Mounting Structure</b>	
IS 2062/ IS 4759	Material for the structure mounting

Note- Equivalent standards may be used for different system components of the plants

## **18.0 WARRANTY**

18.1 The complete 60Kwp solar power plant shall be under warranty for 5 years for its trouble free operation to the desired output, from the date of Commissioning and Acceptance of the solar power plant. It should covered all the Manufacturing defects, Spare Parts, Worn out Parts, Electrical & Electronic Equipments/Components and Service charges, etc. during the warranty period, apart from the specific unit warranty.

18.1.1 Solar panel : 10 years

18.1.2 PCU and electronic components/systems : 5 years

18.1.3 Electrical components/systems : 2 Years

## **19.0 COMMENCEMENT AND COMPLETION PERIOD**

19.1 The work shall be carried out without effecting the normal functioning of the company. Qualified supervisor shall be present throughout the installation period of the solar power plant. Supervisor shall take necessary safety permit from the safety department and follows the safety norms of the company.

19.2 Work shall be commenced within 15 days from the acceptance of the work order. The date of acceptance of the work order shall be defined as the date of signing the letter of acceptance of the work order or 7 days from the date of dispatching of the order whichever is earlier.

19.3 The entire activity as specified in the work order shall be completed within **180 days** from the date of commencement of work. In case any stoppage of work due to the reason attributable to IREL, RED or CEA/KSEBL procedural delay after commencement of the work, the number of days stopped shall be extended for the completion of the work. Necessary date wise records to be provided by the contractor duly verified/ recommended by the EIC.

## **20.0 PAYMENT TERMS**

20.1 70% payment less statutory deductions for the supply part as per Part A of BOQ shall be released after successful supply of materials and acceptance by EIC within 30 days on submission of clean and clear bill/invoice.

10% payment for the supply part and 80% payment less statutory deductions for Installation and commissioning - Part B for the completed portion will be released after successful completion of Installation and commissioning the solar power plant as per the Bill of quantities /price schedule and acceptance of EIC within 30 days on submission of clean and clear bill/invoice.

13% payment of Supply part and Installation & commissioning part shall be released after successful charging of the system and streamline the plant with grid connectivity.

Remaining 7% payment of supply, Inst. & commissioning along with security deposit shall be released after completion of 5 years after the successful streamline of the solar power plant. The same can be released against bank guarantee for the value and said period.

## **20.2 ANNUAL MAINTENANCE CONTRACT (AMC) CHARGES (PART-C)**

AMC charges for each year shall be released on half yearly basis, on submission service reports and Tax invoice, after completion of each half year from sixth year onwards. No separate order will be released for the AMC

## **21.0 PENALTY**

As per MNRE standards, solar power plant shall generate 4Kwh/KW/Hr under standard operating conditions. The performance ratio (PR) of the plant during the operation and

maintenance period shall be evaluated on annual basis. If the plant fails to achieve the minimum requirement of 75% performance ratio, pro rata reduction in the bills shall be done using the following formula.

$PR = \text{Actual reading of plant output in Kwh} / \text{Calculated nominal plant output in Kwh.}$

Nominal plant output = Solar irradiation at the generating surface \* relative efficiency.

Kerala State Electricity Board industrial tariff shall be taken as base for calculating penalty.

If the plant continues to underperform for two consecutive years, IREL (India) Limited, reserves the right to forfeit security deposit submitted by the contractor.

## 22.0 **ACCEPTANCE OR REJECTION OF BIDS:**

- 22.1. IREL, RED reserves the right to accept or reject any bid or all the bids and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability or any obligation to inform the affected bidder or bidders of the grounds for the said action.
- 22.2. Any Bid with incomplete information is liable for rejection.
- 22.3. For each category of pre-qualification criteria, the documentary evidence is to be produced duly attested by the authorized representative of the bidder and serially numbered. If the documentary proof is not submitted for any/ all criteria the Bid is liable for rejection.
- 22.4. If any information given by the bidder is found to be false/fictitious, the Bidder will be debarred for 3 years from participating in any other tenders of IREL, RED and will be black listed.

## 23.0 **OTHER TERMS**

- The distance between the proposed site and substation for interconnection of solar plant is approximate 200 Meters.
- The generation meter has to be installed at the Electrical Substation.
- The bidder has to comply all necessary regulation of CEA, State Distribution Company (DISCOM), i.e. Kerala State Electricity Board Limited (KSEBL).
- Necessary statutory procedures related to KSEBL HT consumer has to be followed and complied
- This NIT is a turnkey project, as such any specific item is not described in the NIT but required to be carried for the successful execution of the contract is deemed to the part of the quoted rate.

**BILL OF QUANTITIES**

<b>Supply part (PART - A)</b>			
Sl No.	Description	Qty	Unit
01	Supply of 60Kwp Solar PV modules as specified in the technical specification.	01	Lot
02	Supply of 60Kwp Solar string Inverter as specified in the technical specification.	1	No.
<b>Installation and commissioning part (PART - B)</b>			
03	Supply and Installation of GI structural materials (Tata steel/Apollo) and SS fasteners.	01	Lot
04	Supply and installation of DCDB with type1+2 DC SPD, DC Breaker, suitable capacity copper conductor cable, DC string disconnecter fuse ACDB with type2 AC SPD, MCCB, Isolators, Reserve Power Relay (RPR), MFM, Phase Indicators, suitable capacity copper conductor cable etc. as per relevant IS and norms of CEA/ KSEB	01	Set
05	Supply, testing/calibration & installation of HT or LT Net meter (3 Phase Bidirectional TOD Meter, as per Electrical Inspectorate requirement) and Solar Energy meter (3 phase unidirectional TOD meter) as per KSEB requirement (all meters shall be tested/calibrated by KSEBL or authorized testing centre of KSEBL).	01	Set
06	Supply and installation of Earthing system and Lightning arrestors. (Separate earthing shall be provided for DC system, AC system and Lighting arrestor as per relevant IS, CEA and KSEB norms.	01	Lumpsum
07	Supply and Installation of interconnecting panels to Grid as per site conditions.	01	No.
08	Supply and installation of data monitoring system, SCADA for data acquisition and transferring facility.	01	Lumpsum
09	Supply of HT CTs and HT PTs as per KSEB specifications (if required)	01	Set
10	Charges for scheme drawing preparation, scheme approval, energizing approval, Inspection, testing, etc. from Central Electricity Authority (CEA) and KSEB (*)	01	Lumpsum
<b>AMC Charges (PART -C)</b>			
11	AMC Charges (6 <sup>th</sup> year)	01	Lumpsum
12	AMC Charges (7 <sup>th</sup> year)	01	Lumpsum
13	AMC Charges (8 <sup>th</sup> year)	01	Lumpsum
14	AMC Charges (9 <sup>th</sup> year)	01	Lumpsum
15	AMC Charges (10 <sup>th</sup> year)	01	Lumpsum

(\*) The fee payable to CEA & KSEB towards charges for application for scheme approval, energizing approval to CEA, KSEB (if any) will be reimbursed by IREL against production of original receipts. Hence the same will not be form part of it.

## GENERAL CONDITIONS OF THE CONTRACT (GCOC)

This document shall accompany and be a part of the tender. General conditions of procurement shall include the following clauses:

- 1 **Definition of Terms:** In the contract (as hereinafter defined) the following words, definitions and expressions shall have the meanings hereby assigned to them. Except where the context otherwise requires.
  - 1.1 **Company/contractee/IREL (India) Limited**

The 'Purchaser/Company/contractee/IREL (India) Limited' shall mean IREL (India) Limited, Rare Earths Division Unit incorporated under the companies act, 1913 and having its registered office at Plot No. 1207, opposite to Siddhi Vinayak Temple, Veer Savarkarmarg, Prabhadevi, Mumbai-400028.
  - 1.2 **Contractor/Supplier/tenderer/bidder**

The 'Contractor/Supplier/tenderer/bidder' shall mean the person or company whose tender is accepted by the Purchaser and shall be deemed to include the Contractor's successors, legal heirs, executors, administrators, representatives and permitted assignees.
  - 1.3 **Sub-Contractor**

The 'Sub-contractor' shall mean the person or company named in the contract for any part of the work or any person to whom any part of the contract has been sub-let by the Contractor with the consent in writing of the Purchaser and shall include his legal heirs, executors, administrators, representatives and assignees approved by the Purchaser.
  - 1.4 **Contract:** **Contract shall** mean and include the Invitation to Tender, Instructions to Tenderers, General Conditions of Contract, Special Conditions of Contract, drawing specifications, Scope of Work, tender submitted by the Tenderer, including his price offer, Performance Guarantee Bond and other Bonds, Letter of Acceptance, Work/purchase/service/consultancy Order and the Contract and any communication having the effect of amendment of the contract, and the contract agreement.
  - 1.5 **Contract price** means the sum mentioned in the tender that has been accepted, subject to such additions thereto or deductions there from as may be made under the provisions of the contract.
  - 1.6 **Duration of Contract** means the period stipulated in the contract or work order and includes any extended period thereof, if any made by a written communication.
  - 1.7 **Officer-in-Charge (OIC)/Engineer-in-Charge (EIC):** The term "Officer-in-Charge (OIC)/ Engineer-in-Charge (EIC)" as used herein shall mean officer or engineer as designated by IREL.
  - 1.8 **Representative** of Officer-in-Charge (OIC)/ Engineer-in-Charge (EIC) means any assistant of the officer /Engineer appointed from time to time by IREL (India) Limited to perform the duties of OIC/EIC.
  - 1.9 **Terms & Conditions** means the Special Conditions of Contract and General Conditions of Contract herein mentioned and other stipulations incorporated in any part of Tender Document and /or Agreement.
  - 1.10 **Tender Specification**

The term "Tender Specification" shall mean the design data, drawing schedules, broad equipment characteristics and other technical details furnished with the invitation to tender for the purpose of submitting the offer by the tenderer.
  - 1.11 **Contract Specification:** The term "Contract Specification" shall mean the schedules, detailed designs, statements of technical data, performance characteristics and all such particulars mentioned as such in the contract.
  - 1.12 **Letter of Intent (LOI):** The term "Letter of Intent (LOI)" shall mean intimation by a letter to successful tenderer that the tender has been accepted in accordance with the provisions contained in that letter.
  - 1.13 **Site:** The term "Site" shall mean the place or places envisaged by IREL(India) Limited at which the plant and equipment supplied under the contract are to be erected and/or services/works/consultancy are to be performed under the contract.
- 2 **OFFICER-IN-CHARGE (OIC / ENGINEER-IN-CHARGE(EIC)**

The Officer/ Engineer-in-charge shall have authority for

- General supervision, Follow up of supply and direction of the work
- direction to stop the work whenever such stoppage may be necessary to ensure the proper execution of the Contract
- to reject all works and materials which do not conform to the contract

The OIC/EIC shall have neither any authority to relieve the contractor of any of his duties / obligations under the contract nor ordering any work involving delay or any extra payment by IREL (India) Limited or making any variation of or in the work except otherwise expressly provided here-in-under or elsewhere in the contract.

### **3 CONFLICT AND INTERPRETATION OF DOCUMENTS**

- 3.1 Words imparting the singular only also include the plural and vice versa where the context requires; words imparting persons include firms or corporations and vice versa where the context requires.
- 3.2 Word imparting masculine gender includes the feminine gender and vice versa where the context so requires.
- 3.3 The several documents forming the contract are to be taken as mutually explanatory of one another.
- 3.4 In case conflicting statements or directives should occur among the contract documents, it shall be the responsibility of the successful bidder to notify IREL (India) Limited, with a copy sent concurrently to the OIC/EIC, immediately in writing and obtain instructions from IREL (India) Limited to eliminate the conflict.
- 3.5 The successful bidder shall notify IREL, with a copy sent concurrently to the EIC/OIC, promptly of any discrepancies, omissions or doubts it may have, regarding drawings, specifications or other documents. Noted or calculated dimensions shall always be followed
- 3.6 In the event of conflict between various documents forming the contract, the relevant terms and conditions of the work/purchase/service/consultancy order shall prevail over those of all such other documents forming the contract and binding on the contractor and IREL(India) Limited.
- 3.7 In case of conflict between the General Conditions of contract and the Special Conditions of the contract, the Special Conditions of contract shall prevail.

### **4 STANDARDS**

The Machinery, Material, works, Services, etc. supplied under this Contract shall conform to the standards mentioned in the Technical Specifications and, when no applicable standard is mentioned, the latest current edition or revision of the relevant Indian Standards and Codes shall be considered.

### **5 SCOPE OF ORDER AND SPECIFICATIONS**

Contractor shall supply the material or execute the work according to the specifications enclosed and in accordance with all conditions both general and specific enclosed with work / purchase/service/consultancy order, unless any or all of them have been modified or cancelled in writing either as a whole or in part by IREL(India) Limited.

### **6 INSPECTION OF SITE**

The bidders are advised to inspect the site before submitting their offers. Interested bidders can inspect the site on any working days at our specified visiting hours with the permission of Engineer concerned of Maintenance Section. The bidders are also advised to study the labour supply/availability, trade union practices and labour rates prevailing at Udyogamandal.

### **7 ASSIGNMENT AND SUBLETTING**

- 7.1 The contractor shall not assign, sublet or transfer the contract or any part thereof or any benefit or interest therein or there under without the written consent of IREL(India) Limited.
- 7.2 The contractor shall not sublet the whole or any part of the work without the written consent of IREL (India) Limited and such consent, if given, shall not establish any contractual relationship between the sub-contractor(s) and IREL (India) Limited and shall not relieve the contractor of any responsibility, liability, or obligations under the contract and the contractor shall be responsible for the acts, defaults or neglects of any sub-contractor or his agent or workmen.

### **8 PRICES**

Unless otherwise agreed to specifically in order, the price payable by IREL (India) Limited to the contractor under the order shall remain firm throughout the period of contract. The Bidder shall include in his tender all items of equipment/system etc. as stated in the Technical specifications of the tender. The prices shall be itemized in accordance with the Price bid Schedule attached with the tender and the Bidder quoted for all items as per Price bid format will only be considered for opening the price bid. The Contractor is responsible and liable for remitting all statutory dues collected / included in the Price schedule of the contract to the statutory authorities without fail. IREL (India) Limited is not responsible for remittance of such statutory liabilities of the contractor.

9 **TAXES, DUTIES & LEVIES**

Bidders must clearly mention their Tax Registrations, wherever applicable in their offers and invoices. Tax shall be clearly mentioned in the offer indicating the applicable rates, otherwise it shall be considered to be inclusive of tax, as applicable. In order to enable IREL (India) Limited to avail tax benefits, the contractor shall ensure submission of Tax invoice as per the prescribed formats by the statutory authorities. In case the Supplier fails to submit the requisite documents, the amount on account of duties/ taxes, levies as indicated in his quotation/invoice / Work order/Contract shall not be paid.

10 **SECURITY DEPOSIT (SD)**

The successful tenderer is required to furnish Insurance Surety Bond /Bank Guarantee from scheduled or nationalised/NEFT in favour of IREL (India) Limited., RED for an amount equivalent to three (3) per cent of the contract value towards Security Deposit (SD) for the satisfactory performance of the contract, within 15 (fifteen) days of the receipt of order /LOI or before commencement of work at site whichever is earlier. The Security Deposit (SD) shall not bear any interest. The SD shall be refunded after successful completion of the contract including Warranty/Guarantee obligations, if any.

11 **RETENTION MONEY**

Retention Money @7% shall be retained from each progressive / interim bill or on total order value executed. Security Deposit (SD) and Retention Money shall not be more than 10% of the work order value. The retention money shall not bear any interest.

The Retention Money will be refunded only on expiry of work order.

11.1 **The SD& Retention Money** shall stand forfeited in favour of IREL (India) Limited, without any further notice to the contractor in the following circumstances:

- i. In case of any failure whatsoever on the part of the contractor at any time during performance of his part of the contract including the extended periods of contract, where notice is given and time for rectification allowed.
- ii. If the contractor indulges at any time in any subletting/ sub-contracting of any portion of the work without approval of IREL (India) Limited.

12. **LIQUIDATED DAMAGES (LD)**

12.1 Liquidated Damages (LD) shall be levied where reasons are attributable to supplier /contractors for delays in execution of purchase order/ contract. LD shall be levied @0.5% per week or part thereof on the value of unfinished supply/ work order for each week of delay subject to a maximum of 5% of the total value of contract.

12.2 Wherever the supply/work is on turnkey or having a bearing in commissioning and performance of the system in total, LD is to be imposed on total value, in such cases.

12.3 If separate period of completion is specified for certain item of work or group of items of work, at the time of issuing the order, the LD can be levied on the total value of item of work or group of items of work which are completed beyond the agreed contract period.

13 **FORCE MAJEURE**

13.1 Force majeure is an event beyond the control of supplier/contractor and not involving the supplier's/contractor's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to acts of the IREL (India) Limited/contractor either in its sovereign or contractual capacity, wars or revolution, hostility, acts of public enemy, civil commotion, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts and freight embargoes or any other event which IREL (India) Limited may deem fit to consider so. The decision about force majeure shall rest with IREL (India) Limited which shall be final and binding.

13.2 If there is delay in performance or other failures by the supplier/contractor to perform obligations under its contract due to event of a Force Majeure, the supplier/contractor shall not be held responsible for such delays/failures.

13.3 If a Force Majeure situation arises, IREL (India) Limited/contractor shall promptly notify the purchaser in writing of such conditions and the cause thereof within fifteen days of occurrence of such event. Unless otherwise directed by IREL (India) Limited in writing, the supplier shall continue to perform its obligations under the contract as far as reasonable/practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

13.4 If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period of exceeding sixty days, IREL (India) Limited may at its option terminate the contract without any financial repercussion on either side.

14 **PERFORMANCE TEST**

- 14.1 The Contractor shall be responsible for carrying out performance tests on all equipment supplied by him and/or procured by the Purchaser as indicated in the Technical specifications covered in the Tender document, in the presence of the Purchaser's representative. This responsibility shall rest with the Contractor regardless of whether the erection has been carried out by him or any other agency.
- 14.2 On the satisfactory completion of the performance test, the Purchaser will issue an Acceptance certificate on written request from the Supplier.
- 14.3 The date of the acceptance certificate shall be considered to be the date of satisfactory completion of the performance test.

15 **CORRESPONDENCES**

All correspondence shall be in English and addressed to IREL (India) Limited drawn to the attention of the officer issuing the order, unless otherwise specifically authorised.

16 **ACCIDENT OR INJURY TO WORKMEN**

The Contractor shall be solely liable for any accident or injury that may happen to any of his personnel engaged in the Contract. IREL (India) Limited shall not be liable for, or in respect of, any damage or compensation payable at law in respect of, or in consequence of, any accident or injury to any personnel in the employment of the Contractor and the Contractor shall indemnify and keep indemnified IREL (India) Limited against all such claims, damages, compensations and proceedings. The Contractor shall forthwith report to IREL (India) Limited all cases of accidents to any of his personnel and shall make every arrangement to render all possible assistance and aid to the victims of the accident.

17. **COMPLIANCE WITH STATUTORY AND OTHER REGULATIONS**

The Contractor shall, in all matters arising in the performance of the Contract, conform at his own expense to the provisions of all Central or State statutes, ordinances or laws and the rules, regulations, or bye-laws of any local or other duly constituted authority and shall keep the Purchaser indemnified against all penalties and liabilities of every kind for breach of any such statute, ordinance, law, rule regulations or bye-law. The Contractor shall give all notices and pay all fees and taxes required to be given or paid under any Central or State statutes, ordinances or other laws or any regulations or bye-laws of any local or other duly constituted authority in relation to the contract.

18 **SECURITY REGULATIONS**

The Contractor shall abide by all the security regulations at site promulgated by IREL (India) Limited from time to time. The Contractor shall provide identity badges for all his personnel, which must be properly displayed by them at site.

19 **METHOD OF BLACK LISTING VENDORS**

- 19.1 Any failure by the vendor to supply/execute the contract as per order may result in black listing of vendors by the authority competent to conclude the contract. The black listed vendor shall not be considered for a minimum period of one year from the date of black listing.
- 19.2 Further the competent authority may blacklist the bidder, if the bidder changes bid either techno-commercial and / or price or withdraw his bid after receipt of the same and during the validity period of bid.
- 19.3 Further, the vendor shall be banned from doing any business with IREL (India) Limited in case of:
- a. If security considerations including question of loyalty to the state so warrant.
  - b. If the proprietor of the firm, its partner or representative is convicted by a court of law following prosecution for offences relating to business dealings.
  - c. If there is strong justification for believing that the proprietor or employee or representative of the firm has been guilty of malpractice such as bribery, corruption, fraud, substitution of tenders, interpolation, misrepresentation, evasion or habitual default in payment of any tax levied by law, etc.
- 19.4 An order for ban/ suspension passed for a certain specified period shall be deemed to have been automatically revoked on expiry of that specified period and it will not be necessary to issue a specific formal order of revocation, except that an order of suspension/ban passed on account of doubtful loyalty or security consideration shall continue to remain in force until it is specifically revoked.
- 19.5 An order of ban on grounds of conviction by Court of Law may be revoked if, in respect of the same facts, the accused has been wholly acquitted by a court of law.



20 **SECRECY**

The Contractor shall not at any time during the pendency of the contract or there after disclose any information furnished to them by IREL (India) Limited or any drawings, designs, reports and other documents and information prepared by the Contractor for this contract, without the prior written approval of IREL (India) Limited except in so far as such disclosure is necessary for the performance of the Contractor's work and service hereunder.

21 **INDEMNITY**

The contractor shall indemnify IREL (India) Limited and keep IREL (India) Limited indemnified to the extent of the value of free issue materials to be issued till such time the entire contract is executed and proper account for the free issue materials is rendered and the left over/surplus and scrap items are returned to IREL (India) Limited. The contractor shall not utilize IREL (India) Limited's free issue materials for any job other than the one contracted out in this case and also not indulge in any act, commission or negligence which will cause/result in any loss/damage to IREL (India) Limited and in which case, the Contractor shall be liable to IREL (India) Limited to pay compensation to the full extent of damage/loss and undertake to pay the same.

22 **DEATH, BANKRUPTCY, ETC.**

If the Contractor dies or dissolve or go into bankruptcy, or being a corporation cause to be wound up except for reconstruction purposes or carry on its business under a receiver, the executors, successors or other representatives in law of the estate of the Contractor or any such receiver, liquidator, or any person in whom the contract may become vested, shall forthwith give notice thereof in writing to IREL (India) Limited and shall remain liable for the successful performance of the contract, and nothing aforesaid shall be deemed to relieve the Contractor or his successors of his or their obligations under the contract under any circumstances. IREL (India) Limited may terminate the Contract by notice in writing to the Contractor.

23 **ARBITRATION**

All disputes and differences of any kind what so ever arising out of or in connection with the contract or carrying out of the works (whether during the course of works or after their completion and whether before or after determination, abandonment or breach of contract) shall be referred to and settled by the person authorized and notified in writing by IREL (India) Limited who shall state his decision in writing. Such a decision may be in the form of a final certificate or otherwise, within a period of 30 days from the date of receipt of such reference to them. If the Bidder is dissatisfied with the decision of such authorized person, then he may within 30 days of receipt of such decision send a written appeal to IREL, represented by the Chairman and Managing Director at the registered office, Mumbai for Arbitration, in accordance with the provisions of the Arbitration and Conciliation Act and the Rules framed there under from time to time, and for the time being in force. Such written appeals should however specify only those matters in dispute, which have been referred to such authorized person but not satisfied with the decision and the reasons leading to his dissatisfaction.

If the period of 30 days has expired at any stage, stipulated in the preceding paras without any response from the Bidder before such expiry, the Bidder is deemed to have communicated his satisfaction to the decision of IREL (India) Limited at the relevant stage and all his rights of further appeal or as the case may be, adjudication are deemed to have been waived once and for all. The seat of arbitration will be at Mumbai and only the appropriate Court coming under High Court of Mumbai will have jurisdiction to entertain all matters of litigation to the exclusion of all other courts. The Bidder shall not in any way delay or default or cause to delay or default the carrying out of the works by reason of the fact that any matter has been agreed to be referred to and / or referred to Arbitration. For Global tender this clause may be modified by the competent authority on case to case basis.

24 **JURISDICTION**

The courts within the local limits of whose jurisdiction the place from which the order is issued is situated only shall, subject to Arbitration Clause, have jurisdiction to deal with and decide any matter arising out of this contract.

25 **NO CLAIM FOR COMPENSATION FOR SUBMISSION OF TENDER**

The tenderer whose tender is not accepted shall not be entitled to claim any costs, charges, expenses of and incidental to or incurred by him through or in connection with his submission of tender, even though IREL (India) Limited may elect to withdraw the invitation to tender.

26 **RISK PURCHASE CLAUSE**

After award of the contract, if the tenderer fails to execute the work as per tender or at any time repudiates the order, IREL (India) Limited has the right to forfeit and invoke the security deposit and execute the order from other agencies

at the risk and cost of the tenderer. The cost difference between the alternative arrangements and total contract value will be recovered from the tenderer along with other incidental charges. In case of execution of order through alternative sources and if price is lower, no benefit on this account will be passed on to the tenderer.

27 **RELATED PARTY**

Bids submitted by related parties in which there seems to be collusion are liable to be rejected. Parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and /or operating decision.

28 **PATENT INFRINGEMENT AND INDEMNITY**

The Supplier shall protect, indemnify and save harmless to IREL (India) Limited, its successors, assigns, customers and users of its products, against all liability, including costs, expenses, claims, suits or proceedings at law, in equity or otherwise, growing out of, or in connection with, any actual or alleged patent infringement (including process patents, if any), or violation of any licence with respect thereto, by reason of the manufacture and/or sale by, or on behalf of Supplier of the plant or any part thereof, or the purchase thereof by IREL (India) Limited or the use thereof in India for the purchase for which it is furnished, or the sale by IREL (India) Limited, its successors or assigns or products made, manufactured, fabricated, processed or produced with the said plant or any part thereof, and will defend or settle at Supplier's own expense, any such claims suits, or proceedings. IREL (India) Limited will promptly notify the Supplier in writing of any such claim, suit, action or proceeding coming to its attention, giving authority and all available information and assistance for the Suppliers defence of the same. If at any time the installation of the plant or any part thereof, or the use thereof in India for the purpose for which it is furnished or the sale of products produced therewith, is prevented or enjoyed because of patent infringement or claimed infringement, the Supplier shall promptly at his own expense, either procure for IREL (India) Limited the rights to use and continue to use such plant or replace the same at his own expense with equally efficient non-infringing plant satisfactory under all requirements of the contract, so that the operation of IREL (India) Limited's plant will not be unduly delayed or interrupted. If shipment of the plant, or any part thereof is prevented by attachment, injunction or otherwise, or in the course of transit from the Suppliers factory or other point of origin to the site of IREL (India) Limited, as a result of any claim of patent infringement the Supplier shall, at his own cost and expense, promptly furnish and post the necessary bond or take such other steps as may be necessary to enable shipment to be made without delay. IREL (India) Limited will have the right to retain counsel of its own choice to collaborate in the defence of any such claim, suit action or proceeding.

29 **CANCELLATIONS**

IREL (India) Limited reserves the right to cancel the Purchase/work/service/consultancy Order or any part thereof and shall be entitled to rescind the contract wholly or in part in a written notice to successful tenderer if;

- i. Successful tenderer fails to comply with the terms of the work/service order
- ii. Successful tenderer fails to convey written acceptance of the Order within 15 days of receipt at their end.
- iii. Successful tenderer fails to deliver goods on time and / or to replace the rejected goods promptly.
- iv. Successful tenderer becomes bankrupt or goes into liquidation.
- v. Successful tenderer make a general assignment for the benefit or creditors and a receiver is appointed for any of the property owned by successful tenderer fails.

Upon receipt of the said cancellation notice the successful tenderer shall discontinue all work on the work/service order and matters connected with it. IREL (India) Limited in that event will be entitled to procure the requirements in the open market and recover excess payment over Successful tenderer's agreed price, if any, from reserving to itself the right to forfeit the EMD and/or security deposit, if any, submitted by the successful tenderer against the contract.

30 **EVALUATIONS OF BIDS / PLACEMENT OF ORDER**

Contract will be awarded to technically and commercially qualified bidder with the lowest price (L1). The L1 is arrived by combining the cost of all the items as per the Price Schedule and by considering the benefits to IREL (India) Limited.

31 **PRICE PREFERENCE CLAUSES**

Benefits to Micro & Small Enterprises (MSE's) & Startup's:

The MSE's registered with National Small Industries Corporation (NSIC) / startup's as defined by relevant rules are eligible for the following benefits:

- (a) Issue of tender document free of cost
- (b) Exemption from payment of Earnest Money Deposit.

The MSE's / Startups are required to submit valid Registration Certificate issued by NSIC along with tender.

MSE's / Startup claiming the above benefits have to exclusively mention in their offer for consideration by IREL(India) Limited.

### **31.1 CONDITIONS FOR START-UP COMPANIES**

- 31.1.1 Subject to meeting of Quality and Technical specifications, IREL(India)Limited may consider allowing the participation of "Start up" companies with capability to execute the services, as per technical specifications/ perform the job as per scope of work specified in the tender and subject to meeting extant &relevant guidelines of Government of India. This should be confirmed and substantiated in the technical bid.
- 31.1.2 The bidder who intends to participate as "Start up" company should enclose the Certificate of Recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India during submission of Technical bid.
- 31.1.3 Prequalification Criteria with respect to Prior Turnover and Prior Experience may be relaxed for Startups as per the GOI guidelines.
- 31.1.4 However, there may be circumstances like procurement of items/services related to public safety, health, critical security operations and equipment, etc wherein IREL(India) Limited reserves the right to not consider relaxation of Prior Turnover and Prior Experience for Startup Companies as per GOI guidelines.
- 31.1.5 Startup Companies, who are also registered as MSEs and wish to avail the benefits as applicable to MSE, shall submit relevant documents covered under Conditions for Micro and Small Enterprises elsewhere in this tender.

### **31.2 DECLARATION IN CASE OF MSE BIDDERS/ START-UP COMPANIES**

In terms of Tender Conditions applicable for Micro & Small Enterprises (MSEs)/ Startups, we hereby declare as under

- a) We are a Micro / Small Enterprise, as on bid closing date of this tender.
- b) We are a service provider for quoted services and valid documentary evidence for same is submitted.
- c) MSE certificate submitted by us is authentic & valid as on bid closing date of this tender.
- d) We are a 'Start-up' company and we are enclosing copy of certificate of recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India.
- e) We declare the above details are true. In case any of the details are found to be false/untrue, our offer will be liable for rejection /cancellation of order/ subjected to appropriate actions as per tender Terms & Conditions.

Authorized Signatory  
(With Company Seal & Signature)

### **31.3 PUBLIC PROCUREMENT POLICY FOR MICRO AND SMALL ENTERPRISES**

Following provision has been incorporated in tender for MSEs, in line with notification of Government of India, vide Gazette of India No. 503 dated 26.03.2012 proclaiming the Public Procurement Policy on procurement of goods, works and services from Micro and Small Enterprises

- i) Issue of tender document to MSEs free of cost.
- ii) Exemption to MSEs from payment of EMD/Bid Security.
- iii) In Tender participating Micro and Small Enterprises quoting price within the price band of L1 + 15% shall also be allowed to supply/execute a portion of requirement by bringing down their prices to L1 price in a situation where L1 price is from someone other than a micro and small enterprise and such micro and small enterprises shall be allowed to supply up to 25% of the total tendered value.

In case of more than one such Micro and Small Enterprises, the supply/services shall be shared proportionately (to tendered quantity). Further, out of above 25%, 5% (20% of 25%) shall be reserved for MSEs owned by SC/ST entrepreneurs. Further, 3% shall be reserved for MSEs owned by women within above 25% reservation. The respective quota(s) shall be transferred to other MSEs in case of non-availability of MSEs owned by SC/ST entrepreneurs/MSEs owned by women. Further, the definition of MSEs owned by Women shall be as per the definition for MSEs owned by SC/ST entrepreneurs. The quoted prices against various items shall remain valid in case of splitting of quantities of the items above.

The MSEs owned by SC/ST entrepreneurs shall mean:-

- a) In case of proprietary MSE, Proprietor(s) shall be SC/ST.

b) In case of partnership MSE, the SC/ST partners shall be holding at least 51% share in the unit c) In case of private Limited Companies, at least 51% share is held by SC/ST. If the MSE is owned by SC/ST entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard.

In case bidder is a Micro or Small Enterprise under the Micro, Small and Medium Enterprises Development Act, 2006, the bidder shall submit the following:

a) Documentary evidence that the bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises or Udyog Aadhaar Memorandum.

b) If the MSE is owned by SC/ST Entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard. The above documents submitted by the bidder shall be duly certified by the Chartered Accountant (not being an employee or a Director or not having any interest in the bidder's company/firm) and notary public with legible stamp. If the bidder does not provide the above confirmation or appropriate document or any evidence, then it will be presumed that they do not qualify for any preference admissible in the Public Procurement Policy (PPP) 2012.

Further, MSEs who are availing the benefits of the Public Procurement Policy (PPP) 2012 get themselves registered with MSME Data Bank being operated by NSIC, under SME Division, M/o MSME, in order to create proper data base of MSEs which are making supplies to CPSUs. It may be noted that Government of India has implemented Trade Receivable Discounting System (TReDS) to address challenges faced by MSMEs in delayed payments (after receipt/acceptance of Material/Services) from Government buyers leading to shortfall of Working Capital. TReDS is an online electronic institutional mechanism for facilitating the financing of trade receivables of MSMEs through multiple financiers. IREL(India)Limited is already registered on the TReDS platform. You are requested to kindly register on the TReDS platform. The MSME vendors can avail the TReDS facility if they want to.

If against an order placed by IREL(India)Limited, successful bidder(s) (other than Micro/Small Enterprise) is procuring material/services from their sub-vendor who is a Micro or Small Enterprise registered with District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises with prior consent in writing of the purchasing authority/Engineer-in-charge, the details.

like Name, Registration No., Address, Contact No. details of material & value of procurement made, etc. of such Enterprises shall be furnished by the successful bidder at the time of submission of invoice/Bill. The benefit of policy are not extended to the traders/dealers/ Distributors /Stockiest/Wholesalers.

## **32 RXIL (TReDS) PLATFORM:**

IREL is registered with RXIL (TReDS) platform. MSE bidders are requested to get registered with RXIL (TReDS) platform to avail the facility as per the GOI guidelines.

- 1. IREL (India) Limited is onboard with TReDS platform of M/s RXIL for facilitating Bill Discounting for MSME's.***

*As per DPE/7(4)/2007-Fin dt 21/08/2020, it is mandatory to get all the MSME vendors registered on the platform.*

*Vendors can get themselves registered at: <https://onboarding.rxil.in/customerapp/home>.*

*The registration fees of MSMEs on TReDS Platform is Free of Cost as per the new guidelines provided by SIDBI.*

*For any registration queries, vendors may please contact,*

*RXIL Relationship manager Mr. Satyajeet Jathar: +91 99201 00784 / +91 9004100784 email: [satyajeet.jathar@rxil.in](mailto:satyajeet.jathar@rxil.in)*

*RXIL Relationship manager Mr Kirti musale : +91 90048 17501 email: [kirti.musale@rxil.in](mailto:kirti.musale@rxil.in)*

*IREL (India) Limited Unit Administrator: Mr. R. Abel Devadhason : +91 9443607155*

*email : purchase-red@irel.co.in*

**IREL (India) Limited Nodal Officer**

**Mr. K.V.Ramakrishna: +918104997177 email: kramakrishna@irel.co.in**

33 **OTHER TERMS & CONDITIONS**

33.1 **Reporting Accidents to Labour**

You shall be responsible at your expense for the safety of all employees and / or workmen employed or engaged by you on and in connection with the work in accordance with the laws framed from time to time and shall report to you all cases of serious accidents howsoever caused and wherever occurring on the works and shall make adequate arrangements for rendering all possible aid to the victims of the accidents.

33.2 **Workmen's Compensation**

You shall at all times indemnify IREL against all claims against Workmen's Compensation Act, 1923 or any other law for the time being in force in respect of any workmen employed by you in carrying out the contract and against all costs and expenses or penalties incurred by IREL in connection therewith and (without prejudice to any other means of recovery) IREL shall be entitled to deduct from any money due or to become due to you all moneys paid or payable by IREL by way of compensation aforesaid or for costs or expenses in connection with any claim thereto and you shall abide by the decision of IREL as to the sum payable by you under the provision of this clause.

33.3 IREL shall not be responsible for any expenses towards compensation for workmen on any account. You shall before commencing the work to cover liability for the workmen employed by him as per the Workmen's Compensation Act, 1923 and shall produce the same to IREL.

33.4 Contractor shall submit a copy of latest PF& ESI returns and inspection reports from statutory authorities along with a copy of challans for having deposited PF & ESI contributions every month.

33.5 **Medical care in case of accident**

It is the responsibility of contractor to undertake necessary care and make arrangement for transportation and treatment of his employee at ESI Hospital or any tie up hospitals of ESIC. Contractor should assist and guide his employees for claiming lawful benefits from ESI.

33.6 **Records & information to be furnished by contractor**

33.6.1 Contractor shall maintain neatly, completely and legibly registers, records, reports and returns for workers employed etc. inspection by various authorities at short notice.

33.6.2 Contractor shall provide information as required in respect of all of his employees employed by him to enable the Contract operating division to monitor compliance of P.F/ESI and also to enable him to furnish information to Ministry and Labour department as may be required.

33.6.3 Contractor shall provide full particulars of each employee employed by him before start of the work and from time to time. He will also endorse a copy of returns furnished by him to the Labour Department under the Contract Labour (Regulation and Abolition) Act 1970.

33.6.4 Contractor shall arrange police verification report for the employed workmen for the work and submit the copy to IREL Security I/C.

33.6.5 Contractor shall submit medical certificate obtain from any Govt. medicals for the workman employed for the work.

33.6.6 **EMPLOYMENT LIABILITY**

You are solely and exclusively being responsible for engaging or employing persons for the execution of this work. All employees engaged by you shall be in its pay roll and be paid by you. IREL (India) Limited will have no liability whatsoever concerning the workmen engaged for this service by you. You shall indemnify IREL (India) Limited against any loss/ damage/liability arising out of in the course of its employing persons or out of relations with its employees. You shall make regular and full payment of wages along with statutory dues to the workmen within 5th of the following month irrespective of whether you are raised the bill or not and furnish necessary documents whenever required by the competent authority. You shall comply with all Acts, Laws and Regulations applicable to the area with regard to performance of the work and including, Minimum Wages Act, 1948, Contract Labour (R&A) Act, 1970, Workmen's Compensation Act, 1923 Industrial Dispute Act, 1947 and take such steps as may be deemed necessary in this regard. It shall be directly responsible for any dispute arising between them and their personnel and keep IREL (India) Limited, RED indemnified against losses, damages or claims arising thereof. ii. In case of complaint of non-fulfilment of any obligation under the contract, IREL (India) Limited reserves the right to withhold the payments due

to them and out of such amount or amount of security held, if any or amounts likely to fall due to them (but without obligation to do so) to make such payment as it may consider necessary for smooth and unhindered working. There will be no relations of employer and employee between our IREL (India) Limited and the personnel so engaged by you under the contract and no claims for any employment in IREL (India) Limited will be entertained or tenable. It shall be the sole responsibility of yours to regulate and effect any terms of employment with the engaged persons without any liability whatsoever to the IREL (India) Limited.

34. **VARIATION IN QUANTITIES**

34.1 Quantities stated under each item in the Specification or Price Schedule is approximate only. The contractor must be willing to accept any variation in quantities and the unit rate quoted shall remain unchanged.

34.2 The company reserves the right to cancel any part of the work if the same is not required to fulfill the objectives of the specific work contract.

35.0 **PLANNING AND DESIGNING IN PURVIEW OF VULNERABILITY ATLAS OF INDIA**

Vulnerability Atlas of India (VAI) is a comprehensive document which provides existing hazard scenario for the entire country and presents the digitized State/UT-wise hazard, maps with respect to earthquakes, winds and floods for district -wise identification of vulnerable areas. It also includes additional digitized maps for thunderstorms, cyclones and landslides. The main purpose of this Atlas is its use for disaster preparedness and mitigation at policy planning and project formulation stage.

This Atlas is one of its kind single point source for the various stakeholders including policy makers, administrators, municipal commissioners, urban managers, engineers, architects, Planners, public etc. to ascertain proneness of any city/location/site to multi-hazard which includes earthquakes, winds, floods thunderstorms, cyclones and landslides. While project formulation, approvals and implementation of various urban housing, buildings and infrastructures schemes, this Atlas proves necessary information for risk analysis and hazard assessment.

The Vulnerability Atlas of India has been prepared by Building Materials and Technology Promotion Council under Ministry of Housing and Urban Affairs, Government of India and available at their website [www.bmtpc.org](http://www.bmtpc.org)

It is mandatory for the bidders to refer Vulnerability Atlas of India for multi-hazard risk assessment and include the relevant hazard proneness specific to project location while planning and designing the project in terms of:

- i) Seismic Zone (II TO V) for earthquakes
- ii) Wind velocity (Basic Wind Velocity:55,50, 47, 44, 39 &33 m/s)
- iii) Area liable to floods and Probable max. surge height
- iv) Thunderstorms history
- v) Number of cyclonic storms/severe cyclonic storms and max sustained wind specific to coastal region
- vi) Landslides incidences with Annual rainfall normal
- vii) District wise Probable Max. Precipitation.

The Officer/ Engineer-in-charge shall have authority for

- General supervision, Follow up of supply and direction of the work
  - direction to stop the work whenever such stoppage may be necessary to ensure the proper execution of the Contract
- to reject all works and materials which do not conform to the contract

The OIC/EIC shall have neither any authority to relieve the contractor of any of his duties / obligations under the contract nor ordering any work involving delay or any extra payment by IREL (India) Limited or making any variation of or in the work except otherwise expressly provided here-in-under or elsewhere in the contract.

प्रिय महोदय Dear Sir,

आईआरईएल (इंडिया लिमिटेड, परमाणु ऊर्जा विभाग के प्रशासनिक नियंत्रण के अधीन एक भारत सरकार उपक्रम, सरकारी नियमों और सार्वजनिक क्षेत्र के उपक्रम के नियम और अन्य वैधानिक एजेंसियों के विनियम के अनुसार अपना कारोबार कर रही है। व्यापार अच्छा कॉर्पोरेट प्रशासन के साथ एक नैतिक, तर्कसंगत और निष्पक्ष तरीके से किया जाता है।

IREL (India) Limited, a Government of India undertaking under the administrative control of Department of Atomic Energy is doing its business as per the rules and regulation of the Public Sector Undertaking and other statutory agencies. The business is done in an ethical, rational & impartial manner with good corporate governance.

हमारे व्यवहार में अधिक पारदर्शी होने और हमारी विचारधारा का समर्थन करने के हमारे प्रयास में, सभी विक्रेताओं, ग्राहकों और व्यावसायिक भागीदारों से अनुरोध है कि वे हमारी कंपनी के साथ व्यवहार करने के पक्ष में किसी भी कर्मचारी को कोई उपहार और / या प्रलोभन न दें। उपर्युक्त के प्रति आपकी प्रतिबद्धता के आश्वासन में, यदि आप संलग्न वचन-पत्रको भरें, हस्ताक्षर करें और उनका पालन करें, तो इसकी बहुत सराहना की जाएगी।

In our endeavor to be more transparent in our dealings and to support our ideology, all Vendors, Customers and Business Partners are requested not to provide any gift and / or inducement to any of our employees for securing / being granted favor in dealings with our Company. In assurance of your commitment to the aforesaid, it will be highly appreciated if you fill up, sign and abide by the attached undertakings.

कंपनी के किसी भी कर्मचारी द्वारा मांगे गए किसी भी उपहार और / या प्रलोभन की रिपोर्ट तुरंत निम्नलिखित में से किसी एक को दी जानी चाहिए:

Report of any gifts and / or inducements sought by any employee of the company should be immediately reported to any one of the following:

अध्यक्ष एवं प्रबंध निदेशक आईआरईएल (इंडिया लिमिटेड) 1207, वी.सा.मार्ग, प्रभादेवी मुंबई 400028 दू.भा 24225778-022 . ई मेल : cmd@irel.co.in Chairman & Managing Director IREL (India) Limited., 1207, V.S. Marg, Prabhadevi Mumbai 400 028. Ph: 022-24225778, Email:cmd@irel.co.in	मुख्यसतर्कता अधिकारी आईआरईएल (इंडिया लिमिटेड) 1207, वी.सा.मार्ग, प्रभादेवी मुंबई 400028 दू.भा 24225778-022 . ई मेल : cvo@irel.co.in Chief Vigilance Officer, IREL (India) Limited., 1207, V.S. Marg, Prabhadevi, Mumbai 400 028 Ph:022-24221068, Email:cvo@irel.co.in
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हम आपको विश्वास दिलाते हैं कि आपके द्वारा इस विषय पर की गई शिकायतों को, यदि है तो, गोपनीय रखा जाएगा और निष्पक्ष जांच की जाएगी और उचित कार्रवाई की जाएगी। इसी तरह, वचनबद्धता के प्रति आपकी प्रतिबद्धता को छोड़कर, इसके उल्लंघन होने पर हम कंपनी के प्रचलित नियम के अनुसार परिणाम देंगे।

We assure you that complaints if any made by you on the subject will be kept confidential and fair investigation will be conducted and appropriate action will be taken. Similarly, we expect your commitment to the undertaking and its violation will have consequences as per prevailing rule of the Company.

धन्यवाद Thanking you,

कृते आईआरईएल (इंडिया लिमिटेड) For IREL (India) Limited

H0Sd/-

श्री आर एबेल देवदासन Shri. R. Abel Devadhasan

मुख्य प्रबंधक (तकनीकी), क्रय Chief Manager (Technical), Purchase

वचन पत्रUNDERTAKING

तारीखDate:

सेवा मेंTo,

आईआरईएल (इंडिया लिमिटेड) IREL (India) Limited.,  
1207, वी.एस. मार्ग V.S. Marg,  
प्रभादेवी Prabhadevi  
मुंबई Mumbai 400 028.

मैं / हम ..... आईआरईएल (इंडिया लिमिटेड) अब कंपनी के रूप में  
संदर्भित किया जाएगा (का एक विक्रेता / ग्राहक हूँ ।  
I / We ..... am / are a Vendor / Customer of IREL (India)  
Limited(now onwards to be referred as Company).

मैं / हम सहमत हूँ और वचन देते हूँ / We agree and undertake:

कंपनी के कॉर्पोरेट कार्यालय और /या इसके किसी भी क्षेत्र इकाइयों यानी एमके, चवरा, ऑस्कॉम, आरईडी एवं आईआरईआरसी  
के साथ मेरे /हमारे व्यवहार पाने / हासिल करने के संबंध में कंपनी के किसी भी कर्मचारी को कोई उपहार और / या प्रलोभन प्रदान  
नहीं किया जाएगा

Not to provide any gift and / or inducement to any employee of the Company in connection with securing / being  
granted favour (s) in my / our dealings with the Corporate office of the company and / or its any field units namely  
MK, Chavara, OSCOM, RED & IRERC.

कंपनी के किसी भी कर्मचारी द्वारा कंपनी और /या उसके क्षेत्र इकाइयों के साथ मेरे / हमारे व्यवहार में मेरे /हमारे पक्ष में देने के  
लिए किसी भी उपहार और / या प्रलोभन की तत्काल रिपोर्ट किया जाएगा

To immediately report any gift and / or inducement sought by any employee of the Company granting favor(s) to me  
/ us in my / our dealings with the Company and / or its field units.

हस्ताक्षरSignature.....

नामName.....

विषयTitle.....

कंपनी का नाम एवं पता )मुहर सहित (

Name of the Company and Address (with Seal).....



**BANK DETAILS**

**IREL(India) Limited Bank Details.**

- 1. Name of the Bank : State Bank of India  
Udyogamandal Branch,  
Udyogamandal  
Kochi- 683 501
  
- 2. Account Type : Current Account
  
- 3. Account Number : 57017844321
  
- 4. IFSC Code : SBIN0070158

**IREL (India) Limited, RED, GST IN: ID No. 32AAACI2799F2ZM**

**Bidders (Pl. Provide the details):**

- 1. Name of the Bank : .....
  
- .....
  
- 2. Account Type : .....
  
- 3. Account Number : .....
  
- 4. IFSC Code : .....

VENDOR UP-DATION DETAILS (MANDATORY)			
SI No	Organisation Details		
1	Name	-	
2	Address Type (sales office address/office address/Warehouse address/factory address)		
3	Building/House Number		
4	Area/Street Name		
5	City		
6	Pin Code		
7	State		
8	Contact Details	Ph No:	Email:
		Mobile No.	
9	Ownership Information (Private Limited Company/ One Person Company/ Limited Liability Partnership/ Partnership Firm / Proprietorship/ Co-Operative Society/ Trust/ Others)		
10	Nature Of Business ( Manufacturer/ Dealer/ Trader/ Distributor/ Stockiest/ Channel Partner/ Indian Sales Office/ Subsidiary of Registered foreign supplier/ Indian Agents/ Service Provider)		
11	Copy of PAN card	Attached	Yes
			No
12	GSTIN	Attached	Yes
			No
13	Audited copies of P&L for the last three years	Attached	Yes
			No
14	Valid MSE Udyam registration certificate, if any.	Attached	Yes
			No
15	ISO Certification if any		
16	Registered in GEM Portal	Yes	No
17	Whether Supplier/Service Provider is a Start-Up Enterprise		
	<b>Bank Details</b>		

18	Name of bank:	
19	Name of Bank Branch:	
20	City/Place:	
21	Account Number:	
22	Account Type:	
23	IFSC Code:	
24	MICR Code:	

**Bidders are requested to fill and submit the relevant documents as above for completion of vendor updation format.**

**PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT (EMD)**

(To be issued by approved Scheduled Banks)

In accordance with Notice Inviting Tender (NIT) No. \_\_\_\_\_ Dated \_\_\_\_\_ for the work of \_\_\_\_\_ (herein after referred to as "the said Works") for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only), under \_\_\_\_\_ RED unit of M/s IREL(India) Limited, a company incorporated under Indian Companies Act, having its registered office at Plot No.1207, ECIL building, Opp. to Siddhivinayak Temple, Veer Savarkar Marg, Prabhadevi, Mumbai-400028, India (herein after referred to as IREL (India) Limited, M/s \_\_\_\_\_ Address \_\_\_\_\_ [Herein after referred to as Contractor (s)] wish /wishes to participate in the said tender and a Bank Guarantee for the sum of Rs. \_\_\_\_\_ (in words) valid for a period of \_\_\_\_\_ days (in words) is required to be submitted by the Bidder towards the Bid Security.

We the \_\_\_\_\_ Bank (hereinafter called the said Bank) do hereby undertake to pay to IREL (India) Limited, the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) by reason of the said tenderer's failure to enter into an agreement of contract on intimation of acceptance of his tender and/or to commence the contract works and/or failure to deposit the security deposit within the stipulated period as per the terms and conditions relating to and/or governing the contract and/or specified in the Notice Inviting Tender (NIT). We also agree that any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. We also agree that notwithstanding any dispute or difference or any litigation in respect of or arising from the said contract and/or the acceptance of the tender of the tenderer afore stated by IREL(India) Limited including the question as to the tenability of the claim of the IREL(India) Ltd for forfeiting the Earnest Money being the Bank Guarantee herein, we shall forthwith pay the said amount to IREL(India) Ltd on demand being made as aforesaid.

We \_\_\_\_\_ Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for entering into an Agreement of contract and that it shall continue to be enforceable till all the dues of the IREL(India) Limited under the terms and conditions of the NIT for the work have been fully paid and its claims satisfied or discharged or till IREL(India) Limited certifies, that the terms and conditions of the NIT have been fully and properly carried out by the said tenderer and accordingly discharges the guarantee.

We \_\_\_\_\_ Bank further agree with the IREL(India) Limited that the IREL(India) Limited shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the NIT and/or terms and conditions governing the contract or to extend the time of validity of the offer from the said tenderer from time to time or to postpone for any time or from time to time any of the powers exercisable by the IREL against the said tenderer and to forbear or enforce any of the terms and conditions of the NIT and we shall not be relieved from our liability hereunder by reason of any such variation, or extension being granted to the said tenderer or for any forbearance, act or omission on the part of the IREL(India) Limited or any indulgence by the IREL(India)

Limited to the said tenderer or by any such matter or thing whatsoever which under the law relating to surety/guarantee would but for this provision have effect of so relieving us.

We \_\_\_\_\_ Bank do hereby further agree that any change in the Constitution of the said tenderer or the Bank will not affect the validity of this guarantee.

We \_\_\_\_\_ Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the IREL (India) Limited in writing.

Dated the \_\_\_\_\_ day of \_\_\_\_\_ 20--

\_\_\_\_\_ Bank

(Signature with name in Block letters with designation, Attorney as per power of Attorney

No. \_\_\_\_\_ dt. \_\_\_\_\_)

Bank's Common seal

## Bid Document

<b>Bid Details</b>	
<b>Bid End Date/Time</b>	14-12-2022 12:00:00
<b>Bid Opening Date/Time</b>	14-12-2022 12:30:00
<b>Bid Offer Validity (From End Date)</b>	90 (Days)
<b>Ministry/State Name</b>	Pmo
<b>Department Name</b>	Department Of Atomic Energy
<b>Organisation Name</b>	Irel India Limited
<b>Office Name</b>	Ho
<b>Total Quantity</b>	15
<b>Item Category</b>	Title1 , Title2 , Title3 , Title4 , Title5 , Title6 , Title7 , Title8 , Title9 , Title10 , Title11 , Title12 , Title13 , Title14 , Title15
<b>BOQ Title</b>	Supply Installation and commissioning of 60KWp on grid Solar Power Plant
<b>Minimum Average Annual Turnover of the bidder (For 3 Years)</b>	11 Lakh (s)
<b>Years of Past Experience Required for same/similar service</b>	3 Year (s)
<b>MSE Exemption for Years of Experience and Turnover</b>	No
<b>Startup Exemption for Years of Experience and Turnover</b>	No
<b>Document required from seller</b>	Experience Criteria,Bidder Turnover,Certificate (Requested in ATC),Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
<b>Bid to RA enabled</b>	No
<b>Primary product category</b>	Title1
<b>Time allowed for Technical Clarifications during technical evaluation</b>	2 Days
<b>Estimated Bid Value</b>	3500000
<b>Payment Timelines</b>	Payments shall be made to the Seller within <b>30</b> days of issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills (This is in supersession of 10 days time as provided in clause 12 of GeM GTC)
<b>Evaluation Method</b>	Total value wise evaluation

**EMD Detail**

Advisory Bank	State Bank of India
EMD Amount	35000

**ePBG Detail**

Advisory Bank	State Bank of India
ePBG Percentage(%)	3.00
Duration of ePBG required (Months).	62

(a). EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.

(b). EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.

**Beneficiary:**

DGM (A&C)  
IREL India Limited, RED, Udyogamandal  
(Sankarshan Patel)

**Splitting**

Bid splitting not applied.

**MII Purchase Preference**

MII Purchase Preference	Yes
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**MSE Purchase Preference**

MSE Purchase Preference	Yes
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1. The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year, should be as indicated above in the bid document. Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.

2. Experience Criteria: In respect of the filter applied for experience criteria, the Bidder or its OEM {themselves or through reseller(s)} should have regularly, manufactured and supplied same or similar Category Products to any Central / State Govt Organization / PSU / Public Listed Company for number of Financial years as indicated above in the bid document before the bid opening date. Copies of relevant contracts to be submitted along with bid in support of having supplied some quantity during each of the Financial year. In case of bunch bids, the category of primary product having highest value should meet this criterion.

3. Preference to Make In India products (For bids < 200 Crore):Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the

Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.

4. Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% (Selected by Buyer)of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 25%(selected by Buyer) percentage of total QUANTITY.

5. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.

## Title1

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
------------	-----------

## Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

## Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180



## Title2

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

## Title3

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title4

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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#### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

#### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title5

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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#### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

**Consignees/Reporting Officer and Quantity**

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

**Title6**

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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**Technical Specifications**

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

**Consignees/Reporting Officer and Quantity**

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

**Title7**

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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**Technical Specifications**

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

#### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title8

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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#### Technical Specifications

Specification Document	<a href="#">View File</a>
BOQ Detail Document	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

#### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title9

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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#### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

#### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title10

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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#### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

#### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	180

#### Title11

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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**Technical Specifications**

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

**Consignees/Reporting Officer and Quantity**

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	365

**Title12**

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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**Technical Specifications**

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

**Consignees/Reporting Officer and Quantity**

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	365

### Title13

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhasan	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	365

### Title14

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	365

### Title15

**(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)**

Brand Type	Unbranded
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### Technical Specifications

<b>Specification Document</b>	<a href="#">View File</a>
<b>BOQ Detail Document</b>	<a href="#">View File</a>

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

### Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	R Abel Devadhason	683501,IREL (India) Limited; UDYOGMANDAL,Ernakulam.	1	365

## Buyer Added Bid Specific Terms and Conditions

#### 1. Generic

OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

#### 2. Buyer Added Bid Specific ATC

Buyer uploaded ATC document [Click here to view the file.](#)



### 3. Generic

Bidder shall submit the following documents along with their bid for Vendor Code Creation:

- a. Copy of PAN Card.
- b. Copy of GSTIN.
- c. Copy of Cancelled Cheque.
- d. Copy of EFT Mandate duly certified by Bank.

## Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization. Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity/restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and/or terms and conditions governing the bid. Any clause incorporated by the Buyer such as demanding Tender Sample, incorporating any clause against the MSME policy and Preference to make in India Policy, mandating any Brand names or Foreign Certification, changing the default time period for Acceptance of material or payment timeline governed by OM of Department of Expenditure shall be null and void and would not be considered part of bid. Further any reference of conditions published on any external site or reference to external documents/clauses shall also be null and void. If any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations. Also, GeM does not permit collection of Tender fee / Auction fee in case of Bids / Forward Auction as the case may be. Any stipulation by the Buyer seeking payment of Tender Fee / Auction fee through ATC clauses would be treated as null and void.

[This Bid is also governed by the General Terms and Conditions](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

**---Thank You---**