HLL LIFECARE LIMITED

(Formerly Hindustan Latex Limited)

(A Government of India Enterprise)

KANAGALA

BELGAUM DIST. PIN – 591 225

KARNATAKA STATE

PH.NO: 08333-279240, 279244. FAX: 08333-279245.

Website: www.lifecarehll.com

E-mail: purchasekfb@lifecarehll.com
purchasenfk@gmail.com

TENDER NO. HL:BG:PS:25KW SOLAR PLANT:2015-16

TENDER DOCUMENT

FOR

25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT

Last Date and Time for Receipt of Technical & Price Bid : 04-JUN-2015 up to 17:00 Hrs.

Date and Time of Opening of Technical Bid : 05-JUN-2015, 10:30 Hrs.

Date and Time of Opening of Price Bid : Will be intimated later.

NOTICE INVITING TENDER (NIT)

HLL Lifecare Limited (Formerly Hindustan Latex Ltd), India's leading Manufacturers and Marketers of Contraceptive, Health Care and Pharma Products is a Mini Ratna Company.

HLL Lifecare Limited (Formerly Hindustan Latex Ltd), a PSU under the Ministry of Health & Family Welfare, Govt. of India invites Sealed & Superscribed Tenders under **Two Bid System (Technical & Price)** in the prescribed forms enclosed from Manufacturers / Authorized Dealers for the supply, erecting and commissioning of **25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT** at our Factory site at Kanagala, Belgaum Dist (Karnataka).

Specifications and Terms & Conditions etc. are detailed in Tender Documents. NIT / Tender Documents / NIT can be had from our Office on any working day between 11:00 AM to 3:30 PM by paying **₹ 500/- by Cash / DD (inclusive of ST)** drawn in favor of HLL LIFECARE LTD, payable at State Bank of India, NIPANI – 591 237. Further, **Tender Documents can also be downloaded from our website: www.lifecarehll.com. However cost of Tender Documents i.e. ₹ 500/- in the form of DD should be enclosed along with Technical Bid.**

NAME OF THE ITEM	QTY. REQUIRED (SET)
25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT **Specifications as detailed in ANNEXURE AN2.**	**01**

1. **Last date for Receipt of Technical & Price Bid : 04.06.2015 (17:00 Hrs.)**

2. **Opening of Technical Bid : 05.06.2015 (10:30 Hrs.)**

3. In the event of the date/s mentioned above being declared subsequently as holiday/s for the Purchaser's Office, the due date for meeting, submission and opening of bids will be the next working day at the same venue and time.

4. Addendums / Amendments issued if any to this NIT / Tender Documents shall be part of this NIT / Tender Documents and shall be published in our website specified above. It is Bidders responsibility to keep themselves updated on any such Addendums / Amendments issued, if any.

5. In order to provide reasonable time to the Prospective Bidders to take necessary action in preparing their Tenders / Bids as per the Addendums / Amendments, HLL may, at its discretion extend the deadline for the submission of Tenders / Bids and other allied time frames, which are linked with that deadline.

6. **Earnest Money Deposit (Refundable):** An amount of **₹ 50,000/-** by DD drawn in favor of **"HLL LIFECARE LTD"** payable at State Bank of India, NIPANI – 591 237 towards EMD should be enclosed along with the Technical Bid only. The EMD will be refunded to the Bidder if his Tender is not accepted but without any interest.

7. **Tender Cost (Nonrefundable):** An amount of **₹ 500/- (inclusive of S.T.)** by DD drawn in favor of **"HLL LIFECARE LTD"** payable at State Bank of India, NIPANI – 591 237 towards cost of Tender Form should be enclosed along with the Technical Bid only.

8. **Exemption: SSI Units / Bidders** who are currently registered and also will continue to remain registered during the Tender Validity Period with **DIC or NSIC** for the specific goods as per the NIT Specification shall be eligible for exemption from payment of Tender Cost and EMD ***on submission of Valid Copy of their Registration Certificate duly renewed along with the Technical Bid.***

9. **Technical Bids received without enclosures of EMD & Tender Cost OR Valid Copy of Registration Certificate duly renewed from concerned DIC / NSIC will be summarily rejected.** Please note that HLL Lifecare Ltd. will not be responsible for any delay in submission of Tender.

10. Acceptance / Rejection of the Tender is entirely at the discretion of HLL.

DEPUTY GENERAL MANAGER (PURCHASE)

1) FORMATS FOR TECHNICAL BID

a) INSTRUCTIONS TO THE BIDDERS (ANNEXURE AN1)
b) USER REQUIREMENT SPECIFICATION FOR 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT (ANNEXURE AN2)
c) QUALIFICATION CRITERIA (ANNEXURE AN3)
d) DECLARATION ACCEPTING TERMS AND CONDITIONS OF THE TENDER (ANNEXURE AN4)
e) FORMAT FOR MANUFACTURERS AUTHORIZATION FORM (ANNEXURE AN5)
f) GENERAL CONDITIONS FORMING PART OF THE BID

2) FORMS FOR PRICE BID

a) SCHEDULE - A: PRICE BID / RATE SCHEDULE
(WITH TERMS & CONDITIONS)

NOTE: Technical Bid & Price Bid forms shall be submitted in Separate Covers.

How to send the Bid:

Both the Bids i.e. Technical Bid & Price Bid shall be submitted in sealed covers separately. Technical Bid & Price Bid shall be superscribed on the respective covers in order to clearly identify between the 2 Bids. The two separately marked Bids enclosed in single sealed cover with Tender NO. Complete in all respect addressed to The Deputy General Manager (Purchase), HLL Lifecare Ltd., Kanagala - 591 225 Dist. Belgaum, Karnataka State should reach us on or before the due date and time mentioned in the NIT.

CONTENTS OF THE BIDDING DOCUMENTS:

1. Technical Bid:

a) DD for ₹ 50,000/- towards EMD **/** Valid Copy of Registration Certificate duly renewed from concerned DIC / NSIC.
b) DD for ₹ 500/- towards Tender Cost **/** Valid Copy of Registration Certificate duly renewed from concerned DIC / NSIC.
c) USER REQUIREMENT SPECIFICATION FOR 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT (ANNEXURE AN2) ***duly signed and sealed***.
d) QUALIFICATION CRITERIA (ANNEXURE AN3) ***duly filled, signed and sealed***. Details shall be enclosed as required by us.
e) DECLARATION ACCEPTING TERMS AND CONDITIONS OF THE TENDER (ANNEXURE AN4) *(on the letterhead of the Bidder firm).*
f) FORMAT FOR MANUFACTURERS AUTHORIZATION FORM (ANNEXURE AN5) *(on the letterhead of the Manufacturing firm).*
g) GENERAL CONDITIONS FORMING PART OF THE BID ***duly signed and sealed***.

2. Price Bid:

a) SCHEDULE – A: Price Bid ***duly filled, signed and sealed.***
b) Terms & Conditions of Price Bid ***duly signed and sealed.***

INSTRUCTIONS TO THE BIDDERS

ANNEXURE AN1

1. The Quotation must to be in Two Parts i.e., **A.** Technical Bid and **B.** Price Bid.

2. The Bidder is expected to examine all Specifications, Instructions, Forms, and Terms & Conditions given in the Bidding Documents. Failure to furnish all information required in the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will be at the Bidders risk and may result in rejection of the Bid.

3. Any clarification required will have to be obtained one week prior to the Date of opening of the Technical Bid. ***For any technical clarifications please feel free to contact our Mr. B.I. Mavinkatti / Mr. M.Y. Satare at mail id: bimhll@lifecarehll.com / sataremy@lifecarehll.com OR Cell NOS.09483041879 / 09880614428 respectively.***

4. Addendums / Amendments issued if any to this NIT / Tender Documents shall be part of this NIT / Tender Documents and shall be published in our website specified above. It is Bidders responsibility to keep themselves updated on any such Addendums / Amendments issued, if any.

5. In order to provide reasonable time to the Prospective Bidders to take necessary action in preparing their Tenders / Bids as per the Addendums / Amendments, HLL may, at its discretion extend the deadline for the submission of Tenders / Bids and other allied time frames, which are linked with that deadline.

6. Both, Technical Bid and Price Bid must be furnished in two separate sealed & super scribed covers.

7. Bids received after the deadline for submission shall not be considered.

8. **Technical Bid** must be furnished as shown in the **Contents of Bidding Documents @ Sl. NO.1** mentioned above and must be super scribed as **"Technical Bid – 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT Ref: Tender NO.HL:BG:PS:25KW SOLAR PLANT:2015-16 / 11.05.2015"**.

9. **Price Bid** must be furnished as shown in the **Contents of Bidding Documents @ Sl NO.2** mentioned above i.e., in **SCHEDULE - A: PRICE BID** and must be super scribed as **"Price Bid - 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT Ref: Tender NO.HL:BG:PS:25KW SOLAR PLANT:2015-16 / 11.05.2015".**

10. Technical Bids and Price Bids those are not submitted in two separate sealed & super scribed covers are liable for rejection.

11. **Enclose additional sheets, if necessary, to highlight the deviations from the Technical Bid and Price Bid. Provide proper reference to these additional sheets in the Technical Bid and Price Bid.**

12. The Evaluation of the Technical Bid is carried on the Responses given in the Technical Bid.

13. Price Bid of a particular Bidder would be considered for opening only if their Technical Bid is qualified. ***The date & time of opening of Price Bid will be intimated separately.***

14. The Price Bid of those Bidders who do not qualify will be returned unopened.

15. Acceptance / Rejection of the Tender is entirely at the discretion of HLL.

16. **Bids received by FAX / E-MAIL will not be considered.**

ANNEXURE AN2

1. INTRODUCTION:

Harnessing of Non-Polluting Renewable Energy Resources to Control Green House Gases is receiving importance from the Government of India. The Solar mission, which is part of the National Action Plan on Climate Change has been set up to promote the development and use of Solar Energy for Power Generation and other uses with the ultimate objective of making solar energy competitive with fossil-based energy options. It has been proposed to set up a 25kWp Grid Interactive Solar Photovoltaic Power Plant on the roof top terrace of the HLL Lifecare Limited, Kanagala Plant.

2. SPECIFICATION FOR 25KW GRID INTERACTIVE SOLAR POWER PLANT

a) This specification covers the requirements of Design, Manufacture, Installation, Testing, Delivery and Commissioning of 25KW Grid Interactive Solar Power Plant complete with all Mountings and Accessories on Turnkey basis.
Solar PV System shall consist of following equipments:
1. Solar PV Modules consisting of required number of PV Cells.
2. Power Conditioning Unit/ Inverters with LCD display
3. Mounting Structures
4. Cables and Hardware
5. Junction Box and Distribution Doxes as required
6. Earthing Kit
7. Lightning Arrestors
8. PVC Pipes and Accessories
9. Tool Kit

b) Site Conditions

Temperature: Maximum 42 Deg.C, Minimum 15 Deg.C, Humidity: Around 80%

c) Specifications

PV Array Capacity:	25 kWp
Cell Technology:	Crystalline Silicon
Module Characteristics:	Modules of output 250Wp or above.
PCU Rating:	30 KWp
PCU Efficiency:	> 95%
Grid Voltage:	415V, 3 ph
Frequency:	50 Hertz
Frequency Variation Limits:	+/- 2%
Power Factor:	better than 0.9
Current THD:	< 5%
DC Offset Current:	should be less than 1% of the max. current rating.
Duty Cycle:	Average Hours of Operation/day: 8-10 hrs per day.

d) The Power-Conditioning Unit (PCU) should contain a Maximum Power Point Tracker (MPPT), Grid side Converter and Grid side Filter

e) The PCU must automatically synchronize with the grid and should shutdown in case of faults and very low power generation, and wake-up automatically from shutdown state

f) **Protections**: Over Voltage
Under Voltage
Frequency Errors
Over Current.

- In all faulty conditions the system should get isolated from grid and should start working when the grid is healthy
- Phase sequence reversal should be automatically detected and system should continue to work.
- Anti- Island Protection: When the grid fails the system should stop operation and it get isolated from the grid within a cycle before getting any damage to the system.

g) Metering & Indicators
Input side: Voltage and Current for individual strings with MCB
Output side: Voltmeter, Ammeter, Bi-directional Power/Energy Meter
SFU for output isolation
Status indication with LCD display

h) The system should automatically 'WAKEUP' during daytime and "SLEEP" during night.

3. EXISTING POWER SUPPLY ARRANGEMENTS:

Electrical Power requirement for HLL Lifecare Limited, Kanagala Plant is met from HRECS (HESCOM) power supply. The power received at 11000 V level is stepped down to 433/380 V by 3 Nos. bulk oil 11000/ 433 V, (2x1000 kVA, 1x400 kVA) Transformers. (380 V is used for all the lighting loads) Maximum demand is around 900 kVA and the daily energy consumption is around 15000 units.
DG Sets of 2x 1000-kVA capacities have been installed for providing back up supply to entire Plant during the period of power failure.

4. SCOPE OF SUPPLY:

The scope of this specification shall cover Design, Engineering, Manufacture, Quality Surveillance, Testing, Packing, Supply, Erection and Commissioning of 25 kWp Grid Interactive Roof Top Solar Power Plant with associated components on Turnkey basis.

a) These systems shall be complete with PV Modules, Inverter, Metering, Junction Boxes, AC, DC Distribution Boards and Cables, Communication Interface, and any other equipment necessary for Safe and Efficient Operation of the Solar Power Plant.
b) The work shall also include Interconnection of Solar Plant with the Grid.
c) The Civil, Fabrication works required for the successful Installation and Commissioning of complete system shall also be in scope of Supplier.
d) It is not the intent of this specification to specify completely herein all the details of Design and Construction of equipment as it is on Turnkey basis. However, the equipment offered shall conform in all respects to High Standards of Engineering, Design and Workmanship and be capable of performing in commercial operation up to Bidder's Guarantee in a manner acceptable to the Purchaser, who will interpret the meaning of Drawings, Specification and shall have the power to reject any work or materials, which in his judgment are not in full accordance therewith.
e) All the fittings and accessories that might not have been mentioned specifically in the specification but are necessary for equipment's of the Plant, shall be deemed to be included in the specification and shall be supplied and furnished by the Contractor without any extra charge.

f) It shall be responsibility of the Bidder to ensure that all the works as per scope of the specification are completed for safe and efficient working of the system.
g) The Bidder shall carry out all the necessary co-ordination with regard to sub-contracted items. The Purchaser/HLL will communicate only with the Bidder for all matter pertaining to this contract.
h) It shall be responsibility of the Bidder to obtain all necessary Statutory and Regulatory clearances from the Competent Authorities.
i) The Total Price Quoted for this contract shall be one lump sum all-inclusive basis and shall cover all items and service necessary for successful completion of the contract. Even if all components of a system included in this specification are not explicitly identified and /or listed herein, these shall be supplied under this contract to ensure completion of the system and facilitate proper operation and easy maintenance of the Plant.
j) It shall be responsibility of the Bidder to co-ordinate along with required support with the Competent Authorities to obtain the Subsidy.
k) The breakup of lump sum price shall also be given for clarity.
l) Bidder should depute its representative to attend any sort of breakdown within 48 hours after registering the complaint.
m) Bidder can contact to DGM (E&I)/Manager (Electrical) for further clarification required to quote for the requirements.

5. INSTRUCTIONS TO BIDDERS:

a) Bids shall be submitted in Two Parts, Technical Bid and Price Bid.
b) The Bidder shall be deemed to have carefully examined the specification in its complete form and to have fully informed and satisfied himself as to the details, nature, character and quantities of the work to be carried out, site conditions and other pertinent matters and details.
c) Bidder shall carefully study all sections of this specification and deviations if any shall be brought out in the Bid.
d) The Prices quoted shall be for Supply, including all Packing, Forwarding, Freight, Charges, Sales Tax, Excise Duty, Erection Testing and Commissioning.
e) If required Party can visit the site to study the probable location for Installation of the Plant to have more clarity to submit the Bid.

6. DELIVERY AND COMPLETION PERIOD

The entire work comprising Design, Engineering, Manufacture, Inspection and Testing of Performance, at Manufacturer's and/or Bidder's works, Delivery to Site, Erection, Testing and Commissioning shall be carried out within the period of 5-6 weeks from the issue of Work Order/Purchase Order.

7. GUARANTEE

The successful Bidder shall Guarantee the material and workmanship of all components and operation of the equipment and shall meet the requirement of the specifications. Should the performance test result at works deviate from the guaranteed values including the specified tolerance the Bidder shall correct his equipment at no extra cost to the Purchaser and repeat the performance tests within a reasonable period as agreed by the Purchaser. As regard to the component clauses if the Bidder fails to meet the guaranteed values subject to tolerances specified, the Purchaser will not accept the equipment/system.

8. CODES AND STANDARDS

a) All Equipment and Accessories shall Comply with requirement of Standards published by Bureau of Indian Standards (BIS). In case no BIS Codes exist the equipments shall meet the requirement of International Standard including IEEE for Design and Installation of Grid connected PV System. The list of Standards adopted shall be indicated in the Bid.

b) The quality of equipment supplied shall be generally controlled to meet the Guidelines for Engineering Design included in the Standards and Codes listed in the relevant ISI and other Standards, such as:
IEEE 928: Recommended Criteria for Terrestrial PV Power Systems.
IEEE 929: Recommended Practice for Utility Interface of Residential and Intermediate PV Systems.
IEEE 519: Guide for Harmonic Control and Reactive Compensation of Static Power Controllers.
National Electrical NFPA 70-1990 (USA) or Equipment National Standard.
National Electrical Safety Code ANSI C2 (USA) or Equipment National Standard.
IEC: 61215 (2005)-Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC: 61730 -1, -2 Photovoltaic (PV) Module Safety Qualification Part 2: Requirements for Testing
IEC: 60904-1(2006) Photovoltaic Devices- Part-I
IS 9000 Basic Environmental Testing Procedures for Electronic and Electrical items.

9. PV ARRAYS

a) The PV Modules convert the light reaching them into DC Power. The amount of power they produce is roughly proportional to the intensity and the angle of the light reaching them. Vendor 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.

b) Supplier shall follow the latest Engineering Practice; ensure long-term compatibility requirements and continuity of equipment supply and the Safety of the Operating Staff.

c) Vendor 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, lower cable losses, maximization of power transfer from PV Modules to Converter and the Grid etc).

d) The PV System 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.

e) The Manufacturer shall arrange Certification on Qualification of PV Modules.

f) 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.

g) 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.

h) Each Solar PV Module shall be warranted by the Manufacturer for at least 95% of its rated power for 10 Years from the date of System acceptance.

i) The Bidder shall provide the sample Solar PV Module electrical characteristics including current-voltage (I-V) performance curves and temperature co-efficients 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.

j) The PV Modules shall be suitable for continuous outdoor use.
k) The PV Module shall be made of high quality laminated in ultra violet stabilized polymer material such as Ethyl Vinyl Accelerate (EVA), Tedler, toughend class. The size of single crystalline silicon PV Cells shall be so chosen so as to maximize energy density and align with economies of scale.
l) 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.
m) The PV Modules shall be made of light weight cells, resistant to abrasion, hail impact, rain, water and environmental pollution. The PV Modules shall be provided with anti reflection coating and Back Surface Field (BSF) structure to increase conversion efficiency.
n) The PV Module shall use lead wire with weatherproof connector for output terminal.
o) The terminal box on the module should have a provision for opening for replacing the cable, if required.

10. PCU

a) The DC power produced is fed to inverter for conversion into AC. In a grid interactive system AC power shall be fed to the grid at three phase 415/380 V AC bus. Power generated from the solar system during the daytime is utilized fully by powering to the grid as long as grid is available.
b) The output of the inverter must synchronize automatically its AC output to the exact AC voltage and frequency of the grid.
c) 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.
d) Grid voltage shall also be continuously monitored and in the event of voltage going below a preset value and above a preset value, the solar system shall be disconnected from the grid within the set time.
e) Metal Oxide Varistors (MOVs) shall also be provided on DC and AC side of the inverter.
f) 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.
g) The inverter shall be a true sine way inverter for a grid interactive PV system.
h) 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.)
i) Nuts & bolts and the inverter enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.
j) All doors, covers, panels and cable exit shall be gasketed or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks.
k) Operation Mode:
    - Night or Sleep Mode: where the Inverter is almost completely turned off, with just the timer and control system still in operation, losses shall be less than 2 W per 5 kW
    - Standby Mode: where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 10 W).

- MPP tracking mode: The control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner shall automatically reenter standby mode as input power reduces below the standby mode threshold. Front panel shall provide display of status of the inverter.

11. SYNCHRONISING EQUIPMENT

Solar PV Systems shall be provided with synchronizing equipment having three input for comparison i.e. grid supply vs. solar output, DG output vs solar output so as to connect the SPV systems in synchronism with grid or DG. In case of grid failure, solar PV system shall be disconnected from the grid and out of synchronization for a period DG supply is not restored. PV system shall be synchronized with the DG supply after DG is started.

12. PROTECTIONS AND CONTROL

PV system software and control system shall be equipped with all the protection as described above. In addition to disconnection from the grid (islanding protection i.e. on no supply), under and over voltage conditions, PV systems shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenances are needed. Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit. A manual disconnect switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personal to carry out any maintenance. This switch shall be locked by the utility personal.

13. POWER QUALITY REQUIREMENTS:

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

Harmonic distortion is caused principally by non-linear load such as rectifiers and arc furnaces and can affect the operation of a supply system and can cause overloading of equipments such as capacitors, or even resonance with the system leading to overstressing (excessive voltage & current). Other effects are interference with telephone circuits and broadcasting, metering errors, overheating of rotating machines, overheating of delta connected winding of transformer due to excessive third harmonics or excessive exciting current. The limits for harmonics shall be as stipulated in the CEA Regulations on grid connectivity, which are as follows:

- Total Voltage harmonic Distortion= 5%
- Individual Voltage harmonics Distortion=3%
- Total Current harmonic Distortion=8%

Voltage Unbalance - The Voltage Unbalance in the grid shall not exceed 2.0%

Voltage Fluctuations - The permissible limit of voltage fluctuation for step changes, which may occur repetitively, is 1.5%. Occasional fluctuations limit is 3%.

14. MOUNTING STRUCTURES:

Hot dip galvanized iron mounting structures may be used for mounting the modules / panels/arrays. These mounting structures must be suitable to mount the SPV modules /panels/ arrays on the roof top, on the ground or on the poles/masts, at an angle of tilt with the horizontal in accordance with the latitude of the place of installation. 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.

15. POWER AND CONTROL CABLES:

Power Cables of adequate rating shall be required for interconnection of: - Modules/panels within array. The minimum size of 11 kV power cables shall be chosen taking into account Fault level contribution to the system and full load current. However, power cables size for 415 V systems shall be chosen taking into account the full load current & voltage drop. The allowable voltage drop at terminal of the connected equipment shall be max. 2.5% at full load. The derating factors viz. group duration of temp. duration shall also be considered while choosing the conductor size.

Control cables shall be 1.1 grades, heavy duty, stranded copper conductor, PVC type insulated, flame retardant low smoke (FRLS) extruded PVC type ST-1 outer sheathed. The cables shall, in general conform to IS- 1554 P+I & other relevant standards.

The permissible voltage drop from the SPV Generator to the Charge controller shall not be more than 2% of peak power voltage of the SPV power source (generating system). In the light of this fact the cross-sectional area of the cable chosen is such that the voltage drop introduced by it shall be within 2% of the system voltage at peak power. All connections should be properly terminated, soldered and/or sealed from outdoor and indoor elements. Relevant codes and operating manuals must be followed. Extensive wiring and terminations (connection points) for all PV components is needed along with electrical connection to lighting loads.

16. EARTHING MATERIAL:

Earthing is essential for the protection of the equipment & manpower. Two main grounds used in the power equipments are:

- System earth
- Equipment earth

The provision for lightning & surge protection of the SPV power source is required to be made. In case the SPV Array cannot be installed close to the equipment to be powered & a separate earth has been provided for SPV System, it shall be ensured that all the earths are bonded together to prevent the development of potential difference between any two earths.

Earth resistance shall not be more than 3 ohms. The earthing conductor shall be rated for the maximum short circuit current. & shall be 1.56 times the short circuit current. The area of cross-section shall not be less than 1.6 sq mm in any case.

The array structure of the PV modules shall be grounded properly using adequate numbers of earthing pits. All metal casing/ shielding of the plant shall be thoroughly grounded to ensure safety of the power plant.

17. JUNCTIONS BOXES OR COMBINERS

Dust, water and vermin proof junction boxes of adequate rating and adequate terminal facility made of Fire Resistant Plastic (FRP) shall be provided for wiring. Each solar PV panel shall be provided with fuses of adequate rating to protect the solar arrays from accidental short circuit.

18. GENERAL CONDITONS

Cabling work upto the grid side and PV panel mounting and fabrication work including all materials are under the scope of the supplier. Array support structure of galvanized mild steel sections on concrete pads

19. INSTALLATION, COMMISSIONING, TRAINING AND DOCUMENTATIONS

Supplier shall under take installation & commissioning and provide training to buyer's (HLL) maintenance team. Party has to submit all the relevant documents like Qualification Documents, Test Certificates, Catalogue of all Brought Out Items, User Manual, Electrical Circuit Diagram, Warranty Certificates etc… during handing over of the Project.

20. WARRANTY

Minimum 3 years from the date of Installation, Commissioning and Acceptance of the Unit at HLL site and it should be covered all the Manufacturing defects, Spare Parts, Worn out Parts, Electrical & Electronic Equipments/ Components and Service charges, etc. at free of cost during the period.

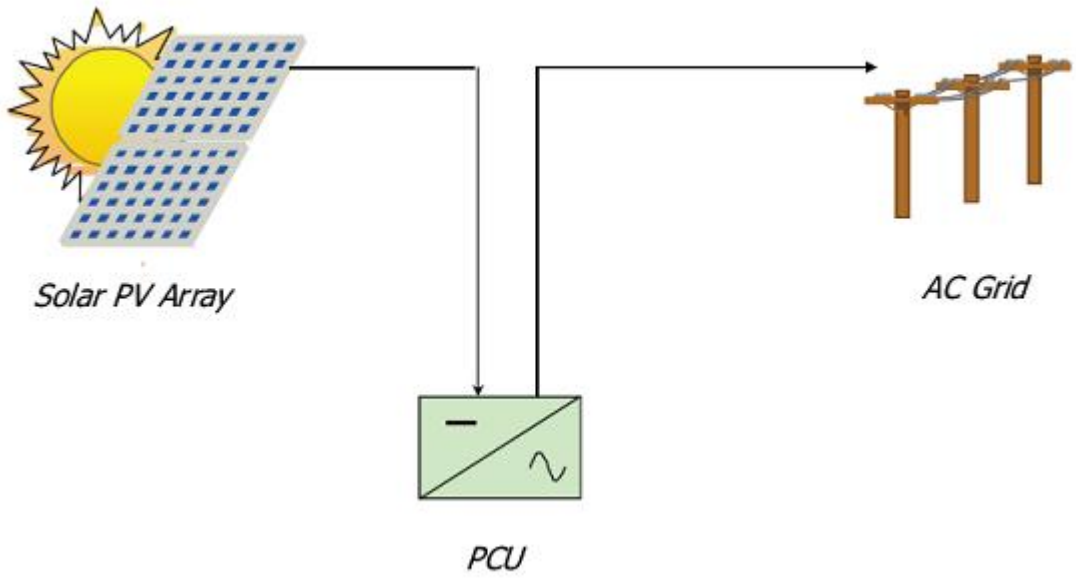
21. GURANTEED TECHNICAL PARTICULARS (TO BE FILLED BY THE BIDDER)

DC Output of PV Array (KWp)
Area Required (Square Feet)
No. of Cells in one PV Module
DC Rating of one Module (WP)
Connection Configuration
Rated DC Current of one Module
Rated DC Voltage of one Module (Vmpp)
No. of PV Module in one Array (all in series)
Max. DC Output Voltage of Array (Volt)
No. of Arrays
Rating of Inverter (KVA)
Nominal AC Output Voltage (Volt)
Variation In Output Voltage
Nominal Frequency (Hz)
Grid Frequency Variation
No. of Phases / Wire
AC Output Voltage Range (Grid)
Power Factor Range
Minimum Efficiency of Inverter (%)
No load Losses of Inverter (max)
DC Injection into Grid (max)
Ripple Content on DC side
Total Voltage Harmonic Distortion (AC side)
Individual Voltage Harmonic Distortion (AC side)
Total Current Harmonic Distortion (AC side)

We have read and understood the above Specifications and agree to abide by the same.

Place: **Signature of the Bidder**
Date: **Name, Seal and Address of the Bidder**

22. SCHEMATIC DIAGRAM OF THE GRID INTERACTIVE ROOF TOP SOLAR PLANT



We have read and understood the above Schematic Diagram and agree to abide by the same.

Place:
Date:

Signature of the Bidder
Name, Seal and Address of the Bidder

QUALIFICATION CRITERIA

ANNEXURE AN3

Sl No	Particulars	Response
1	Are you a Manufacturer or an Authorized Dealer for Grid Interactive Roof Top Solar Power Plant? If Authorized Dealer, a copy of the Original letter from the Manufacturer / Principal, duly attested, Should be furnished conforming the Dealership.	
2	Have you supplied, installed and commissioned at least 3 Grid Interactive Roof Top Solar Power Plant of rating minimum 10 kW in last 3 years? Enclose the Commissioning Reports of the same.	
3	Do you have in house testing facility to check all the parameters as per the required specifications, which can be audited during Factory Acceptance Test (FAT)?	
4	Can you ensure to attend any sort of breakdown within 48 hours?	
5	Have you enclosed the Customer Feedbacks from at least three (03) Clients for the Satisfactory Performance of the Plant supplied by you?	
6	In your Price Bid have you quoted for all the activities as per **ANNEXURE AN2**	

Name and Address of the Bidder along with details of the Tax Registrations:
Authorized Signatory's Name, Designation and Signature for all correspondence

All the information provided herein is true & correct.

List of Enclosures to Technical Bid:

1. _____
2. _____

SPECIAL NOTE:

1. The Bid should include specific answers strictly with respect to our Tender Specifications and Specification deviation if any, should be highlighted with clarifications. Otherwise, the Bid will not be considered. **Wherever space is insufficient, please enclose separate sheets.**
2. The Bid along with its enclosures should be furnished with Original only. **Bid received by FAX / E-MAIL will not be considered.**
3. **The Bidder should furnish the quantitative values with respect to specified values in the Technical Specification of the Quote clearly instead of mentioning either "Complied" , "Agreed" or "Confirmed" etc., otherwise, the Tender Quote is liable to be Rejected**

Place: **Signature of the Bidder**
Date: **Name, Seal and Address of the Bidder**

DECLARATION ACCEPTING TERMS AND CONDITIONS OF THE TENDER

ANNEXURE AN4

Date_____

To:
HLL Lifecare Limited
(A Govt. of India Enterprise)
Kanagala – 591225.
Tal: Hukkeri, Dist: Belgaum,
Karnataka, India

Dear Sirs,

Ref. Your TE document No. _____dated _____

We, the undersigned have examined the above-mentioned TE document, including amendment/corrigendum No. _____, dated _____ (if any), the receipt of which is hereby confirmed. We now offer to supply and deliver_____ (Description of goods and services) in conformity with your above referred document for the sum as shown in the price schedule(s), attached herewith in a separate envelope and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements.

We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form, for due performance of the contract.
We agree to keep our tender valid for the period mentioned in the tender notification. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

We confirm that we fully agree to the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum if any

(Signature with date)

(Name and Designation) Duly Authorized to sign Tender for and on behalf of M/s._____

Office Seal

FORMAT FOR MANUFACTURERS AUTHORIZATION FORM

ANNEXURE AN5

Date_____

To:
HLL Lifecare Limited
(A Govt. of India Enterprise)
Kanagala – 591225.
Tal: Hukkeri, Dist: Belgaum,
Karnataka, India

Dear Sirs,

Ref. Your TE document No. _____dated _____

We, _____ who are proven and reputable manufacturers of_____(name and description of the goods offered in the tender) having factories at_____, hereby authorize M/s._____(name and address of the agent) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred TE documents for the above goods manufactured by us.

We further confirm that no supplier or firm or individual other than M/s. _____ (name and address of the above agent) is authorized to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred TE documents for the above goods manufactured by us.

We also hereby extend our full warranty, CMC as applicable as per General Conditions of Contract, read with modification, if any, for the goods and services offered for supply by the above firm against this TE document.

Yours faithfully,

[Signature with date, name and designation] for and on behalf of M/s._____

[Name & address of the manufacturer]

Note:

1. *This letter of authorization should be on the letterhead of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.*

2. *Original letter may be sent.*

GENERAL CONDITIONS FORMING PART OF BID

This is Two- Bid System comprising of:

A) Technical Bid
B) Price Bid

1. Both the Bids shall be submitted in sealed covers separately. Tender NO. of Technical Bid and Price Bid shall be superscribed on the respective covers in order to clearly identify between the 2 Bids. The two separately marked Bids enclosed in single sealed cover with the respective Tender NO. mentioned thereon, complete in all respect, addressed to *THE DEPUTY GENERAL MANAGER (PURCHASE) HLL LIFECARE LTD., KANAGALA – 591 225, DIST- BELGAUM, KARNATAKA STATE, INDIA* should reach us on or before the due date and time mentioned in the NIT. The Purchaser shall not be responsible for postal delay if any, in the delivery of the Bidding Document or non-receipt of the same.

2. EMD of ₹ 50,000/- should be remitted by DD only, drawn in favor of HLL Lifecare Limited, payable at State Bank of India, Nipani and shall be enclosed along with the Technical Bid. **However, SSI Units / Bidders** who are currently registered and also will continue to remain registered during the Tender Validity Period with **DIC or NSIC** for the specific goods as per the NIT Specification shall be eligible for exemption from payment of Tender Cost and EMD ***on submission of Valid Copy of their Registration Certificate duly renewed along with the Technical Bid.***

3. Bids received after the deadline for the submission will not be considered.

4. Un-sealed Tenders received are liable to be rejected and this will be on sole risk of Bidders.

5. The Bidder is expected to examine all Specifications, Instructions, Forms, Terms & Conditions given in the Tender Document.

6. The Tender should be complete in all respects & incomplete Tenders are liable to be rejected.

7. Description and Specification should be the same as given in the Enquiry / Tender / NIT.

8. Any change in the Description or Specification shall be at the specific instruction of HLL. In case an offer of a brand is being made, the offer should be as per the Description given in the NIT / Tender and the brand name to be given in bracket. A Separate Sheet should be attached.

9. HLL Lifecare Limited reserves the right to split up the order for the entire quantity on more than a supplier and also reserves the right to accept or reject the offer without assigning any reason.

10. Addendums / Amendments issued if any to this NIT / Tender Documents shall be part of this NIT / Tender Documents and shall be informed to the Bidders who have purchased the NIT / Tender Documents or shall be published in our website. The Bidders are advised to check our website specified above to download the Addendums / Amendments issued, if any.

11. THERE WILL NOT BE ANY POST TENDER NEGOTIATION EXCEPT WITH 1st LOWEST.

12. Security Deposit of 5% of the total order value should be deposited.

13. The Parties have to abide by Delivery Schedule strictly. HLL Lifecare Limited reserves the right to impose Penalty @ 0.5% value of the delayed material per week of delay subject to a maximum of 7.5% of the value of the supply defaulted if material is delayed beyond the due date and accepted by the Company.

14. Acceptance of the delayed supplies subject to Penalty Clause is solely at the discretion of the Company (HLL Lifecare Limited).

15. Rejected material should be taken back and replaced with supplier's cost within 7 (seven) days.

16. Dispatch Documents like Delivery Note, Packing List and Invoice should contain the following details:

a) Purchase Order NO. / Supply Order NO. & Date.
b) Description of Items as contained in the Purchase Order.
c) Quantity Dispatched
d) Total NO. of Packages.

17. The following information shall be stenciled or labeled on the exterior of the packing in bold letters, clearly visible, at least 50 mm high with waterproof ink.

A. Instruction for Storage and Handling.
B. Name and Address of Manufacturer.
C. Companies Address in full.
D. All Packages should be numbered and it should appear on top of the packages serially.

18. The Jurisdiction of any disputes, suits and proceedings arising out of this NIT / Tender shall be only in the Courts of Hukkeri Taluk, Belgaum Dist. / Trivandrum.

19. Indemnity Clause

If the Supplier fails to execute the order within the time prescribed for the delivery of goods ordered or violates or infringes the existing rates as mentioned and agreed to in the Purchase Order the Supplier shall and will indemnify the Company against all losses or damages whatsoever to be incurred or sustained including the legal cost or expenses incurred by the Company by reason of non-delivery of goods at agreed quantity and rate within the time specified in the Purchase Order. The Company will initiate legal action if the Supplier fails to execute the Purchase Order as per the schedule in the Purchase Order for the actual loss suffered or 5% of the total order value whichever is higher along with costs.

20. HLL Lifecare Limited shall fix the criteria for responsiveness of a Bid based on critical factors in the Tender Document. Bids pronounced non-responsive by HLL shall be summarily rejected.

21. Suppression of facts will disqualify the Bidder.

22. Payment Terms: Our intention is to make payment by cheque within 30 days of receipt; inspection and acceptance of the material and cheque will be forwarded to parties through Speed Post.

23. HLL Lifecare Limited reserves the right to qualify or not a Tender without assigning any reasons. The decision of HLL will be final and no correspondence will be entertained in this regard.

24. The Tender is liable to be suspended or cancelled at anytime at the discretion of the Company without assigning any reasons.

We have read and understood the above Conditions and agree to abide by the same.

Place: **Signature of the Bidder**
Date: **Name, Seal and Address of the Bidder**

SCHEDULE - A: PRICE BID

ITEM: SUPPLY, INSTALLATION AND COMMISSIONING OF 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT – Qty: 01 SET.

SL. NO.	PARTICULARS	AMOUNT (INR)
01	BASIC PRICE (including all the Components & Accessories as per Tendered Specifications)	
02	PACKING CHARGES (___ %)	
03	EXCISE DUTY (___ %)	
04	SALES TAX (___ % CST / VAT)	
05	FREIGHT CHARGES	
06	INSURANCE CHARGES	
07	INSTALLATION, ERECTION & COMMISSIONING CHARGES	
08	OTHER CHARGES, IF ANY (specify the name of the charges)	
09	SERVICE TAX (%) – inclusive @ 12.5% / applicable extra @ 12.5% on SL. NO. _____ above / Not Applicable	
GRAND TOTAL INCLUSIVE OF ALL TAXES & DUTIES F.O.R. HLL KANAGALA		
Rupees in words _____		

DELIVERY PERIOD (FROM THE DATE OF ORDER): _____

TERMS AND CONDITIONS OF PRICE BID:

1. The rate should be inclusive of all for Supply, Installation & Commissioning on TURN KEY BASIS.
2. Civil Works, if any, required for Installation, Foundation laying etc., to be carried out by the party.
3. Party should take care of all Safety Measures and should obtain Work Permit from our Safety Dept. before starting the work.
4. In case of any damages caused to our (HLL Lifecare Limited) property by you/ your workmen while executing the above job, the Company (HLL Lifecare Limited) shall recover the cost of such damages from you.
5. In the event of any accident to your workmen or personnel while executing the above job in the Company's Premises (HLL Lifecare Limited), you shall pay the compensation as per the Workmen's Compensation Act and the rates framed there under.
6. Statutory Deductions, if any, applicable, like PF, ESI, Work Contract Tax and TDS etc., will be recovered from your payment.
7. There will not be any post Tender negotiation except with L1 (Lowest).
8. TIN / VAT NO. shall be furnished.
9. Service Charges, if any, on freight element shall be borne by Suppliers only.

SCHEDULE - A: PRICE BID

ITEM: SUPPLY, INSTALLATION AND COMMISSIONING OF 25KW GRID INTERACTIVE ROOF TOP SOLAR POWER PLANT – Qty: 01 SET.

10. There shall not be Corrections / Overwriting in Price Bid, if so, same are to be attested.

11. Rate shall be quoted in the enclosed format only. Please refer SCHEDULE - A: PRICE BID.

12. Rates quoted shall be valid for a period of one year, from the date of your Offer.

13. Specifications of Items are as per Notice Inviting Tender (NIT).

We have read and understood the above Conditions and agree to abide by the same.

Place: **Signature of the Bidder**
Date: **Name, Seal and Address of the Bidder**

Note: We are utilizing services of M/s. Professional Courier Services for incoming and outgoing Letters / Parcels on day-to-day basis.