

TENDER DOCUMENT

Free of Cost

for
Supply, installation and maintenance of 2.5 kWp Rooftop Solar
PV Power Plant with battery back up
at
Kolkata Circuit House, Bedi Bhavan, Kolkata - 700 029



WEST BENGAL GREEN ENERGY DEVELOPMENT CORPORATION LIMITED

CIN: U40108WB2007SGC121189
(A Govt. of West Bengal Company)

**Bikalpa Shakti Bhavan, J-1/10 EP & GP BLOCK, Sector-V,
Salt Lake, Kolkata - 700 091,
Phone: (033) 2357 6543/ 6361,
Fax: (033) 2357 6569
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Website: www.wbgedcl.in**



West Bengal Green Energy Development Corporation Ltd

(A Govt. of West Bengal Company)

CIN: U40108WB2007SGC121189

: **Registered & Corporate Office :**

Bikalpa Shakti Bhavan, Plot-J-1/10 EP, GP Block, Salt Lake Electronics Complex,
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Ref. No. : WBGEDCL/236/529

Date: 21.07.2014

NOTICE INVITING TENDER

NIT No. : WBGEDCL/T-1/2014-15

Date: 21.07.2014

Sealed tenders are invited by West Bengal Green Energy Development Corporation Limited (WBGEDCL) from the financially and technically capable, resourceful, reliable, bona-fide and experienced contractor to submit their offer for the work detailed below.

1. Information about the work:

1.	Name of Work	Design, supply, installation, testing and commissioning of a 2.5 kWp Rooftop Solar PV Power Plant with battery back up at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029.
2.	Eligibility of the Bidder	The Eligibility Criteria is stated below in Clause 2 below
3.	Estimated cost of the System	Rs. 4,50,000/-
4.	Cost of Tender Document	NIL
5.	Earnest Money to be Deposited	Rs. 9,000/- (No exemption in case of EMD on any ground)
6.	Validity of offer	120 days from the date of opening of the Financial Bid. However it may be extended in case of exigencies with consent from the successful bidder.
7.	Time of Completion of Work :	30 (thirty) days from the date of handing over of site
8.	Name of the Concerned Office	West Bengal Green Energy Development Corporation Ltd (WBGEDCL), Bikalpa Shakti Bhavan, Plot – J1/10, Block – EP & GP, Sector – V, Salt Lake City, Kolkata – 700 091. Ph: 033- 2357-6361/6543, Fax: 033-2357-6569, e-mail: wbgedcl@rediffmail.com / wbgedcl@gmail.com

2. Eligibility criteria for participation in the Biding:

Sl. No.	Eligibility Criteria	Supporting Documents Required
1	The Bidder should be a Company registered under the Indian Companies Act, 1956/ Companies Act, 2013/ Partnership Firm and having the clearance of all statutory obligation	i) Registration Certificate under Companies Act /Registered Deed for partnership Firm /Trade License (13-14 or 14-15) ii) VAT Registration Certificate, iii) Service Tax Registration Certificate, iv) PAN card , v) IT Return for the Assessment year 2013-14 vi) PF Registration Certificate
2	Bidder must have its registered and functional technical and maintenance unit in West Bengal	i) Registration Certificate under Companies Act /Registered Deed for partnership Firm ii) Copy of the Tread License for the year 13-14 or 14-15 in the name of the Bidder
3.	Credential –1 : The Bidder, must have the credential of satisfactory execution of contract(s) to design supply, installation and commissioning of Solar PV power plant(s) of capacity 1 kWp minimum anywhere in India during the period from 2010 onwards.	Credential –1 : a) Copy of the Purchase order(s)/ Copy of the Agreement(s) with the purchaser b) Copy of the Completion Certificate(s) from purchaser / ordering authority
4.	If the Bidder have their registered office outside West Bengal	
4a)	The Bidder must have his own service centre/offices at anywhere in West Bengal	Copy of the Trade License for the year 13-14 or 14-15 in the name of the Bidder
	Or	
4b)	The Bidder must have their authorized Service Provider anywhere in West Bengal.	i) Copy of the Tread license for the year 13-14 or 14-15 in the name of the authorized Service Provider ii) Copy of the agreement with the authorized Service Provider being executed at least six month prior to the date of issuance of this NIT.

West Bengal Green Energy Development Corporation Limited (WBGEDCL) reserves the right to modify, amend or supplement this document.

Some company / firm names have been mentioned only to provide a sense of standard and not to show preference and prejudice.

3. The Tender shall be submitted in triplicate in 3 (three) separate Sealed Covers (COVER-I, II & III) enveloped in Cover IV duly sealed.

Cover-I :

- i) Name of the Item, Tender No., Due Date & time of Tender Submission & the Words “**Cover-I, Eligibility Criteria and Earnest Money**” should be clearly written on the front side of the envelope.
- ii) This shall contain minimum eligibility criteria and Earnest Money duly signed with a forwarding letter as per **Proforma –I** mentioning offer reference no., date & tender no., due date.
- iii) Amount of Earnest Money should be strictly as per tender.
- iv) This shall also contained Name of the Bank with complete address, Account No., IFSC Code, Solvency Certificate or comfort letter from Bankers.

In case of any shortfall, the offer will be treated as cancelled and in that case Cover -II & III of the bid shall not be opened.

Cover-II :

- i) Name of the Item, Tender No., Due Date and Time of Tender Submission and the words, “**Cover-II and Techno-Commercial Bid**” should be clearly written on the front side of the envelope. This envelope shall contain
- ii) Complete Commercial & Technical Offer in duplicate, mentioning offered quantity within stipulated delivery schedule of the Tender, with a forwarding letter as per **Proforma –II** mentioning offer reference no., date & tender no. with due date of opening.
- iii) Both the copies shall contain all the information including Original Tender document duly filled in and signed along with official seal, Test reports, Manuals, Literatures, Drawings, Brochures, Catalogs and the desired documents as mentioned in NIT, if any. In case of any deviation and deficiency in the Techno Commercial offer of the bid, WBGEDCL reserves the right to reject the offer and not open the price bid.

Cover-III :

- i) Name of the Item, Tender No., Due Date & time of Tender submission & the word “**Cover-III and Price Bid**” should be clearly written on the front side of the envelope. This shall contain the complete Price Schedule only, in duplicate with a forwarding letter as per **Proforma –III** mentioning offer reference no., date & tender no. with due date of opening.

Revision/withdrawal of price bid after opening of Techno-commercial bid will not be entertained.

Cover-IV:-

All the above three envelopes, Cover-I, Cover-II and Cover-III duly sealed, shall then be enveloped in Cover-IV duly sealed superscribing “Tender No., Item, Due Date, time of opening & No. of Covers inside” with mentioning Tenderer s name & seal. Tender document duly filled in and signed along with official seal and all relevant documents must be submitted in the Tender Box

only.

If necessary documents of Minimum Eligibility Criteria and Earnest Money are not submitted in Cover-I, Cover-II & III will not be opened.

Cover-I and Cover-II will be opened on the scheduled date and time in presence of attending bidders or their representatives with authorization letter signed by the Tenderer positively. No price adjustment by the tenderer shall be accepted after opening of the Price Part.

4. Tender documents can be obtained from WBGEDCL office free of cost and download the same from our website **www.wbgedcl.in**
5. The offer prepared by the Bidder and all correspondence and documents relating to the Bid exchanged by the Bidder and the purchaser will be written **in English**. The desired documents and any other document uploaded by the Bidder will be written in English.
6. The Bidder will be deemed to have carefully examined the Tender Document also to have been satisfied himself as to the nature and character of the system to be supplied and installed against the contract, and all relevant matters & details. Clarification if any will be considered only if pointed out by the firm in the Pre Bid meeting
7. The tender is a whole system based tender and not a component wise break up tender.
8. This Bid is a **No Deviation Bid**. Request for any deviation may be considered only if pointed out by any prospective Bidder(s) in the Pre Bid meeting. No deviation will only be considered with the bid.
9. Before issuance of the **WORK ORDER**, WBGEDCL will verify the credential(s) and/or other document(s) of the lowest bidder. After verification, if it is found that the document(s) submitted by the lowest bidder is/are not in order the bid will be cancelled and no work order will be issued in favour of the said bidder and the EMD will forfeited.
10. Lowest bidder will submit the cost break-up of each item .
11. Submission of tender will not be construed to mean that such bidders are automatically considered qualified.
12. **Important date and time schedule:**

SL. NO.	PARTICULARS	DATE & TIME
1.	Date of publishing NIT in Notice Board & Website	21.07.2014
2.	Documents collection or download start date	21.07.2014

SL. NO.	PARTICULARS	DATE & TIME
3.	Documents download end date & time	04.08.2014
4.	Last date & time of Tender submission at the Tender Box of WBGEDCL , “ Bikalapa Shakti Bhaban”, J1/10, EP/GP Block , Sector V , Saltlake , Kolkata 700091	05.08.2014 upto 2.30 p.m.
5.	Tender opening date & time for Eligibility and techno-commercial offer	05.08.2014 upto 2.30 p.m.
6.	Date & time for opening of Price bid	To be Notified Later

13. WBGEDCL reserves the right to reject any or all offers or part thereof without assigning any reason what so ever unilaterally. WBGEDCL also does not bind itself to award the contract to lowest bidder but may split the order among other bidders subject to acceptance of approved rate at the discretion of the authority of WBGEDCL in a possible manner.

14. Disclaimer

Though adequate care has been taken for preparation of this document, the bidder shall satisfy himself that the document is complete in all respect. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any within the time of the pre bid meeting it shall be presumed that this document is complete in all respects.

Sd/-
(T. K. Hazra)
Managing Director

“GENERAL TERMS AND CONDITIONS OF THE TENDER”

(1) MODE OF EXECUTION : The Work will be procured as a complete package. The entire work will have to be executed on turnkey basis. Any minor item(s) not included in the schedule or specification but required for completion of the work will have to be carried out/supplied without any extra cost.

(2) EARNEST MONEY :

(a) The bidder should provide EMD of Rs. 9,000/- (Rupees Nine Thousand only) in the form of Crossed Bank Draft / Pay Order / Banker s Cheque of scheduled Bank drawn in favour of ‘**West Bengal Green Energy Development Corporation Ltd**’, payable at Kolkata, with validity upto 3 (three) months from the due date of submission of tender. Tenderer shall not claim any interest on Earnest Money Deposit.

(b) Earnest money will be refunded to the unsuccessful Bidders after finalization of the tender and in case of successful Bidder EMD shall be refunded only after completion of the total value of the order placed on the tenderer.

(c) Earnest Money submitted will be liable to forfeiture,

(i) If successful tenderers fail to accept Purchase Order / LOI issued within their offered validity period, not below 120 days from the next date of opening of tender.

(ii) In case of failure to supply material by the supplier as per delivery schedule, WBGEDCL may, at its discretion resort to Risk Purchase clause as provided in G.T.C.

(3) TERMS OF PAYMENT:

Subject to any deduction which the Owner may be authorized to make under this contract, and or to any additions o deductions provided for in this contract, the Contractor shall be entitled to payment as follows:

(i) All payments shall be made in Indian Rupees, unless otherwise specified in the order.

(ii) All payment shall be made on the basis of actual measurement for the quantified items as per schedule of works.

(iii) The Contractor shall submit the bill / invoice in triplicate for the work executed showing separately CST/VAT, service taxes, customs duties, excise duties and any other statutory levies in the bill / invoice.

Schedule of Payment.

The payment will be made to the Contractor on award of the contract as follows:

Payment Milestone Percentage (%) of Contract Price:

Sl. No	Head of Payment	Percentage (%)
1	(A) Capital Cost	
	After 30 days of completion of the installation, successful testing & commissioning of solar power PV Project after approval of all drawings, supply of materials, civil works and interconnection of all major equipments.	90% of (A)
2.	(B) Annual Maintenance Cost :	
	(1) After successful completion of 1 st year of O&M period of the contract.	2 % of (A)
	(2) After successful completion of 2 nd year of O&M period of the contract.	2 % of (A)
	(3) After successful completion of 3 rd year of O&M period of the contract.	2 % of (A)
	(4) After successful completion of 4 th year of O&M period of the contract.	2 % of (A)
	(5) After successful completion of 5 th year of O&M period of the contract.	2% of (A)
3.	(C) After satisfactory completion of Wiring including accessories as per actuals described in the Technical section of the Tender.	100% of (C)
	Total	100% of (A&B&C)

The bidders may submit their invoice/bill in duplicate clearly mentioning this order no. along with Original Challan signed by Kolkata Circuit House Authority alongwith photograph of the system installed for effecting payment

(4) PAYING AUTHORITY : Managing Director, WBGEDCL will be the Paying Authority.

(5) CALIBRATION : The instruments/equipment required for Inspection & Testing should have valid calibration as per following guideline :

1. Calibration Certificate issued by Laboratory accredited by NABL may be accepted unconditionally provided the certificate bears an Accreditation body Logo.

2. For Testing equipments, where NABL Accreditation is not available, Calibration Certificate from Educational Institutions like IIT s, NIT s, J.U., C.U., BHU only can be accepted provided they can demonstrate traceability.

Necessary confirmation regarding above is to be given along with inspection offer failing which the inspection offer will not be accepted. If during inspection & testing, the suppliers fail to produce Calibration Certificate as indicated above the offered lot may be rejected.

(6) DELIVERY : The date of receipt of offer for inspection of the materials/ equipment along with works test certificate will be treated as the date of delivery of that particular lot provided the materials pass in inspection and testing. Delay in offer beyond the delivery schedule to be incorporated in the order shall attract imposition of L.D. as per L.D. Clause. The materials should reach the destination store within a stipulated time as mentioned in the Tender document.

(7) TESTING & INSPECTION : Material Inspection will be carried out after submission of all test reports /certificates and after completion of the manufacturing work, against formal intimation from the contractor. The contractor will, give notice of any material being ready for testing and WBGEDCL, if desired, will attend at the contractor's premises and may proceed with the routine tests. The material will have to be dispatched at site after inspection and clearance from the purchaser. The inspection setup and instruments must be provided by the contractor within the contract value.

(8) DELAY IN EXECUTION OR FAILURE TO SUPPLY : If the work is delayed on account of

- (i) increase in quantity of work.
- (ii) Suspension of work as ordered by the WBGEDCL.
- (iii) Force Majeure conditions.
- (iv) Any other causes, which in absolute discretion of the Engineer are beyond the contractor's control, the contractor shall appeal to WBGEDCL in the form of a written application along with the complete delay analysis before expiry of the contract period, bringing out the causes responsible for the delay, for grant in suitable time extension.

WBGEDCL, if satisfied, that the delay is not attributable to the fault of the Contractor, may grant suitable time extension. However, if the contractor is found responsible for any delay in completion of the work, formal time extension shall also be granted by the WBGEDCL but reserving its right to recover a sum towards liquidated damage, for late completion as per Liquidated Damage Clause.

(9) COMMISSIONING: After the erection and testing of the equipment/works as per above, commissioning of the power plant and works will be carried out and here the term "Commissioning" will mean the activities of functional testing of the power plant after erection and testing, including tuning or adjustment of the equipment for optimum performance and demonstrating to the Purchaser that the equipment performance meets the requirement of the specifications.

(10) LIQUIDATED DAMAGE: In case the contractor fails to achieve successful commissioning of the plant by the due date indicated in time of completion, then the owner shall levy the liquidated damages on the contractor at the rate of ½% (half percent) of the contract price per week of delay or part thereof, subject to a maximum of 5% (five percent) of the contract price. The contractor shall not be charged liquidated damages in case WBGEDCL finds out that the delay is on account of non availability of transmission lines.

(11) REPEAT ORDER: With due consent of the supplier the WBSEDCL may place repeat order within a period of three months from the date of completion of order to cover approximately 50% of the ordered quantity on successful performance of the contract and on the need of the WBSEDCL, on the basis of existing rates, terms and conditions. The total value of order shall be adjusted in case of change in quantity of materials based on the unit prices upon which the original order was placed.

(12) RISK PURCHASE :

- i) The time of delivery (offer for inspection) or physical dispatch or completion of commissioning work stipulated in the LOI or work order shall be deemed to be of the essence of the contract.
- ii) If the contractor fails to deliver or dispatch any consignment within the period prescribed in the said purchase order/contract/letter of intent, the purchaser shall be entitled to purchase such consignment or if not available, the best and nearest available substitute elsewhere on the account and at the risk of the contractor or to cancel the contract and the contractor shall be liable to compensate for any loss or damage which the purchaser may sustain by reason of such failure on the part of the supplier.
- iii) If the Contractor fails, on receipt of the order to take up the work within a reasonable period or leave the work site after partial execution of the work WBGEDCL shall have the liberty to get the work done through other agency at his own risk and additional cost if any. If the situation, so warrants, to compel WBGEDCL to cancel the order placed on the Contractor, he shall be liable to compensate the loss or damage, which WBGEDCL may sustain due to reasons of failure on his part to execute the work in time.
- iv) If there is a failure to execute the contract fully, WBGEDCL reserve the right to invoke Bank Guarantee/forfeit Earnest Money deposit/cash security to the extent of loss so suffered by the WBGEDCL on risk purchase or otherwise and may deduct the additional amount, if any, so incurred by the Company from other claim/bill lying with the WBGEDCL.

(13) ACCEPTANCE OF ORDER : WBGEDCL will communicate acceptance of tender to the successful bidder/tenderer by a letter of Intent/formal work order. In case of letter of intent, formal work order will follow as early as possible after receipt of unconditional acceptance of L.O.I/formal work order and its compliance. The successful tenderer shall communicate the acceptance of the order.

(14) CONCESSION : No price preference will be allowed to any tenderer based on the size of the industry or its geographic location. Co-operative Society will not be considered with separate status.

(15) RESERVATION : WBGEDCL reserves the right to deviate any of the terms and conditions stated herein and reject any or all tenders unilaterally and not bound to accept the lowest tenders.

(16) LEGAL JURISDICTION : If any dispute or difference arises with respect to quality/quantity of the equipment/materials pertaining to this order or any other terms and conditions of the order including its execution, such dispute/difference shall be subject to settlement under the jurisdiction of Kolkata High Court only.

(17) LAW & PROCEDURE : The law which is to apply to the contract and under which the contract is to be constructed shall be Indian Law. The law governing the procedure and administration of any arbitration instituted by the Clause for Arbitration shall be Indian Law.

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

(19) CANCELLATION / TERMINATION OF ORDER (if placed) : The time period for effecting complete supply and delivery of the above materials/equipment as indicated through the delivery schedule enclosed shall have to be treated as the essence of the contract. The Company reserves the right to repudiate the contract if the above period is not strictly adhered to. In the event of failure in effecting the desired supply and delivery of the above equipment/materials within above stipulated due date as incorporated through the schedule enclosed, the above order may be cancelled on submission of necessary notice in this regard and fresh order may be placed on the next higher bidder or on any other bidder, as a result of which the extra cost thus liable to be incurred shall be realized from the original supplier's pending bills which may be lying with the WBGEDCL.

(20) QUALITY ASSURANCE PROGRAMME: Immediately on receipt of this order you shall have to submit a "Quality Assurance Plan" indicating the specific quality control procedure and practices adopted in the major activities of production to ensure its standard.

(21) PRE REQUISITES: All tenderers shall ensure that all pre-requisites as mentioned in the Tender Notice and Tender Specifications are duly fulfilled by them and if there be any deficiency regarding non-submission of any document, the WBGEDCL reserves the right to cancel the Tender unilaterally.

(22) SOCIAL ACCOUNTABILITY STANDARDS: The contractor should work following the rules prescribed in Social Accountability Standards 8000:2008.

(23) OPERATION & MAINTENANCE : Bidders to provide 5 Years SOS maintenance support. Scope will include topping up of battery. Bi-Monthly maintenance report and Generation report of the power plant as per format duly approved by WBGEDCL must be submitted by the contractor to WBGEDCL on regular basis. If any fault occurs or for any maintenance work, the service engineer with spares if required should attend and repair the system within 24 hours of intimation.

(24) TAXES , DUTIES, LEVIES :

(a) The quoted Price inclusive of taxes and duties

(b) **STATUTORY LEVIES** The rates as offered and accepted in this contract are inclusive of all taxes and statutory levies such as Income Tax, Octroi/Terminal Tax, Sales Tax, service tax, Turnover Tax, royalty, contribution under Employee's State-Insurance (ESI Contribution etc.) and local taxes payable under the respective statues.

(c) **INCOME TAX** Income Tax will be deducted at source as per provisions of the Income Tax Act and a certificate of such deduction made in each financial year will be furnished to the contractor by disbursing officer.

(d) **SALES AND OTHER TAXES** Sales Tax, Turnover Tax, VAT, Building and other Construction Workers Welfare Cess or any other tax or cess will also be deducted from the bills of the **contractor if so directed by the authorities concerned.** Otherwise it is the responsibility of the contractor to deposit the taxes.

(e) **LOCAL LAWS AND LEVIES** The contractor will comply with the proper bye laws and legal orders of the local body or public authority under the jurisdiction of which the work is executed and pay all fees and charges for which he may be liable. Nothing extra will be payable on this account.

Signature of Authorized Person :

Name :

Designation :

Company Seal :

SPECIAL TERMS AND CONDITIONS:

1. All prices should be quoted inclusive of insurance cost, handling cost etc.
2. The work shall have to be completed within 30 days from the date of handing over of site.
3. The installation work should be done without any modification of the building/area. However, if any type of minor modification is required, prior approval from WBGEDCL shall have to be obtained.
4. The work should be carried out strictly as per specifications.
5. The entire system should be guaranteed for a period of 5 years. During such period any components if found defective has to be replaced by the contractor free of cost.
6. The work should be treated as turnkey contract. Any items not mentioned in the tender but required for completion of work shall have to be supplied by the contractor.
7. The contractor should organize free training program on the system for the user.
8. Offer not accompanied with signed tender documents along with EMD and proof of eligibility criteria will be summarily rejected without assigning any reason.
9. The Lowest bidder will submit the cost break-up of each item .
10. Please Note, all the bidders are requested to quote their price in the price bid for the job from SI No 1 to 13 only referred under “schedule of work”.
11. The bidders have to submit a cost break-up of the Job under SI No. 14 referred under “schedule of work” as per actual after completion of the job at site. Payment will be made on the basis of actual amount of work done.
12. The bidders have to submit only per meter wirring cost for the job under SI No.14 “referred under schedule of work” in the price bid but the same should not be included/sum up in total price quoted.
13. The quoted price in the price bid will be excluding Wirring cost.

Signature of Authorized Person :

Name :

Designation :

Company Seal :

TECHNICAL COMPLIANCE

SCOPE OF WORK

The scope of the work includes design, manufacture, supply, installation, maintenance and commissioning of 2.5 kWp Solar PV Power Plant with battery back-up at Kolkata Circuit House, Bedi Bhawan, Kolkata - 29 to light up 37 Nos indoor and 10 nos outdoor light as given in the tender. The installation includes civil work, supply of all materials, internal wiring with PVC Casing- N -Caping and external wiring using PVC conduit, connecting the system with the suitable fixture for the Compact Fluorescent Lamp. The scope includes maintenance of the system for 5 (five) years and also arrangement of appropriate user training. Technician should be available on call basis for any maintenance with spare parts within 24 hours of intimation.

A tentative Layout diagram of the 2.5 kWp SPV Power Plant is given in “**Schematic Diagram - A**”.

The SPV power plant to be installed should be Robust, Economic, Efficient and Time tested and having a good aesthetic view matched with the Building. However any modification work of the building needs prior approval form WBGEDCL.

Signature of Authorized Person :

Name :

Designation :

Company Seal :

Technical Details

1. **Schematic Diagram of The Power Plant** – The Schematic Diagram of the Power plant is as provided in Diagram A below. Vendors are requested to please provide the quotation as per these specifications only.

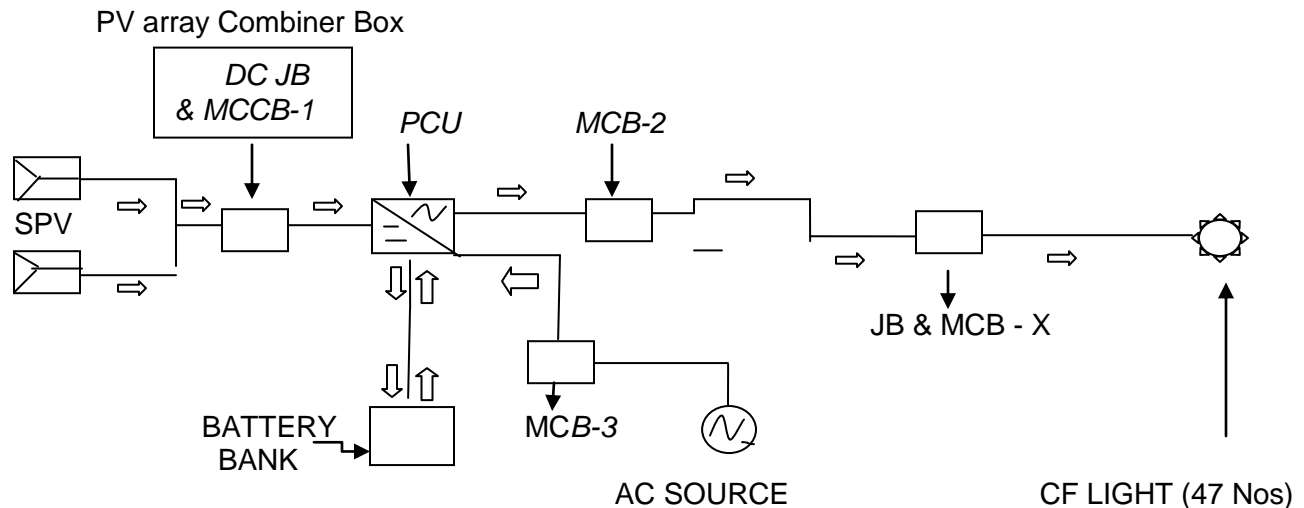


Diagram A: Schematic diagram of the Power Plant

System Details:

The Total System as shown above will consist of a PV Array of 2.5 kWp minimum, 1 No Dual charging mode PCU which will charge the battery both from Solar PV when available and also from the conventional AC supply when power from Solar PV is not adequate and a battery bank of 24 nos 2V-300 Ah batteries. There should also be a provision for manually operated change over switch through which the solar lights can be supplied power directly from the conventional AC supply when the PV system is out of order in order to maintain the system. The configuration will be as shown in the diagram above.

Wiring Details:

Distribution of Load/CF Light Points:

➤ **Outdoor Lights:**

- 10 Nos wall mounted decorative outdoor type fixture comprises with 18 W CFL should be connected through a common 6 Amp MCB.

➤ **Indoor Lights** : (37 Nos indoor type decorative fixture comprises with 11 W CFL)

- Reception : 4 nos CF light through a common 6 Amp MCB.
- Reception Lounge : 3 nos CF light through a common 6 Amp MCB.
- 1st floor : 3 nos CF light in the corridor through a common 6 Amp MCB.
- 2nd floor : 5 nos CF light in the corridor through a common 6 Amp MCB.
6 nos CF light in the Dining room through a common MCB of 6 Amp.
4 nos CF light in the Conference room through a common 6 Amp MCB.
- 3rd floor : 6 nos CF light in the corridor through a common 6 Amp MCB.
- 4th floor : 6 nos CF light in the corridor through a common 6 Amp MCB

Technical Specification

1.0 Solar PV Modules

The Cell of the Modules shall be poly crystalline. The capacity shall be consider as per declared capacity in the published technical brochures of the proposed PV Module Manufacturer.

PV Module capacity type: 250 Wp

However PV Module capacity less than 250 kWp and mix match in module capacity as well as module type will not be allowed.

The PV modules must qualify the relevant **IEC 61215 or IS 14286 and IEC 61730**. The proposed PV Module must have the Test Certificate issued from accredited test laboratories of MNRE Government of India under JNNSM Program. The test certificates issued from IEC accredited laboratories shall also be acceptable.

PV Module must be manufactured in India.

Each PV module used in this solar power project must use an RF identification tag. The information must be mentioned in the RFID used on each module as per guideline of MNRE Government of India (This can be inside or outside the laminate, but must be able to withstand harsh environmental condition)

Performance Warranty:

The manufacturer should warrant the output of Solar Module(s) for at least 90% of its rated power after initial 10 years. If, Module(s) fail(s) to exhibit such power output in prescribed time span, the Contractor will either deliver additional PV Module(s) to replace the missing power output with no change in area of land used or replace the PV Module(s) with no change in area of land used at Owner s sole option.

Manufacturer of proposed PV modules must have the ISO 9001:2008 or ISO 14001 Certification for their manufacturing unit for their said manufacturing item.

Desired specification of the PV Module shall include but not limited to the following:

Sl No	Item	Description
1.0	Certification	i) IEC 61215 or IS 14286 ii) IEC 61730
1.1	Type Test certificate issuing authority.	NABL/ IEC Accredited Testing Laboratories or MNRE accredited test centers.
2.0	PV Cell	
2.1	Type	Poly crystalline
3.0	PV Module	
3.1	Rating at STC	250Wp (without any negative tolerance)
3.2	Efficiency minimum	15%
3.3	Withstanding voltage	1000V DC
3.4	Glass	
3.4.1	Thickness	3.2mm (minimum)
3.4.2	Type	High transmission, low iron, tempered glass
3.5	PV Module Junction Box	
3.5.1	Protection level	IP 65 or above
3.6	Bypass Diode	
3.6.1	Number	3 numbers (minimum)
3.7	Module Frame	
3.7.1	Type	Anodized aluminum frame

2.0 PV Array

Desired specification of the PV Array shall include but not limited to the following:

Sl No	Item	Description
1.0	Nominal Capacity	Minimum 2.5 kWp
2.0	PV Module interconnection connector	MC-4 / Tyco connector
3.0	PV Module interconnection cable and array cable	PV 1-F standard /NEC standard "USE-2 or RHW-2" type
4.0	PV array String Voltage	Compatible with the MPPT Channel of the inverters

3.0 PV Array Structure

During Structural design following points must be include but not limited to the following:

- (i) The Module Mounting structure must be made of MS as per IS 808 (latest edition)
- (ii) Weight of the Metallic part of PV Array structure excluding nuts and bolt must be minimum or same weight of the total PV Module. However for the special type of roof the weight of the metallic part of the PV array structure may vary.
- (iii) The structure should be capable of withstanding a **wind load of 150 km/hr after installation.**
- (iv) All structures including any metallic part thereof must be protected against any corrosion. The structures must also be compatible with the materials used in the module frame, fasteners, fixtures, nuts, bolts or any similar nature of metallic components whichever are required to complete the job.
- (v) The array structure shall be made of hot dip galvanized MS structure of minimum galvanizing thickness **70 micron**
- (vi) Structures shall be supplied complete with all members to be compatible for allowing easy installation.
- (vii) The module mounting structure shall have to be designed and fabricated with tilt angle not less than the latitude of the installation place.
- (viii) The structure will be designed for easy and simple mechanical and electrical installation. It will support SPV modules at the mentioned orientation and absorb, transfer the mechanical loads to the ground or any suitable/ existing strength structure as deemed fit.
- (ix) All fasteners, fixtures for supporting conduits , nut & bolts shall be made with stainless steel , standard quality stainless steel **except foundation bolts and the nuts to be used for connection of earthing strip with module mounting structure which will be of MS chrome plated**
- (x) Supporting structures including module Mounting structure shall have to be adequately protected against all climatic condition. The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the columns or any suitable structure as deemed fit.
- (xi) The structures shall be designed for simple mechanical and electrical installation. There will be no requirement of welding or complex machinery at the installation site.
- (xii) Detailed engineering, drawings, specification and instructions for civil and other related structural works will be prepared by the Contractor/ architectural firm for erection and installation of the PV Array structure. Before execution of the same, prior approval is to be taken from WBGEDCL.
- (xiii) The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings.

4.0 PV Array Junction Box (AJB)

Array Junction Box (AJB) shall have to be used for termination of string prior connecting array with each inverter.

Minimum one (01) number of PV Array Junction Box will **be provided with each Power Plant.** The desired specification of the PV Array Junction Box and accessories shall include but not limited to the following:

Sl No	Item Description	Desired Data
1.0	Enclosure	
1.1	Degree of Protection	IP65 with UV Protected
1.2	Material	Polycarbonate.
1.3	Withstanding voltage	1000V DC
1.4	Withstanding Temperature	100 °C
1.5	Accessories mounting arrangement	DIN Rail or as suitable
1.6	Front cover	Transparent
1.7	Number of Strings entry	As may be required
1.8	Approved Make	Hensel/ Spelsberg /ABB /Ensto or or equivalent make (<i>as per acceptability of WBGEDCL</i>)
2.0	Cable Entry and Exit	
2.1	Position	Bottom at cable entry and exit
2.2	Cable Entry and Exit connector type	MC 4 / Tyco Connector (PV Array String cable)
2.3	Cable gland	Earthing cable entry
3.0	Surge Protecting Device (SPD)	
3.1	Type	DC
3.2	Approved Make	OBO Betterman / Dehn / Citel /ABB or equivalent make (<i>as per acceptability of WBGEDCL</i>)
3.3	Protection class	Type 2
3.4	Rating (8/20)	1000 V,20 kA
3.5	Number of set	As may be required as per string Design (minimum 1 set against each MPPT Chanel)
4.0	Fuse with fuse holder	
4.1	Position	Positive and negative terminal for each series string
4.2	Type	Glass fuse, for PV Use only
4.3	Rating	Current: Minimum 1.25 times the rated short circuit current of the series string Voltage: Minimum 1000V DC
4.4	Approved make	Cooper Bussman/ Ferazz Shamut or equivalent make (<i>as per acceptability of authority</i>)
5.0	Earthing Provision	Terminal blocks will have to be provided for Earthing
6.0	Terminals, lugs and bus bar	Tinned copper

5.0 2.5 kVA PCU (Dual Charging Mode i.e capable of charging from both PV Panel as well as from AC supply when required)

Desired specification of each inverter shall include but not limited to the following:

Sl. No	Operating Parameter	Desired specification
1	Type	Dual Mode
2	Usage Specially	used for PV system
3	Certifications	<ul style="list-style-type: none"> • Efficiency Measurement IEC 61683/ Equivalent BIS Std. • Environmental testing IEC 60068-2 (1,2,14,30) / Equivalent BIS Std. • NABL/ IEC Accredited Testing Laboratories or MNRE approved test centers. • Interfacing with utility grid IEC 61727 or Equivalent • Islanding Prevention Measurement IEC 62116 or Equivalent <p>Manufacturer ISO 9001:2008</p>
4	DC Input Power	Minimum 2.5 kWp
5	MPPT Input Voltage	Compatible with the array voltage
6	No of MPPT Trackers	2nos (Minimum)
7	Output AC Voltage	230V + / -10%
8	Output AC Power	<ul style="list-style-type: none"> • 2 kW • Related Power Factor 1.0 • Adjustable AC voltage range As per prevailing Grid code <p>Note: In case the voltage across the feeding point is found to be deviated beyond the tolerable range as per grid code, the Inverter must have voltage adjusting feature of wide variation.</p> <ul style="list-style-type: none"> • AC wave form Pure Sine wave • THD As per prevailing Grid code.
9	Efficiency	95% (Min)
10	Sleep mode consumption	Less than 5 W
11	DC Disconnect Switch	Inbuilt in the Power Conditioning Unit
12	Degree of Protection	IP 20
13	DC Side Protection	<ul style="list-style-type: none"> • Reverse-polarity protection • Reverse current to PV array protection, over voltage, Under voltage protection • Over current
14	AC Side Protection	<ul style="list-style-type: none"> • DC inject protection to grid less than 1% • Over voltage and Under voltage • Over current • Over and under grid frequency protection, • 5. Anti Islanding protection

15	Isolation Switch	PV array Isolation switch (DC)
16	Warranty	5 years (min)
117	Inbuilt Energy meter, volt meter, ammeter, etc. and a LCD display for observation.	

6.0 MCCB & MCB

The connection will be as per details given in schematic diagram-A. The degree of protection will be IP 21 indoor cabinet. Approved make ABB / L&T / Siemens/ Schneider /Hager/ Legrande or equivalent (as per acceptability of WBGEDCL)

MCCB/MCB Ratings:

- MCCB -1 : 63 Amps.
- MCB– 2 : 16 Amps.
- MCB– 3 : 16 Amps.
- MCB – X (indicated in schematic diagram) : 6 Amps

7.0 Cables & Wirings :

The Specification of wiring material of PV Power plant shall include but not limited to the following:

Sl No	Item	Description
1	DC Cable	
1.1	Conductor	Tinned annealed stranded flexible copper according to IEC 60228 class 5
1.2	Standard	PV-1F / 2 PfG 1169/08.2007 / VDE Standard E PV 01:2008-02 /Equivalent
1.3	Make	LAPP/Top Solar/Nexans/ Schneider/Polycab or equivalent (<i>as per acceptability of WBGEDCL</i>)
2	AC Cable	
2.1	Type	Armoured or unarmoured as per requirement
2.2.	Conductor	Stranded flexible copper
2.3	Insulation	PVC
2.4	Standard	IS : 1554 -1
2.5	Make	RR Cable/ Polycab/LAPP/ Havell's or equivalent (<i>as per acceptability of WBGEDCL</i>)
3	PVC Conduit tees, bends etc (Hard & flexible)	
3.0	Standard	ASTM D 1785 u PVC
3.1	Ambient Temperature	0.0C to 50.0C
3.2	Type	UV stabilized , temperatures, Shock proof chemical resistant.

3.3	Make	Oriplast /Supreme
4	GI Pipe	
	Make	TATA/ Jindal/Bansal

Cable Details (approx):

- DC wiring (From module to PCU including battery interconnection) –
6 Sq.mm (approx 50 ckt meter)
- AC main line (From PCU to external street light MCCB) –
4 Sq.mm (approx 80 ckt meter)
- Module interconnection –
2.5 Sq.mm (approx 20 ckt meter)
- Light points connection (From mainline to 47 nos CFL fixture) –
0.5 Sq.mm (approx 340 ckt meter)

Guideline of Cabling

- i) Buried AC underground cables must be armored.
- ii) The Buried DC Cable must be run through GI conduit
- iii) Conductor size of cables and wires shall be selected based on efficient design criteria. The wiring size of shall be designed such that maximum voltage drop at full power From the PV Array to Inverter(s) should be less than 2%. From Inverter to AC Grid interfacing panel/MCCB should be less than 3%.
- iv) Cable terminations shall be made with suitable cable lugs & sockets etc, crimped properly and cables shall be provided with dry type compression glands wherever they enter junction boxes/ panels/ enclosures at the entry & exit point of the cubicles. The panels bottoms should be properly sealed to prevent entry of snakes/lizard etc. inside the panel. All cables shall be adequately supported. Outside of the terminals / panels / enclosures, shall be protected by conduits. Cables and wire connections shall be soldered, crimp-on type or thimble or bottle type.
- v) Only terminal cable joints shall be accepted. Cable joint to join two cable ends shall not be accepted.
- vi) The cable must be laid through PVC conduit or GI pipe on roof and outdoor. In case of using metallic pipe as conduit proper grounding of the conduit must be done. Whereas for indoor wiring Casing-N-Capping should be used.
- vii) All cable/wires/control cable shall be marked with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.
- viii) All cable shall be suitable marked or coded for easy identification. Cables and wires shall confirm to the relevant standards suppliers to specify the specification.
- x) All fasteners shall be made of Stainless steel or Aluminum.

Wiring Accessories :

Accessories include all the items required for wiring such as Conduit, Casing -N -Capping, Cables, etc (excluding Light Bulbs & Holders).

8.0 Battery Bank:

The Specification of wiring material of PV Power plant shall include but not limited to the following:

6.1	Specification	Tubular Type Flooded Lead Acid Batteries. Each battery cell will be 2V-300AH, 24 Nos of batteries needs to be provided. Batteries should be provided in suitable racks along with a rubber mat.
6.2	Battery Certifications	IS:1651:1991

9.0 System, equipment and array structure earthing:

- i. Equipment grounding (Earthing) shall connect all non-current carrying metal receptacles, electrical boxes, appliance frames, Inverter, chassis and PV panel mounting structures in double long run. The wire should not be switched, fused or interrupted.
- ii. Array Structure must be earthed with GI Strip.
- iii. The complete earthing system shall be electrically connected (double run) to provide return to earth from all equipment independent of mechanical connection.
- iv. Each earth systems must be inter connected through GI Strip to arrive equi potential bonding. The size of the GI earth strip must be minimum **25 mm x3 mm**. The existing building earthing shall have to be connected to this GI strip.

10.0 Spares ,Tools and Measuring Instruments:

The minimum number and different type of spares, tools and measuring instruments must be supplied under this project within the contract value. Also any special tools, spares, measuring instruments if required as may be shall be provided by the contractor.

11.0 Signage:

Project information Signage : The Signage shall be made up of MS Sheet of minimum 2 mm thick. The Signage provide with detail of the project as approved by WBGEDCL. The font size on the signage has to be big enough so that everyone can read it easily. The Signage shall be installed 1 nos of minimum size 2'x 2' on a prominent place of the project area and 7" X 5" 19 nos on each MCB & Outdoor Lights.

Safety Signage: Safety Signage must be provided mentioning the level and type of voltage and symbols as per IE Rule at different position as may be required.

12.0 Operation & Maintenance:

The Bidders to provide 5 Years Onsite Operation and Maintenance Support. Scope will include topping up of battery and routine maintenance. A routine checkup report after every three month should have to be provided duly signed by the power plant in-charge at site. If any fault occurs or for any maintenance

work, the service engineer with spares if required should attend and repair the system within 24 hours of intimation.

Signature of Authorized Person :

Name :

Designation :

Company Seal :

Schedule of work

The scope of the work includes design, manufacture, supply, installation, maintenance and commissioning of 2.5 kWp Solar PV Power Plant with battery back-up at Kolkata Circuit House, Bedi Bhawan, Kolkata - 29 with connected load of 37 Nos indoor and 10 nos outdoor lights as given in the tender inclusive of all taxes and duties, insurance and incidental charges if any with five years Comprehensive Maintenance and Warranty Contract with the following items (for technical specification of individual items, please see the relevant specification elsewhere in this document) .

Sl. No.	Items	Quantity
01	PV Module	2.5 kW (minimum)
02	Module Mounting Structure and frames for 2.5 kWp (minimum) PV modules.	1 set
03	Civil works for Foundation of PV Array	1 Set
04	PV Array Combiner box with accessories including 1 Nos MCCB 63 Amps (2-pole)	1set
05	PCU 2.5 kVA (Minimum).	1 Nos
06	Battery Bank of capacity 24 nos, 2V, 300 Ah with suitable wooden rack and rubber mat.	1 Set
7.1	MCB 16 Amps	2 Nos
7.2	MCB 6 Amps	9 Nos
08	Suitable indoor type wall mounted fixture comprises with 11 watt CFL	37 Set
09	Suitable outdoor type wall mounted fixture comprises with 18 watt CFL	10 Set
10.	Cable & Wires	
	a) 2.5 sq.mm 1-core cable	As required
	b) 4 sq.mm 1-core cable	As required
	c) 6 sq.mm 1-core cable	As required
11.	Tool Kits to facilitate regular Maintenance at site.	1 set
12.	Signage & Safety Signage	20 Nos
13.	Onsite Operation and Maintenance Support	5 Years
14.	Internal & External Wiring :	
	(a).Casing N Capping wiring accessories for indoor lights	As required
	(b) PVC Conduit wiring accessories for outdoor lights	As required
	(c) Cables for wiring: i. 0.5 sq.mm 1-core cable ii.4.0 sq.mm 1-core cable	As per actual

Signature of Authorized Person :

Name :

Designation :

Company Seal :

PRICE BID**NIT No. : WBGEDCL/T-1/2014-15****Date: 21.07.2014**

Nature of Work: Supply, installation, testing and commissioning of 2.5 kWp Rooftop Solar PV Power Plant with battery back up at Kolkata Circuit House, Bedi Bhavan, Kolkata .

Bidder's Name**& Address :****Offer No. : Date****A. Solar PV Power Plant of 2.5 kW**

Sl. No.	Description of work	No.or Qty.	Unit	Quoted Price (Rs.) (To be entered by the Bidder)
1	Design, supply, installation, testing and commissioning of a 2.5 kWp Rooftop Solar PV Power Plant with battery backup with Comprehensive Maintenance for 5 Years at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029	1	Unit	
	VAT @			
	Service Tax @			
Total Quoted Price				
Total in words: Rupees				

B. Wiring /cabling rate (On RMT basis) including standard fixture etc.

Sl. No.	Description of work	Rate (Rs./RMT) (To be entered by the Bidder)
1.	a) Using 0.5 Sq.mm cable	
	b) Using 4 Sq.mm cable	

Signature of Authorized Person :**Name :****Designation :****Company Seal :**

(To be submitted by bidders on official letter head of the company)

No.

Date

To

The Managing Director

West Bengal Green Energy Development Corporation Ltd.

Bikalpa Shakti Bhavan, EP & GP Block, Sector -V

Salt Lake Electronic Complex,

Kolkata – 700 091

Sub: Offer in response to Notice Inviting Tender No. WBGEDCL/T-1/2014-15 dated 21.07.2014 for design, manufacture, supply, erection, testing and commissioning of a 2.5 kWp Rooftop Solar PV Power Plant with battery backup including 5 years maintenance at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029.

Sir,

We, the undersigned bidder having read and examined in detail the minimum eligibility criteria, instruction to bidders and techno-commercial terms & conditions of the tender documents, do hereby submit our offer to execute the contract on turnkey basis as per terms & conditions as set forth in your bid document.

1. We confirm having submitted the eligible criteria as required by you in your tender documents along with this proposal. In case you require any further information or clarification in this regard, we agree to furnish the same in time.
2. If you accept this offer, we agree to provide all types of services and complete the entire work in accordance with project completion time given in the tender document. We fully understand that the work completion time stipulated in tender document is the essence of the contract, if awarded.
3. We have enclosed Earnest Money amounting to Rs. 9,000/- (Rupees nine thousand only) vide D.D.No. Dated drawn on, Branch.
4. We understand that you are not bound to accept the lowest or any bid you may receive against the Notice Inviting Tender No. WBGEDCL/T-1/2014-15 dated 21.07.2014..
5. We also declare that we have never been deferred from executing the work. In case we do not accept the award of contract or Letter of Intent, our Earnest Money will be forfeited.
6. We also declare that, we have never been blacklisted and / or there were no debarring actions against us as on date due to any reason what-so-ever, by any Government or Government Agencies. In the event of any such information pertaining to the aforesaid matter found at any point of time either during the course of the contract or at the bidding stage, our bid/contract will be liable for cancellation / termination without any notice at the sole discretion of WBGEDCL.

(Authorized signatory)

Name:

Designation:

Company's Seal.

(To be submitted by bidders on official letter head of the company)

No.

Date

To

The Managing Director
West Bengal Green Energy Development Corporation Ltd.
Bikalpa Shakti Bhavan, EP & GP Block, Sector -V
Salt Lake Electronic Complex,
Kolkata – 700 091

Sub: Offer in response to Notice Inviting Tender No. WBGEDCL/T-1/2014-15 dated 21.07.2014 for design, manufacture, supply, erection, testing and commissioning of a 2.5 kWp Rooftop Solar PV Power Plant with battery backup including 5 years maintenance at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029.

Sir,

We, the undersigned bidder having read and examined in detail the technical compliance clause of the tender documents, do hereby submit our offer to execute the contract as per terms & conditions as said forth in your tender document.

- 1 We declare that we are submitting this offer on the basis of a divisible design cum manufacture cum erection cum testing cum commissioning cum maintenance contract on a single source responsibility basis.
- 2 We declare that the contract will be executed strictly in accordance with technical compliance clause. This is to expressly certify that our offer contains **no deviation** either in direct or indirect form.

(Authorized signatory)

Name:

Designation:

Company's Seal.

(To be submitted by bidders on official letter head of the company)

No.

Date

To

The Managing Director
West Bengal Green Energy Development Corporation Ltd.
Bikalpa Shakti Bhavan, EP & GP Block, Sector -V
Salt Lake Electronic Complex,
Kolkata – 700 091

Sub: Offer in response to Notice Inviting Tender No. WBGEDCL/T-1/2014-15 dated 21.07.2014 for design, manufacture, supply, erection, testing and commissioning of 2.5 kWp Rooftop Solar PV Power Plant with battery backup including 5 years maintenance at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029.

Sir,

We, the undersigned bidder having read and examined in detail the price offer schedule of the tender documents, do hereby submitting our offer to execute the contract as per terms & conditions as said forth in your bid document.

- 1 We offer to design, manufacture, supply, erection, testing and commissioning of 2.5 kWp Rooftop Solar PV Power Plant with battery backup including 5 years maintenance at Kolkata Circuit House, Bedi Bhavan, Kolkata – 700 029 at a total cost of Rs.....(in figure), Rupees..... (in words).
- 2 All prices of this offer are valid for a period of 120 days from the date of opening bid.
- 3 The item rate quoted for the project work is FIRM during entire period of contract irrespective of date of completion and not subject to any price adjustment as in line with the tender document.
- 4 We understand that all the payment shall be made on the basis of actual measurement for the quantified item as per schedule of work.
- 5 We confirm that we shall submit the Bill/Invoice in triplicate for the work executed showing separately CST/VAT, service tax, custom duty, excise duty and any other statutory levies in the Bill/Invoice.

(Authorized signatory)

Name:

Designation:

Company's Seal.