Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: mnreda.dir@gmail.com Website: www.mnreda.gov.in

NOTICE INVITING TENDER

for

Off Grid Solar Power Plants

At different locations in the State of

Meghalaya

For the Financial Year 2015-16

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: mnreda.dir@gmail.com Website: www.mnreda.gov.in

> *Issued By:* For Member Secretary cum Director Meghalaya Non-Conventional & Rural Energy Development Agency.

> > Page 2 of 40

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: <u>mnreda.dir@gmail.com</u> Website: <u>www.mnreda.gov.in</u>

PART – A

Commercial & Technical Bid

Page 3 of 40

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: <u>mnreda.dir@gmail.com</u> Website: <u>www.mnreda.gov.in</u>

CONTENTS

1.	Notice Inviting Tender	5
2.	Notice Inviting Tender Schedule	6
2.	Instructions to Bidders	9
3.	General Terms & Conditions	14
4.	Scope of Work and Technical Specification	18
5.	Bidding Scheduled	34
6.	Agreement	35
7.	Contract Performance Guarantee	39-40

Page 4 of 40

MEGHALAYA NON-CONVENTIONAL AND RURAL ENERGY DEVELOPMENT AGENCY Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: <u>mnreda.dir@gmail.com</u> Website: <u>www.mnreda.gov.in</u>

NOTICE INVITING TENDER

NIT No. MNREDA/1641/2015/5

Dated Shillong, the 5th October, 2015.

Sealed tenders are invited from eligible registered Indian Manufacturers ("manufacturers)" mean manufacturers of SPV modules or battery or PCU) and MNRE Channel Partners for the design, supply, installation, testing and commissioning of off-grid solar power plants of different capacities, as per MNRE specifications, with two years warranty and three years mandatory comprehensive maintenance contract (CMC) at various locations in the State of Meghalaya.

Bidders are eligible to participate in any one or more of the categories or all categories separately. All the categories will be treated as separate tenders and assessment of bids will be done category-wise.

Tender documents will be issued during working days from 5.10.2015 to 21.10.2015 in the office of the undersigned on payment of Rs. 5,000.00 (Rupees five thousand) only or can be downloaded from the website of MNREDA. Separate Tender cost for each category shall be paid as per tender schedule by way of cash or bank draft only. Bank Draft should be drawn in favor of Member Secretary cum Director, MNREDA, Shillong. Tender documents shall be received in the office of the undersigned up to 27.10.2015 at 1.00 PM and shall be opened in the same place and date at 3.30 PM.

The undersigned reserves the right to cancel the tender and/or reject any or all the bids without assigning any reason thereof.

Member Secretary cum Director Meghalaya Non-Conventional & Rural Energy Development Agency Shillong.

Page 5 of 40

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: mnreda.dir@gmail.com Website: www.mnreda.gov.in

NOTICE INVITING TENDER SCHEDULE

NIT No. MNREDA/1641/2015/5

Dated Shillong, the 5th October, 2015.

<u>Category – I</u>

Name of Work: (3 Kwp for each Police Station)

Design, Supply, Installation, Testing and Commissioning with Two Years Warranty and Three years Mandatory Comprehensive Maintenance Contract (CMC) of Off Grid Solar Power Plant at the following Police Stations in the State of Meghalaya.

Solar Power Plant Capacity	Estimated Amount (Rs. in lakhs)	Bid Security (Rs. in lakhs)	Last Date & Time of Submission	Date & Time of Opening
 3kWp at each of the following locations: 1. Ranikor Police Station, South West Khasi Hills. 2. Dawki Police Station, West Jaintia Hills. 3. Saipung Police Station, East Jaintia Hills. 4. Songsak Police Station, South Garo Hills. 5. Chokpot Police Station, South Garo Hills. 6. Rongara Police Station, South Garo Hills. 7. Shella Police Station, East Khasi Hills. 8. Dadenggre Police Station, West Garo Hills. 	50.40	1.01	27.10.2015 at 12 noon	27.10.2015 at 3.30 P.M.

Page 6 of 40

<u>Category – II</u>

Name of Work: (30 Kwp)

Design, Supply, Installation, Testing and Commissioning with Two Years Warranty and Three years Mandatory Comprehensive Maintenance Contract (CMC) of Off Grid Solar Power Plant at Meghalaya Non-Conventional & Rural Energy Development Agency (MNREDA), Shillong, Meghalaya.

Solar Power Plant	Estimated Amount	Bid Security	Last Date & Time	Date & Time of
Capacity	(Rs. in lakhs)	(Rs. in lakhs)	of Submission	Opening
30 kWp	53.66	1.07	27.10.2015 at 12 noon	27.10.2015 at 3.30 P.M.

Category - III

Name of Work: (25 Kwp each)

Design, Supply, Installation, Testing and Commissioning with Two Years Warranty and Three years Mandatory Comprehensive Maintenance Contract (CMC) of Off Grid Solar Power Plant (i) at Shillong College Campus, Shillong,East Khasi District, (ii) District Jail Tura, West Garo Hills District and (iii) District Jail, Williamnagar, East Garo Hills District in Meghalaya.

Solar Power Plant	Estimated Amount	Bid Security	Last Date & Time	Date & Time of
Capacity	(Rs. in lakhs)	(Rs.in lakhs)	of Submission	Opening
25 kWpx3 Nos.	134 lakh	2.68 lakh	27.10.2015 At 12 noon	27.10.2015 At 4.00 P.M.

Category - IV

Name of Work:

Design, Supply, Installation, Testing and Commissioning with Two Years Warranty and Three years Mandatory Comprehensive Maintenance Contract (CMC) of Off Grid Solar Power Plant including LED based Street Light at Village Garobadha, West Garo Hills, Meghalaya.

Solar Power Plant	Estimated Amount	Bid Security	Date & Time of	Date & Time of
Capacity	(Rs. in lakhs)	(In Rs.)	Submission	Opening
16 kWp	43.72	97,440.00	27.10.2015 At 12 noon	27.10.2015 At 4.30 P.M.

Page 7 of 40

<u>Category – V</u>

Name of Work: (50 Kwp each)

Design, Supply, Installation, Testing and Commissioning with Two Years Warranty and Three years Mandatory Comprehensive Maintenance Contract (CMC) of Off Grid Solar Power Plant at (i) District Jail, Shillong, East Khasi Hills, Meghalaya and (ii) District Jail, Jowai, West Jaintia Hills District.

Solar Power Plant	Estimated Amount	Bid Security	Last Date & Time	Date & Time of
Capacity	(Rs. in lakhs)	(Rs.in lakhs)	of Submission	Opening
50 kWpx2 Nos.	179 lakh	3.58	27.10.2015 At 12 noon	27.10.2015 At 5.00 P.M.

Bidders are eligible to participate in any one or more of the categories or all eight categories separately as per the schedule mentioned above. Tender Document cost and Bid Security have to be furnished for each category separately. All categories will be treated as separate tender.

Member Secretary cum Director Meghalaya Non-Conventional & Rural Energy Development Agency

Dated Shillong, the 5th October ,2015.

1. The Principal Secretary, to the Govt.of Meghalaya, Power Department.

Copy to :-

Memo. No. MNREDA/1641/2015/5(A)

- 2. The State Informatic Officer, National Informatics Centre Meghalaya, Shillong.
- 3. M/s. Eastern Chronicle Shillong.
- 4. Notice Board. MNREDA, Shillong.

With a request to display the NIT & Tender Document on the website. Both hard & soft copy of Tender Document enclosed herewith.

With a request to publish in one issue of your newspaper and to be submitted the bill in duplicate along with sample of Advertisement for necessary payment.

> Member Secretary cum Director Meghalaya Non-Conventional & Rural Energy Development Agency, Shillong.

> > Page 8 of 40

INSTRUCTIONS TO BIDDERS

Minimum Qualifying Criteria for Bidding:

- 1.1 The bidder must have the following minimum criteria to qualify for bidding:
- (i) The bidder should be a registered Indian company / Firm / Joint Venture / MNRE Channel Partner/ Individual registered as manufacturer of Solar Module or Battery or PCU.
- (ii) The bidders should have their products approved by MNRE/ IEC.
- (iii) The bidder should have an average annual turnover of **Rs. Three Crores** in the last three years. Certified audited balance sheets for the last three years should be submitted.
- (iv) The bidder should have cumulative experience of having executed projects similar to the bid capacity in the category. Certified work orders and satisfactory performance reports from project owners should be submitted.
- (v) The bidder must have adequate service network for maintenance of the system in North Eastern Region. Details to be furnished.
- (vi) The bidder must have valid VAT registration certificate.
- (vii) The Joint Venture lead Partner should meet a minimum of 50% of the financial criteria like average Turnover and Technical experience and will be solely responsible for Bid Security, Performance Guarantee and the work as indicated in the NIT.

Non-submission of above documents shall result in rejection of bid.

2. Tender Document

In addition to this Tender document, any other documents/ instructions/ amendments/ revisions issued by MNREDA to the bidder till the date of opening of the bid shall also be deemed to be an integral part of the bid document. Failure to furnish all the information as per the bid document in every respect shall result in rejection of the bid.

3. Cost of Tender Document

- 3.1 Tender document can be purchased from MNREDA office on payment of Tender cost of Rs. 5,000/- (Rupees Five thousand) only either by cash or Bank Draft drawn in favour of Director, MNREDA, Shillong for each category.
- 3.2 Bidders may also download the bid document from MNREDA website and submit the cost of the bid document as indicated at 3.1 above in the form of Demand Draft along with Commercial & Technical Bid (Part A).

Page 9 of 40

Non-submission of cost of Tender document shall result in summary rejection of bid.

4. Bid Security

- 4.1 Bid Security as indicated in the NIT Schedule in the form of Bank Guarantee/Call Deposit/FDR from any scheduled or nationalized bank of India pledged in favour of Member Secretary cum Director, MNREDA, Shillong should be furnished without which tenders will be summarily rejected.
- 4.2 The bidders who claim exemption shall have to produce relevant papers from the proper authority i.e. NSIC registration certificate, etc.
- 4.3 Bid security shall be returned to the bidders after issue of final work orders.

5. Submission of Bid

The bid should be submitted latest by the date and time indicated in the NIT Schedule. The bid should be submitted in 2 (two) parts i.e. Commercial & Technical Bid and Financial Bid.

- 5.1 Commercial & Technical Bid: consisting of the following documents:
 - i. Tender Paper (Part "A") duly signed and sealed by the Authorized person/s of the firm.
 - ii. Cost of Tender document, if downloaded or certified copy of money receipt for the tender document issued by MNREDA.
 - iii. Data Sheet duly filled up and completed as per tender document.
 - iv. Documents required under Minimum Qualifying Criteria for Bidding.
 - v. Any deviation with justification thereof.
 - vi. Any other documents as mentioned in this tender document.
- 5.2 Financial Bid: consisting of the following documents:
 - i. Tender Paper (Part "B") duly signed and sealed by the Authorized person/s of the firm.
 - ii. Price Bid can be quoted on plain paper but it should be in the format given.
 - iii. Contract Performance Guarantee @ 10% of the bid amount quoted in the form of Bank Guarantee/Call Deposit/FDR. The Contract Performance Guarantee should be valid for a period of <u>one year initially</u> and may be extended if required.
- 5.3 Commercial & Technical Bid should be sealed in a separate envelope, hereinafter referred to as **First Envelope**, marked as "Commercial & Technical Bid for Category No._____".
- 5.4 Commercial & Technical Bid should not contain price of any items otherwise the bid shall be disqualified.
- 5.5 Financial Bid should be sealed in a separate envelope, hereinafter referred to as **Second Envelope**, marked as "Financial Bid for Category No.____".
- 5.6 Financial Bid should not contain any technical matter or other matter except price bid and Contract Performance Guarantee. The date of opening of the price bid will be notified to qualified bidders after Commercial & Technical bid evaluation.

Page 10 of 40

5.7 First Envelope and Second Envelope should be sealed in a third envelope marked as "SPV Power Plant for Category No._____", NIT No., Date of opening of tender, Name & Address of the bidding firm and should be addressed to Director, Meghalaya Non-Conventional And Rural Energy Development Agency, Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012.

Page 11 of 40

6. Opening and Evaluation of Tender

- 6.1 On the date and time indicated in the NIT Schedule, only the outer envelope and First Envelope shall be opened. If the cost of the tender document and bid security are found to be in order, then the Technical & Commercial bid document shall be accepted and kept for evaluation. Otherwise, the tender document shall stand rejected and shall be returned to the bidder.
- 6.2 The bid document which is accepted shall be evaluated first as per the qualifying criteria and if found to be qualified, the technical and commercial bid shall be evaluated.
- 6.3 If the bid document is not qualified as per the qualifying criteria, it shall be treated as nonresponsive and the Technical & Commercial bid shall not be evaluated and shall be returned to the bidder.
- 6.4 Only the bidders whose Technical & Commercial bids are responsive shall be eligible for opening of the financial bids.

7. Opening of Financial Bid

Date of opening of Financial Bid shall be intimated individually to those bidders who have qualified in the Technical & Commercial offer.

- 7.1 Financial bids without the Contract Performance Guarantees shall be considered non-responsive and shall be rejected.
- 7.2 The price quoted should be firm and valid for 12(twelve) months from the date of opening of the price bids. The price should be quoted as per the format provided in the tender document. Price break up of various components must be clearly indicated in the format and failure to comply with the above shall result in rejection of the Bid.
- 7.3 The rate should be written in English, both in figures and in words. In case of any differences between the prices mentioned in figures and words, the prices mentioned in words shall be considered final. Also, in case of any arithmetical error in regard to the total amount and individual rates, the individual rates shall be taken as final and the total amount shall be calculated accordingly.

8. Award of Contract

The Contract shall be awarded to the lowest (L1) bidder and the bidder shall confirm acceptance of the award within 7 (seven) days from the date of issue of the work order failing which the work shall be offered to the next lowest bidder at the L1 rate.

9. Additional Information

Any other information which are required to be furnished as per detailed tender papers but which have not been specifically indicated.

10. Deviation

Any deviations to the terms and conditions stipulated in detailed tender papers including payment terms etc. must be clearly specified if there is any deviation with justification.

11. Attestation

All supporting papers (photocopies) which are not in original should be duly attested by a gazetted officer/notary.

12. Other Terms & Conditions

12.1 Insertion, post-script, addition and alteration shall be confirmed by bidder's signature and stamp.

Page 12 of 40

- 12.2 Incomplete tender or tenders not submitted as per requirement as indicated in the NIT shall be rejected.
- 12.3 Bidders shall submit their offer strictly as per terms and conditions of the tender document.
- 12.4 Failure to furnish all information and documentary evidence as stipulated in the bid document or submission of an offer that is not substantially responsive to the bid document in all respects shall be summarily rejected.
- 12.5 All bids shall be received in duly sealed cover only within the due date and time. No bids shall be received after the due date and time.
- 12.6 MNREDA reserves the right to reject part or whole of the bid/order without assigning any reason thereof, postpone the date of receipt and opening of the bids or cancel the bid without bearing any liability, whatsoever, consequent upon such decision.
- 12.7 Issuance of bid documents shall not be construed that the bidders would be automatically considered qualified.

Page 13 of 40

GENERAL TERMS & CONDITIONS

1. Signing of Tender Paper

The Tender Document as issued by MNREDA should be signed at every page by the Authorized person of the firm and it will be viewed as acceptance of each and every conditions containing therein.

2. Time of Completion

The work should be completed within **120** (one hundred twenty) days from the date of issue of final work order. However, the supply of all the major materials for the work like SPV modules, battery, inverter, structures, cables, etc should be completed within **60 days** from the date of issue of final work order, failing which the work order shall stand cancelled and the Contract Performance Guarantee shall be forfeited. Recovery of the mobilization advance shall also be effected.

3. Agreement

An Agreement has to be signed within 15(Fifteen) days of issue of final work order. The Agreement shall be prepared by the successful bidder in the prescribed format (**Appendix 1**) on a non-judicial stamp paper of Rs. 100.00 (Rupees one hundred) only and signed by the authorized persons of the Firm and MNREDA. The annual maintenance contract agreement shall be signed separately on completion of installation and commissioning of the system.

4. Warranty

The System supplied should be under warranty for a period of **2 years** and the SPV Module for a period **of 10 years** from the date of commissioning of the System.

5. Payment Terms and Conditions

The Bidders shall be entitled to the following payment terms:

- (a) Mobilization Advance: The contractor shall be paid 30% (thirty percent) of the contract value as mobilization advance on application and against a Bank Guarantee of like amount from any Nationalized Bank or Scheduled Bank valid for a period of 180 (One Hundred Eighty) days from the date of acceptance of work.
- (b) 40% (forty percent) of the contract value shall be paid against receipt of materials at site and in good conditions, subject to availability of funds.
- (c) 20% (twenty percent) of the contract value shall be paid on completion and commissioning of the System, subject to availability of funds.
- (d) Balance 10% (ten percent) shall be released at the expiry of warranty period and after submission of performance report duly certified by the concerned project officer.

6. Contract Performance Guarantee

- 6.1 The bidder shall submit the Contract Performance Guarantee (CPG) @ 10% of the bid amount along with the financial bid. Financial bids without the CPG shall be considered non-responsive and the bid shall be rejected.
- 6.2 In the event of contractor not being able to supply or to carry out the work or a part of the work assigned to him in accordance with the terms of this contract, the Contract Performance Guarantee shall be forfeited. Further, MNREDA shall have the right to recover any sums advanced to the contractor as mobilization advance.

Page 14 of 40

7. Subletting of Contract

The Contractor shall not, without the prior consent in writing of the MNREDA, assign or sublet or transfer his contract, or a substantial part thereof other than raw materials or any part of the work of which makers are named in the contract, provided that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

Page 15 of 40

8. Contractor to Inform Himself Fully

- (a) The Contractor shall be deemed to have carefully examined the general conditions, specifications and Schedules and also to have satisfied himself as to the nature and character of the plant and equipment to be supplied and installed under the contract, the site conditions and all relevant matters.
- (b) If he shall have any doubt as to the meaning of any portion of the contract/work order, he shall before signing/accepting it, set forth the particulars thereof and submit them to the MNREDA in writing in order to remove such doubts.

9. Service Center

It is mandatory that the bidder should have a local service centre in the North Eastern Region and preference will be given to those Firms who have the service centre in the State of Meghalaya.

10. Breach/ Cancellation of the Contract

In case of non-performance in any form or change of the covenants and conditions in this contract by contractor, MNREDA shall have the power to **annul**, rescind, cancel or terminate the contract and upon its notifying in writing to the contractor that it has so done, this contract shall be absolutely determined. The decision of MNREDA in this regard shall be final and binding.

11. Responsibility of the Contractor

The contractor shall guarantee and be entirely responsible for the execution of the contract in accordance with the specifications, schedules and appendices. He shall further guarantee and be responsible for the quality and workmanship of all materials and completed works, correct designs, drawings, correct delivery of materials, erection, testing and commissioning, within the warranty. On completion of commissioning, a separate agreement shall have to be signed in respect of a comprehensive annual maintenance contract for a period of three years after the warranty period.

12. Safety Measures

The Contractor shall have to undertake necessary measures for providing adequate safety and precautions to avoid any accident which may cause damage to any equipment/material or injury to workmen. MNREDA shall not responsible for any such accidents.

13. Delivery of System

- (a) The contractor shall deliver the plant/systems in accordance with the terms of the contract at the time/times at the place/places and in the manner specified in the contract. The contractor shall comply with instructions that may be given by the MNREDA from time to time regarding the transit of the plant and material.
- (b) Notification of dispatch or delivery in regard to each and every consignment shall be made to the MNREDA immediately after dispatch or delivery. The contractor shall submit to the MNREDA consignee invoice in duplicate and packing account of all stores dispatched or delivered by him.
- (c) In case of any occurrence of loss or damage in transit up to destination, it shall be the liability of the contractor to initiate and pursue the claim with the Insurance Company. He should take immediate steps to repair the damaged equipment or arrange a replacement thereto. Any extension of time limit required in such contingency will be considered by the MNREDA on merit.

Page 16 of 40

14. Inspection of Material

The material shall be dispatched by the supplier after inspection by the Director cum Member Secretary, MNREDA or his representative. The supplier shall give 15 day's written notice of any material ready for inspection. The material shall be erected in the project only after acceptance of the same. The installation of the work shall be carried out under the close supervision of the Project Officer, MNREDA. The final inspection after installation and commissioning shall be carried out by Project Officer, MNREDA. MNREDA can also get the systems tested by any approved test centre/ laboratory. Rejected material (if any) will be replaced by the supplier at its cost within a stipulated time.

15. Court of Competent Jurisdiction

The Courts of Shillong only have jurisdiction in this case.

Page 17 of 40

SCOPE OF WORK & TECHNICAL SPECIFICATIONS

1. Scope of Work

The Scope of Work shall include the following:

- a) Design, manufacture, supply, installation & commissioning of Solar PV Power Plant
- b) Detailed planning of smooth execution of the project
- c) Performance testing of the complete system
- d) Warranty of the system for 2 years faultless operation.
- e) After sales service

This would inter-alia include

- a) A clear understanding of the features of the proposed project site. This may require a prior visit to the proposed site.b) Supply of the complete systems, including all necessary components, sub components, spares, and tools etc. as per
- technical specifications given elsewhere in this document.
- c) Erection and commissioning of the supplied systems on the specified site.
- d) Providing pedestals if required for mounting of the PCU'S and control panels.
- e) All structural drawings to be approved by the Project Officer Incharge, MNREDA.
- f) Any other work urgently required as per site conditions.
- g) The bidder must also provide a detailed operation and maintenance manual specific to the installed systems.
- h) Fabrications, supply and the installation of suitable support for the PV panels and other components whichever is required with the accessories.
- i) Civil work for SPV structure.
- j) SPV Power plant shall be installed as per the specifications provided in the technical offer.
- k) Provide sealed & tested energy meters at consumption side & generation side of SPV Power Plant.
- I) Provide electrochemical marking (embossing) on each solar module which will show name of manufacturer, year of manufacturing and capacity of solar module.
- m) Supply of manual for Operation and Maintenance of all the system in English or local language.
- n) Supply and installation of control equipments required for the system.
- o) Training of the user for operation and maintenance of the system.
- p) Any additional works not covered above, but necessary for the functioning of the system and required as per specification incorporated.
- q) Regarding cabling work (external & internal) the tenderer is required to visit the site and as per actual site conditions quote (including drawing & design) accordingly.
- r) Regarding actual work to be carried out at the site, tenderer needs to execute the work in consultation with the office of MNREDA.
- s) The tenderer shall provide <u>Comprehensive Maintenance Contract (CMC)</u> of 3 years after the end of the warranty period.
- t) The tenderer shall provide the necessary training to the identified representative approved by MNREDA during the course of 5 years of warranty and CMC periods for proper daily operation and maintenance of installed system.
- u) All cabling and load connections should be carried by the tenderer with proper synergy with the existing electrical systems of proposed project site.

Page 18 of 40

2. General Technical Description & Configuration

a. Solar PV Module

Crystalline high power solar cells shall be used in the Solar Photovoltaic module. Each Solar module shall consist of redundantly interconnected solar cells and shall have the Peak Power rating of not less than 250Wp. To connect the solar module interconnection cable shall be provided. Module shall be made of high transmitivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for module protection and mechanical support. All materials used shall have a proven history of reliable and stable operation in external applications. Solar module shall be crystalline type, employing lamination technology using established polymer (EVA) and tedlar laminate.

Solar module shall be in accordance with the requirements of IEC 61215. In addition, the modules must conform to IEC 61730 Part 1- requirements for construction & Part 2 - requirements for testing, for safety qualification or Equivalent IS.

b. Power Conditioning Unit

Power Conditioning Unit (PCU) provides an un-interrupted AC power using battery power. DCDB output will be fed to PCU which mainly consists of MPPT Charge Controller, Inverter, Voltage Stabilizer and distribution panel along with necessary Displays, Indicators and Alarms. The power conditioning unit shall convert DC Power by SPV modules and store in battery bank. Power Conditioning Unit (PCU) should preferably conform to IEC standards or equivalent BIS standards.

The PCU in addition to battery charging during sunny hours also feed the loads from SPV Power Plant. The Solar Photovoltaic Power Plant shall cater to the electricity demand as per the proposed hours or duration per day. The system shall have the provision of charging battery bank through mains as well. It should be designed such that during sunny hours the loads are fed from SPV Power Plant in addition to battery charging. If the power produced from the Power Plant is not sufficient to feed the loads then the balance power shall be fed by Battery bank. In case Battery bank is not sufficiently charged, then the balance energy can be drawn from the Utility Grid. The Power Plant shall provide a reliable and independent power supply at a voltage and frequency levels to suit the grid voltage and frequency.

The power conditioning unit should be an integrated unit comprising MPPT solar charger and bidirectional inverter.

a. Battery Bank

- The batteries should be AGM- VRLA/Tubular Gel .
- The batteries shall use 2V cells and capacity to be designed for C10 rate.
- Suitable carrying handle may be provided.
- A suitable battery rack with interconnections & end connectors shall be provided to suitably house the batteries in the bank.
- The batteries shall be suitable for recharging by means of solar modules via incremental / open circuit regulators.
- Battery interconnecting links shall be provided for interconnecting the battery in series and in parallel as needed.
- Connectors for inter cell connection (series / parallel) shall be maintenance free. Insulated terminal covers shall be provided.

Page 19 of 40

b. Module Mounting Structure

The Module Mounting structure is to be manufactured with Mild-steel angles, Sheets, Mesh & channels preferably spray/Hot dip Galvanized. These structures are to be designed for suitable mounting on RCC structure on Rooftop / Ground. These structures are to be designed to withstand wind up to 150 Km/hr from backside of the panels, as per specific requirement at Site. The structures should be designed for either fixed tilt or with provision for seasonal adjustment to maximize the power generation. The structures should be compatible for on roof and on ground installation as well.

c. ACDB and DCDB

AC Distribution Board/ Isolator Box:

- An ACDB shall be provided in between PCU and Loads.
- It shall have MCB of suitable rating for connection and disconnection of PCU from load.
- It shall have MCB to supply power to loads such as computer, lighting loads and power plug sockets.
- It shall have energy meter to record energy supplied to loads.

DC Distribution Board:

This shall consist of MCCBs of suitable specifications & which can withstand the required flow of dc current. The option for isolating the battery bank & SPV arrays should be made. Best quality Ah meter shall be installed to measure the cumulative charging & discharging status of battery bank.

d. Earthing & Lightning Arrestor

Earthing Protection:

The structure of the PV Module shall be grounded properly using adequate number of earthing kits. All metal casings/ shieldings of the plant shall be thoroughly grounded to ensure safety of the power plant.

Lightning Arrestor:

The SPV power plant shall be provided with lightning and over-voltage protection. The main aim of this protection will be to reduce the over-voltage to a safe value before it reaches the PV or other sub-system components. The source of over-voltage can be lightning, atmospheric disturbances, etc.

e. Remote Monitoring:

All the relevant parameters of PCU should be available for remote monitoring over the internet using GPRS based monitoring solution.

Page 20 of 40

DATA SHEET

3. Technical Specifications & Configuration: Category – I

Sl. No.	Item Description		Qty
1.	Solar PV Module 250Wp – 3kWp		1 set
2.	Power Conditioning Unit – 3KVA		1 set
3.	Battery Bank – 48V, 200Ah		1 set
4.	Module Mounting Structure		1 set
5.	AJB, ACDB & DCDB		1 set
6.	Earthing & Lightning Arrestor		1 set
7.	Cables & other components As per site requi		irement

General Specification of PCU: PCU Rating: 3KVA

Parameters	Specifications	
Photovoltaic Input		
Nominal Input Voltage (Vdc)		
Input Voltage Range		
Maximum PV power recommended (KW)		
Charge Controller		
MPPT base Charge Controller		
Switching Element		
Controller		
Type of Charger		
Peak Efficiency		
Grid Input		
Input Supply Phases		
Nominal Voltage & Range		
Active Filtering during Load on mains		
a. THD		
b. Power Factor		
c. Harmonic Attenuation Ratio		
Battery		
Туре		
Battery Nominal Voltage		
Capacity		
Grid through battery charging		
Active Filtering during Battery charging from Grid		
a. THD		
b. Power Factor		

Page 21 0f 40

Inverter	
Switching Element	
Controller	
Nominal Output Voltage	
Output Supply Phase	
Output Waveform	
Nominal Frequency	
Load Power Factor	
Nominal Output Current (A)	~
Parameters	Specifications
Voltage regulation	
Voltage Stability in dynamic condition Output Voltage distortion with 100% linear load (%)	
Overload at nominal output voltage for 15 minutes	
Overload at nominal output voltage for 15 minutes	
Overload at nominal output voltage for 1 minutes	
System peak efficiency	
Noise @ 1 meter (dBA ± 2dBA)	
Enclosure protection degree with open doors	
Cooling	
Galvanic Isolation	
Protection	
Display Parameter	
Operating Temperature (°C)	
Max. Relative Humidity (%)	

Page 22 of 40

DATA SHEET

Category - II

Sl. No.	Item Description		Qty
1.	Solar PV Module, 250Wp – 30kWp		1 set
2.	Power Conditioning Unit –30 KVA		1 set
3.	Battery Bank – 240V, 360Ah		1 set
4.	Module Mounting Structure		1 set
5.	AJB, ACDB & DCDB		1 set
6.	Earthing & Lightning Arrestor		1 set
7.	Cables & other components As per site requir		ement

General Specification of PCU:

PCU Rating: 30KVA

Parameters	Specifications	
Photovoltaic Input		
Nominal Input Voltage (Vdc)		
Input Voltage Range		
Maximum PV power recommended (KW)		
Charge Controller		
MPPT base Cha	rge Controller	
Switching Element		
Controller		
Type of Charger		
Peak Efficiency		
Grid I	nput	
Input Supply Phases		
Nominal Voltage & Range		
Active Filtering dur	ing Load on mains	
d. THD		
e. Power Factor		
f. Harmonic Attenuation Ratio		
Battery		
Туре		
Capacity		
Battery Nominal Voltage		
Grid through battery charging		
Active Filtering during Battery charging from Grid		
c. THD		
d. Power Factor		

Page 23 of 40

Inverter	
Switching Element	
Controller	
Nominal Output Voltage	
Output Supply Phase	
Output Waveform	
Nominal Frequency	
Load Power Factor	
Nominal Output Current (A)	
Voltage regulation	
Parameters	Specifications
Voltage Stability in dynamic condition	
Output Voltage distortion with 100% linear load (%)	
Overload at nominal output voltage for 10 minutes	
Overload at nominal output voltage for 1 minutes	
System peak efficiency	
Noise @ 1 meter ($dBA \pm 2dBA$)	
Enclosure protection degree with open doors	
Cooling	
Galvanic Isolation	
Protection	
Display Parameter	
Operating Temperature (°C)	
Max. Relative Humidity (%)	

Page 24 of 40

Category – III, VII & VIII

DATA SHEET

Sl. No.	Item Description		Qty
1.	Solar PV Module, 250Wp – 25kWp		1 set
2.	Power Conditioning Unit –25KVA		1 set
3.	Battery Bank – 240V, 300Ah		1 set
4.	Module Mounting Structure		1 set
5.	AJB, ACDB & DCDB		1 set
6.	Earthing & Lightning Arrestor		1 set
7.	Cables & other components As per site require		ement

General Specification of PCU:

PCU Rating: 25KVA

Parameters	Specification
Photovoltaic Input	<u> </u>
Nominal Input Voltage (Vdc)	
Input Voltage Range	
Maximum PV power recommended (KW)	
Charge Controller	
MPPT base Charge Controller	
Switching Element	
Controller	
Type of Charger	
Peak Efficiency	
Grid Input	
Input Supply Phases	
Nominal Voltage & Range	
Active Filtering during Load on mains	
a. THD	
b. Power Factor	
c. Harmonic Attenuation Ratio	
Battery	
Туре	
Battery Capacity	
Battery Nominal Voltage	
Grid through battery charging	
Active Filtering during Battery charging from Grid	
a. THD	
b. Power Factor	

Page 25 of 40

Inverter	
Switching Element	
Controller	
Nominal Output Voltage	
Output Supply Phase	
Output Waveform	
Nominal Frequency	
Load Power Factor	
Nominal Output Current (A)	
Voltage regulation	
Voltage Stability in dynamic condition	
Parameters	Specification
Output Voltage distortion with 100% linear load (%)	•
Overload at nominal output voltage for 10 minutes	
Overload at nominal output voltage for 1 minutes	
System peak efficiency	
Noise @ 1 meter ($dBA \pm 2dBA$)	
Enclosure protection degree with open doors	
Cooling	
Galvanic Isolation	
Protection	
Display Parameter	
Operating Temperature (°C)	
Max. Relative Humidity	

Page 26 of 40

DATA SHEET

Category -IV

Sl. No.	Item Description		Qty
1.	Solar PV Module, 250Wp – 16kWp	Solar PV Module, 250Wp – 16kWp	
2.	Power Conditioning Unit – 10 KVA		1 set
3.	Battery Bank – 120V, 600 Ah		1 set
4.	Charge Controller – 120V, 20 kW		1 set
5.	Street Light with 5mtr. Pole along with mounting of Luminaries CFL 30 W		37 nos.
4.	Module Mounting Structure		1 set
5.	AJB, ACDB & DCDB		1 set
6.	Earthing & Lightning Arrestor		1 set
7.	Cables & other components	As per site requir	ement

General Specification of PCU:

PCU Rating: 10KVA

Parameters	Specifications
Photovoltaic Input	
Nominal Input Voltage (Vdc)	
Input Voltage Range	
Maximum PV power recommended (KW)	
Charge Controller	
MPPT base Charge Controller	
Switching Element	
Controller	
Type of Charger	
Peak Efficiency	
Grid Input	
Input Supply Phases	
Nominal Voltage & Range	
Active Filtering during Load on mains	
a. THD	
b. Power Factor	
c. Harmonic Attenuation Ratio	
Battery	
Туре	
Capacity	
Battery Nominal Voltage	
Grid through battery charging	
Active Filtering during Battery charging from Grid	
a. THD	
b. Power Factor	

Page 27 of 40

Inverter	
Switching Element	
Controller	
Nominal Output Voltage	
Output Supply Phase	
Output Waveform	
Nominal Frequency	
Parameters	Specifications
Load Power Factor	
Nominal Output Current (A)	
Voltage regulation	
Voltage Stability in dynamic condition	
Output Voltage distortion with 100% linear load (%)	
Overload at nominal output voltage for 10 minutes	
Overload at nominal output voltage for 1 minutes	
System peak efficiency	
Noise @ 1 meter (dBA \pm 2dBA)	
Enclosure protection degree with open doors	
Cooling	
Galvanic Isolation	
Protection	
Display Parameter	
Operating Temperature (°C)	
Max. Relative Humidity (%)	

Page 28 of 40

Technical Details of the Street Lights & Load

Parameters	Specifications
No. of Street Lights	
Wattage of each fixtuture	
Luminaire Type	
Light Output	
Beam Angle	
Color Temperature	
Pole Height	
Power Consumption	
Efficiency	

Bidders are advised to refer the DPR for schematic layout of street lights and location of power plant to be installed at Garobadha Market.

Page 29 of 40

Category –V & VI

For 50 kWp

Sl. No.	Item Description		Qty
1.	Solar PV Module, 250Wp – 50kWp		1 set
2.	Power Conditioning Unit – 50KVA		1 set
3.	Battery Bank – 240V, 600Ah		1 set
4.	Module Mounting Structure		1 set
5.	AJB, ACDB & DCDB		1 set
6.	Earthing & Lightning Arrestor		1 set
7.	Cables & other components	As per site requ	irement

General Specification of PCU:

PCU Rating: 50KVA

Parameters	Specifications
Photovoltaic Input	
Nominal Input Voltage (Vdc)	
Input Voltage Range	
Maximum PV power recommended (KW)	
MPPT base Charge Controller	
Switching Element	
Controller	
Type of Charger	
Peak Efficiency	
Grid Input	
Input Supply Phases	
Nominal Voltage & frequency	
Active Filtering during Load on mains	
a. THD	
b. Power Factor	
c. Harmonic Attenuation Ratio	
Battery	
Туре	
Battery Nominal Voltage	
Battery Capacity	
Grid through battery charging	
Active Filtering during Battery charging from G	rid
a. THD	
b. Power Factor	

Page 30 of 40

Inverter	
Switching Element	
Controller	
Nominal Output Voltage	
Output Supply Phase	
Output Waveform	
Nominal Frequency	
Load Power Factor	
Nominal Output Current (A)	
Voltage regulation	
Parameters	Specifications
Voltage Stability in dynamic condition	
Output Voltage distortion with 100% linear load (%)	
Overload at nominal output voltage for 10 minutes	
Overload at nominal output voltage for 1 minutes	
System peak efficiency	
Noise @ 1 meter ($dBA \pm 2dBA$)	
Enclosure protection degree with open doors	
Cooling	
Galvanic Isolation	
Protection	
Display Parameter	
On exercise Temperature (°C)	
Operating Temperature (°C)	
Max. Relative Humidity (%)	

Page 31 of 40

DATA SHEET

Category:	

_ (This is a sample only; similar for other kWp capacities)

Sl. No.	Item Description	Qty	
1.	Solar PV Module, 250Wp – 25kWp	1 set	
2.	Power Conditioning Unit –25KVA	1 set	
3.	Battery Bank – 240V, 300Ah	1 set	
4.	Module Mounting Structure	1 set	
5.	AJB, ACDB & DCDB	1 set	
6.	Earthing & Lighting Arrestor	1 set	
7.	Cables & other components	ement	

PCU Rating:

25KVA

Offer by bidder Parameters **Photovoltaic Input** Nominal Input Voltage (Vdc) Input Voltage Range Maximum PV power recommended (KW) Charge Controller MPPT base Charge Controller Switching Element Controller Type of Charger Peak Efficiency Grid Input Input Supply Phases Nominal Voltage & Range Active Filtering during Load on mains d. THD Power Factor e. Harmonic Attenuation Ratio f. Battery Туре **Battery Capacity** Battery Nominal Voltage Grid through battery charging Active Filtering during Battery charging from Grid THD c. d. Power Factor

Page 32 of 40

Inverter								
Switching Element								
Controller								
Nominal Output Voltage								
Output Supply Phase								
Output Waveform								
Nominal Frequency								
Load Power Factor								
Parameters	Offer by bidder							
Nominal Output Current (A)								
Voltage regulation								
Voltage Stability in dynamic condition								
Output Voltage distortion with 100% linear load (%)								
Overload at nominal output voltage for 10 minutes								
Overload at nominal output voltage for 1 minutes								
System peak efficiency								
Noise @ 1 meter (dBA \pm 2dBA)								
Enclosure protection degree with open doors								
Cooling								
Galvanic Isolation								
Protection								
Display Parameter								
Oneverting Temperature (°C)								
Operating Temperature (°C)								
Max. Relative Humidity								

Page 33 of 40

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012 Phone No.0364-2537343/2536138#Fax No.0364-2537611 E-Mail: <u>mnreda.dir@gmail.com</u> Website: <u>www.mnreda.gov.in</u>

PART – B

Financial Bid

Page 34 of 40

PART –B FINANCIAL BID

NIT No.: MNREDA/1641/2015/5

Date Shillong, the 5th October, 2015.

Category: _____

SI. No.	ltem	Quantity	Unit	Unit Price (Rs.)	Total Price (Rs.)
1.	SPV Modules with all accessories				
2	Battery with all accessories				
3	Inverter with all accessories				
4.	Structures				
5.	Balance of System*				
	Sub-total - A				
6.	Transportation & Insurance				
7.	Civil & Electrical works				
8.	Installation & Commissioning				
	Sub-total - B				
9.`	Comprehensive Maintenance for				
9.	3 (three) years.				
	Grand Total				

Rupees_____

Note : 1. The prices quoted above are complete in all respect as per Technical Specifications and inclusive of all Central/State/Local taxes & duties, packing, forwarding, transit insurance, loading & unloading, transportation & other charges etc.

2. Certified that rates quoted are as per specifications, terms & conditions mentioned in the bid document.

3. * Balance of System includes balance of materials as per specifications and Data Sheets to make the System operational.

4. All the materials shall be delivered within 60 (sixty) days from the date of issue of the work order.

Signature of Tenderer with Company seal. Page 35 of 40

Date:

PREAMBLE:

Contract for design, supply, manufacturing inspection, packing and forwarding, transportation, installation & commissioning of _____ Kwp solar photovoltaic plant systems at ______ location in the State of Meghalaya.

This contract made this _____day of ______ Two thousand Fifteen at Shillong.

BETWEEN

Meghalaya Non-Conventional and Rural Energy Development Agency(MNREDA) having its office at Near BSF Camp, Mawpat, Shillong-793012, East Khasi Hills District, Meghalaya, India, hereinafter referred to as the "PURCHASER" which term or expression unless excluded by or repugnant to the context or the meaning thereof, shall be deemed to includes its successors and permitted assigns, OF THE ONE PART,

AND M/s______having its office at_____ Hereinafter referred to as "Supplier" which term or expression unless excluded by or repugnant to the context or meaning thereof shall be deemed to include its successors and permitted assigns), OF THE OTHER PART,

AND WHEREAS

a. The PURCHASER has decided to get the work of supply, installation and commissioning of

Kwp	Solar	Photovoltaic	Power	Plant	at	location	in	the	State	of
Meghalaya.										

- b. The SUPPLIER has declared that he has valuable specialized knowledge and expertise fo Manufacturer, Shop Testing, packing, Forwarding, Transportation, Transit Insurance, Supply, Installation, Testing and Commissioning of Solar Photovoltaic power Plant Systems.
- c. The Supplier has obtained clarifications on technical and commercial aspects, inspected the site and generally all matters incidental thereto and ancillary thereof, affecting the execution and completion of the job, and
- d. The SUPPLIER has agreed to undertake the aforesaid work as per the Specifications and the terms and conditions of the PURCHASER.
- e. The SUPPLIER has accepted the tender of the SUPPLIER for the aforesaid work and on the basis of above declarations of the Supplier, has decided to enter into this agreement with the SUPPLIER.

Page 36 of 40

NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

Article-1

1.1 In consideration of the total contract price of Rs._____(Rupees

)only and as per details specified in Purchase Order to be paid by the PURCHASER to the SUPPLIER for scope of work and services the SUPPLIER hereby covenants with the PURCHASER to perform the work detailed in Purchaser Order and Technical Specification.

- 1.2 Subject to the provisions of this contract, completion of the work within the stipulated time is the essence of the contract. The SUPPLIER shall arrange to effect deliveries of the materials, facilities and other services under this contract within the time schedule and in such manner that the completion of all items of work shall be synchronized in such a way that the overall schedule of the various items specified in the contract is observed and adhered to.
- 1.3 Notwithstanding the approval accorded by the PURCHASER to the appointment of any sub-Suppliers including those which may be specified in the contract, the SUPPLIER shall be solely responsible for the completion of the work as per specifications and within the time schedule agreed in this contract. Approval of any sub-Supplier by PURCHASER shall not relieve SUPPLIER from any of his liabilities or obligations under the contract and he shall be responsible for the acts, defaults and neglects of any sub-Supplier as fully as if they were the acts, defaults or neglects of SUPPLIER

Article-2

The contract price is inclusive of all applicable charges, insurance, freight, TOT, Octroi, Excise Duty, Professional Tax, VAT and all the other taxes and duties.

Article-3

This contract shall come into effect from the date of Purchase Order.

Article-4.

In case of any failure in the due performance of the contract to deliver any part of the equipment or complete the work within the time fixed under the contract or any extension thereof granted to him by MNREDA and to fulfil his obligations in time under the contract, he shall be liable to pay MNREDA liquidated damaged as mentioned in the Purchase Order.

Page 37 of 40

Article-5

The following documents shall form and be read and construed as an integral part of this contract: Purchase Order No.MNREDA/______.

Article-6

All notices under this contract shall be given in writing and shall be deemed sufficiently given when delivered either in person or by telegram, fax/telex or by registered mail or courier addressed to the other party at its address set forth in the preamble to this contract with a copy to the nominated representative at site.

Article-7

This contract is executed in English language.

Article-8

The contract shall be subject to the exclusive jurisdiction of the courts under the Meghalaya High Court at Shillong.

IN WITNESS HEREOF the Parties hereto by representatives duly authorized have executed the contract on the day, month and the year first above written.

Signature	Signature
For and on behalf of Supplier	For and on behalf of
	Meghalaya Non-Conventional and Rural Energy development Agency.
(Seal of the office)	(Seal of the office)
In the Presence of:	In the Presence of:
1.	1.

2.

2.

Page 38 of 40

CONTRACT PERFORMANCE GUARANTEE

(To be stamped in accordance with Stamp Act)

(The stamp paper should be in the name of issuing bank)

Bank Guarantee No.

Ref:

Date :

To,

Director, Meghalaya Non-Conventional and Rural Energy Development Agency (MNREDA), Near BSF Camp, Mawpat, Shillong-793012.

Dear Sir,

In consideration of the MNREDA Meghalaya Non-Conventional and Rural Energy

Development Agency (hereinafter referred to as the (MNREDA) which expression shall unless repugnant to the context or meaning thereof includes its executers, administrators, successors and assigns) having accepted offer of Supply Installation Testing Commissioning(SITC) of Solar Project of Kwp at bv M/s.___ _with its Registered/Head Office at _(hereinafter referred to as "Supplier", which expression shall unless repugnant to the context or meaning thereof includes its executers, administrators, successors and assigns) a contract by issue of (MNREDA) Letter of Award No._____Dated_____ and the same having been unequivocally accepted by the Supplier resulting in a "Contract" bearing No._____ for Supply Installation Testing Commissioning(SITC) of Solar Project of _____ Kwp at ____ and the Supplier having agreed to provide a contract performance guarantee for the faithfull performance of the entire contract equivalent to Rs._____(in figure and words).

Whereas the above said Letter of Award being assigned by MNREDA Authority Signatory (hereinafter referred to as the "MNREDA", which expression shall unless repugnant to the context or meaning thereof includes its executers, administrators, successors and assigns) vide MNREDA's , letter No.______dated______dated______dated______dated_______dated______dated______dated______dated______dated______dated_______dated______dated______dated_______dated______dated______dated______dated______dated______dated______dated______dated______dated_______dated______dated______dated______dated_______dated_______dated______dated_______dated______dated______dated_______dated_______dated______dated_______dated______dated______dated______dated_______dated_______dated_______dated______dated_______dated_______dated_______dated______dated_______dated_______dated_______dated_______dated_______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated_____dated_____dated_____dated______dated______dated_____dated______dated______dated______dated______dated______dated______dated______dated______dated______dated______dated_____dated_____dated_____dated_____dated______dated______dated_____dated_____dated_____dated_____dated_____dated_____dated_____dated_____dated_____dated_____dated______dated______dated____

We_____(Name & Address), having our Head office at______and Branch of______and bnNREDA and the Supplier or any dispute pending before any court, tribunal or any other authority. The bank undertakes not to revoke this Bank guarantee during its currency without previous consent of the MNREDA and further agrees that the guarantee herein contained shall continues to be enforceable till the MNREDA discharges this guarantee.

Page 39 of 40

The MNREDA shall have the fullest liberty without affecting in anyway the liability of the bank under this guarantee from time to time to extend the time for performance of the contract by the Supplier. The MNREDA shall have the fullest liberty, without affecting this guarantee to postpone from time to time the exercise of any powers, vested in them or of any right which they might have against the Supplier, and to exercise the same at any time any manner, and whether to enforce or to forbear or to enforce any covenants, contained or implied, in the contract between MNREDA and the Supplier or any other course of remedy or security available to the MNREDA. The Bank shall not be released of its obligation under these presents by any exercise by the MNREDA of its liberty with reference to the matters aforesaid or any of them or by a reason of any other acts of omission or commission on the part of the MNREDA or any other indulgence shown by the MNREDA or by any other matters or thing whatsoever which under law would, but for this provision, have the effect of relieving the bank.

The bank also agrees that the MNREDA at its option shall be entitled to enforce this guarantee against the bank as a principal debtor, in the first instance without proceeding against the Supplier and notwithstanding any security or other guarantee that the MNREDA may have in relation to the Supplier's liabilities.

Notwithstanding	anything	contained	herein	above	our	liability	under	this	guarantee	is	restricted
to		and it s	hall rema	in in for	ce upto	and inclu	ıding			an	d shall be
extended from tim	ne to time f	or such peri	od, as ma	ay be des	sired by	/ M/s					on whose
behalf this guarant	ee has been	given.									
Dated this	day	of	2	0 at							
Witness. 1.											
Signature			(Sign	ature)							
Name			Bank	Rubber	Stamp						
Official Address											
			Nam	e							
						gnation wi					
Witness. 2.					Atto	rney as pe	r				
Signature					Pow	er of Atto	rney No			-	
Name			_		Dated	1			-		
Official Address _											
			_								
			_								

Page 40 of 40