

**NATIONAL COMPETITIVE BID (NCB)  
OPEN TENDER**

**BHARATIYA RESERVE BANK NOTE MUDRAN (P) LTD  
NOTE MUDRAN NAGAR  
MYSURU -570003**

Phone: 0821 – 2582905,2582915,2582925,2582935,2582945

Fax : 0821 – 2582099, E-Mail: [Mysurupress@brbnmpl.co.in](mailto:Mysurupress@brbnmpl.co.in)

Website : [www.brbnmpl.co.in](http://www.brbnmpl.co.in)

**Not Transferable**

**Security Classification: Non-Security**

**TENDER DOCUMENT FOR “DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING OF (350KW + 40KW) SOLAR PHOTOVOLTAIC POWER PLANT WITHOUT BATTERY BANK (GRID INTERACTIVE) IN BRBNMPL, MYSURU”**

Tender No: **..: 093/MYS/MAINT(U)/2017-18 dated 01/12/2017**

This tender document contains 24 pages

The tender document is sold to :

M/s. \_\_\_\_\_

Address \_\_\_\_\_

Details of Contact person in BRBNMPL regarding this tender:

Name: S.M.PAWALE

Designation: ASST GENERAL MANAGER

**Address: As above**

**Phone: 0821 – 2469050, Fax: 0821-2582885**

**Email: [smpawale@brbnmpl.co.in](mailto:smpawale@brbnmpl.co.in)**

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\*The representative of the bidder shall bring the signed copy of this format for attending bid opening

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**Section I: Notice Inviting Tender (NIT)**

Tender No:- .: 093/MYS/MAINT(U)/2017-18 dated 01/12/2017

1. Sealed tenders are invited from eligible and qualified tenderers for supply of following goods & services:

Schedule No.	Brief Description of Goods / Services	Quantity (with unit)	Earnest Money (in Rs.)
1	Design, Supply, Installation, Testing, Commissioning of (350 +40) KW Solar Photovoltaic Power plant without Battery bank (Grid interactive) in BRBNMPL, Mysuru	As per section XI PRICE Schedue	Rs.5,08,000/- (Rupees Five Lakh Eight Thousand only)

Type of Tender (Two Bid / PQB / EOI / RC / Development / Indigenization / Disposal of Scrap / Security item etc.	Two Bid - Open Tender.
Price of the Tender Document	Rs. 500.00
Closing date and time for receipt of tenders	14:30 Hrs. on 03/01/2018
Place of receipt of tenders	Admin Building, BRBNMPL, Mysore
Time and date of opening of tenders	15:00 Hrs. on 03/01/2018
Place of opening of tenders	Admin Building, BRBNMPL, Mysore
Nominated Person / Designation to Receive Bulky Tender (Clause 21.21.1 of GIT)	DGM/AGM (Utility Maintenance).

2. Interested tenderers may obtain further information about this requirement from the above office selling the documents. They may also visit our website mentioned above for further details.

3. Tenderer may download the tender documents from the web site and submit its tender by utilizing the downloaded document, along with the required non-refundable fee as mentioned above.

4. Tender documents may be purchased on payment of non-refundable fee of Rs.500.00 (Rupees five hundred only) per set in the form of account payee demand draft/ cashier's Cheque / certified Cheque, drawn on a scheduled commercial bank in India, in favor of BRBNMPL, Mysore, payable at Mysore.

5. If requested, the tender documents will be mailed by registered post/ speed post to the domestic tenderers for which extra expenditure per set will be Rs. 100.00 ( Rupees hundred only). The tenderer is to add the applicable postage cost in the non-refundable fee mentioned in Para 4 above.

6. Tenderers shall ensure that their tenders, duly sealed and signed, complete in all respects as per instructions contained in the Tender Documents, are dropped in the tender box located at Administrative Building of BRBNMPL, Note Mudran Nagar, Mysore 570003 on or before the closing date and time indicated in the Para 1 above, failing which the tenders will be treated as late and rejected.

7. In the event of any of the above mentioned dates being declared as a holiday/ closed day for the purchase organization, the tenders will be sold / received / opened on the next working day at the appointed time.

8. The tender documents are not transferable.

For and on behalf of BRBNMPL, Mysore

Sd/-  
(S M Pawle)  
Asst.General Manager

## Section II: General Instructions to Tenderer (GIT)

This Section-II shall be downloaded from website: [www.brbnmpl.co.in](http://www.brbnmpl.co.in) under the section 'Downloads' and signed & stamped and submitted along with the **Technical bid** as acceptance of terms & conditions. (*Offer without the copies of Section-II shall liable for rejection*)

## Section III: Special Instructions to Tenderers (SIT)

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/ substitute/ supplement the corresponding General Instructions to Tenderers (GIT) incorporated in Section II. The corresponding GIT clause numbers have also been indicated in the text below:

In case of any conflict between the provision in the GIT and that in the SIT, the provision contained in the SIT shall prevail.

The sealed tender offer shall be submitted as given below:-

- a. Copy of each page of Tender documents should be duly signed & seal affixed and submitted along with the Techno-commercial bid as a token of acceptance of tender conditions. The certificate as provided in annexure- A also must be signed and enclosed.
- b. The first sealed envelope should contain:
  - i) DD for **Rs.500/-** towards cost of tender document
  - ii) EMD amount of **Rs.5,08,000/- ( as Demand Draft ) payable to BRBNMPL at Mysuru** as detailed in clause 18 of General Instructions to tenderer (GIT) .
  - iii) Signed tender documents, along with Techno-commercial bid. The envelop should be sealed and properly super-scribed as **above**.
- c. The second sealed envelope should have price bid as per Section XI with superscription "**Price BID – Tender Enquiry No.093/MYS/MAINT(U)/2017-18 dated 01/12/ 2017**".
- d. The above Two envelop should be put in single envelope , sealed and properly super-scribed as Tender for "Design, Supply, Installation, Testing, Commissioning of (350 +40) KW Solar Photovoltaic Power plant without Battery bank (Grid interactive) in BRBNMPL, Mysuru." , against Tender Enquiry No.093 /MYS/MAINT(U)/2017-18 dated 01/12/2017". should be addressed to "The General Manager , BRBNMPL, Mysore-03 so as to reach us on or before **14.30 Hrs on 03/ 01/2018 .Tender Offers not super scribed as above are liable for rejection.**
- e. The tender offer may be sent by Regd. Post/ Courier. Parties desirous of handing over Tender Offer by hand should drop the Tender Cover in the Tender Box kept in the Administration Building ground floor, after recording the offer details in the register kept on the tender box.

## Section IV: General Conditions of Contract (GCC)

This Section-IV shall be downloaded from website: [www.brbnmpl.co.in](http://www.brbnmpl.co.in) under the section 'Downloads' and signed & stamped and submitted along with the **Technical Bid** as acceptance of terms & conditions. (*Offer without the copies of Section - IV shall liable for rejection*)

## Section V: Special Conditions of Contract (SCC)

The following Special Conditions of Contract (SCC) will apply for this purchase. These Special Conditions will modify / substitute / supplement the corresponding (GCC) clauses.

Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

- Pre-bid visit:** The bidders are advised to visit the Plant premises to have understanding about scope of work, volume of work, any doubt/clarification may be cleared/done before submitting their offers. Any claim of ignorance about the system or responsibility shall not be entertained in later stage.
- Time schedule:** work shall be completed within 08 months from the date of receipt of work order. The total time period as specified above for the completion of the job is to be strictly maintained and is the essence of the order.
- Payment:** 70% of work order value shall be made after receipt and acceptance of material and certification by Maintenance Division of BRBNMPL. Balance payment of material and Payment towards the installation and commissioning charges shall be made only after satisfactory completion of the work.  
**Important Note:** The collecting subsidy from MNRE shall be the scope of supplier and invoice has to be raised for total cost minus subsidy. However, BRBNMPL shall issue necessary certificate or letter to claim the subsidy.
- Security Deposit/Performance Guarantee:** 10% of work order value as Security deposit/performance guarantee in the form of DD/BG in the format shall be deposited within 21 days from the date of issue of notification for award of Work order.
- Liquidated damage:** For any delay beyond the time specified above without any valid reason, liquidated damages @ 0.5% of the value of the work shall be levied per week of delay, subject to a maximum of 10% of total value of works completed / final bill value. Quantum of liquidated damages assessed and levied by BRBNMPL shall be final and not challengeable by the supplier / contractor. Contractor has to apply for extension with valid reasons at least 10 days prior to the completion date.
- Statutory requirements:** The Contactor should comply with all statutory provisions as applicable. Any untoward incident arising out of improper supervision or inadequate safety measures will be the sole responsibility of the contractor. The Contractor shall conform to all the Labour Laws and shall remain solely responsible for the obligation under the relevant statutory provisions. The contractor has to provide all statutory welfare measures for their workers.
- Materials:** BRBNMPL shall reserve the right to reject any materials if it is found not in conformity with specification and terms and conditions of the order in all respect.
- Warranty / Defects Liability Period:** Warranty / Defects liability period against each item mentioned respectively (in the table below) from the date of Final Acceptance Certificate. The contractor shall be liable to replace/repair any defects within the warranty/defects liability period free of cost to the BRBNMPL.

1	Solar Modules	10 years free replacement guarantee against material defect or craftsmanship
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2	Solar Modules	Minimum 90% power output for 10 years and 80% power output for next 15 years.
3	Inverter	Workmanship/product replacement – 5 years, service-25 years
4	PV Array Installation	Structural – 25 years

9. **Quantum of work:** Quantities mentioned in the schedule of items are as per the prevailing condition & requirement and may vary during the execution of work. Any such variance will be accounted and paid extra as per the quoted rates.
10. **Repeat order:** BRBNMPL may place repeat order for the maximum 50% of total quantity of original contract, at a later date at the quoted rates, if required.
11. **Safety & Security Measures:**
- The contractor should scrupulously conform to the safety and security norms as stipulated by BRBNMPL while working in the security area.
  - The contractor shall take all the precaution while executing this work. Protective gear such as safety helmets, boots, belts etc. shall be provided by the contractor at his own cost to all his workers at site. It shall be the responsibility of the contractor to ensure that such protective gear is worn at all times by all personnel working at site. BRBNMPL shall have the right to stop any person not wearing such protective gear from working on the site
  - BRBNMPL is a security organization and the Govt. of Karnataka declares the premise as Prohibited Area. Hence the contractor has to abide by the security rules of the Company. The contractor has to ensure the character and antecedent of the persons deployed. The contractor must be in a position to produce such documents whenever he is asked to do so. Contractor should apply for Gate Pass for labours, welding permission and material entry pass etc. as per approved format only, well in advance to avoid any delay in issue of Gate passes.
  - While applying for pass, contractor must enclose copy of address proof (Voters ID card or ration card or driving license or passport etc., for all the workers for which gate pass has been requested. The details shall be submitted in the prescribed format.
  - Any worker of the contractor, if found by the Company as unsuitable or having doubtful integrity, shall be removed from the premises at the risk and cost of the contractor. The contractor shall vouch guarantee for the integrity of its workers.
12. **Cleanliness:** Contractor is required to ensure complete cleanliness at the site. Debris generated during the day's work should be disposed off immediately.
13. **Electricity & Construction water:** Necessary source of electricity & water required for civil works will be taken from the available nearby source. In case the same is not available it should be arranged by the contractor.
14. **Legal Jurisdiction:** The Court of Mysore (Karnataka State) only shall have jurisdiction to deal with and decide any legal matter of dispute whatsoever arising out of any work order placed by us.
15. BIDS submitted not in accordance with the above guidelines & with counter conditions will be liable for rejection. BRBNMPL's decision on acceptance /rejection shall be final without assigning any reason thereof. BIDS once submitted will not be allowed for revision without the approval of BRBNMPL. Any withdrawal of BID after submission of offer will result in forfeiture of EMD and blacklisting of vendor. Parties not interested to participate in the tender for any reason, may please intimate us.

## Section VI: List of Requirements

Schedule No.	Brief description of goods and services (Related specifications etc. are in Section-VII)	Accounting unit	Quantity	Amount of Earnest Money
1.	TENDER FOR DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING OF (350 KW + 40 KW) SOLAR PHOTOVOLTAIC POWER PLANT WITHOUT BATTERY BANK (GRID INTERACTIVE) IN BRBNMPL, MYSURU  (AS DETAILED IN SECTION VII)	As per section XI price schedule	01	Rs.508,000/-

Required Delivery Schedule: 08 months

Required Terms of Delivery, Destination and preferred mode of Transportation:

F.O.R, BRBNMPL, Mysuru.

Location details for the Work: Plant and administration building of BRBNMPL, Mysuru



## Section VII: Technical Specifications

### ***“DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING OF (350 KW + 40 KW) SOLAR PHOTOVOLTAIC POWER PLANT WITHOUT BATTERY BANK (GRID INTERACTIVE) IN BRBNMPL, MYSURU”***

#### **A) Scope of work: -**

The scope of the work shall include,

1. Design, supply, installation, commissioning of the (350 KW + 40 KW) hybrid solar PV Power Plant.
2. Installation of PV modules at Roof Top with required fixtures, Junction boxes, cables, Power Conditioning Unit and connect to the one or more LT feeders of BRBNMPL, Mysuru. **Bidders may visit the BRBNMPL site to know the exact requirement and site conditions before quoting for the tender.** Any claim of ignorance about the system or responsibility shall not be entertained in later stage.
3. Supply of the complete systems, including all necessary components, sub-components, spares, tools etc. Power plant shall be installed as per the specifications provided in the technical offer.
4. Making arrangements of ladder / cranes or etc. for shifting of all the items to the Roof-Top of the Main press building for installation.
5. Fabrications, supply and the installation of suitable support for the PV panels and other components whichever is required with the accessories.
6. The plant shall feed AC power to the Low Tension (LT) distribution grid power supplies.
7. The plant shall monitor solar generated energy using plant AC energy meter independent of load energy monitoring.
8. Each PV panel structure shall be incorporated one bird repellent spike at a level higher than the panel upper edge. The location of the spike should be selected for minimum shadow effect.
9. Array support structure shall be fabricated using corrosion resistant GI or anodized aluminum or equivalent metal sections. Array support structure welded joints and fasteners shall be adequately treated to resist corrosion.
10. The individual string/array combiner boxes and DC cabling shall be installed at a closer distance to PV panels.
11. The inverters shall be installed nearer to the PV panels in a weather proof cabinet.
12. One junction box (IP -65) shall be provided with bus bar arrangement at roof top to interconnect inverter output and to connect output cables to sub-station.
13. Civil work (grouting) for PV structure.
  - i. The individual Solar PV array shall be installed on existing roof top of the building using fixed PV array support structure.
  - ii. PV array shall be installed in the space free from any obstruction and / or shadow by utilizing maximum space.
  - iii. Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection, ease of installation, replacement, cleaning of panels and electrical maintenance.
  - iv. The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the roof top columns properly. All nuts and bolts shall be of very good quality stainless steel/ Cadmium coated
  - v. PV panel frames shall be fixed and grouted to RCC blocks, which in turn shall be secured the structure in a seamless manner with no impact on waterproofing of the existing structure. In case damages happened to the existing waterproofing then it

- should get repaired by the supplier. Additional waterproofing shall be provided in the areas where RCC blocks are secured, if required.
- vi. The supplier shall specify installation details of the PV modules and the support structure with appropriate diagrams and drawings. Such details shall include, but not limited to the following;
- a) Determination of true south at the site;
  - b) Array tilt angle to the horizontal, with permitted tolerance;
  - c) Details with drawings for fixing the modules;
  - d) Details with drawings of fixing the junction/terminal boxes;
  - e) Interconnection details inside the junction/terminal boxes;
  - f) Structure installation details and drawings;
  - g) Electrical grounding (earthing);
  - h) Inter-panel/Inter-row distances with allowed tolerances; and
  - i) Safety precautions to be taken.
14. Contractor shall provide pedestals if required for mounting of the PCU'S and control panels.
15. The statutory fees/ charges for getting approval from government agencies/Central Electricity Authority shall be borne by the BRBNMPL. It is contractor's sole responsibility for liaising, Co-ordination etc..., and to obtain all the approvals from the Central Electricity Authority before installation & commissioning.
16. The bidder must also provide 3 sets of documents in English, containing detailed operation and maintenance manual, Wiring diagram and GA Drawing, after completion.
17. Training to the user for operation and maintenance of the system.
18. The quantities mentioned in schedule of items are tentative and may vary as per the site requirement. Payment shall be made as per the actual work done.
19. The contractor has to arrange all the required materials, tools and tackles, labour, transportation etc., at his own cost.
20. Contractor shall supply the miscellaneous materials like junction box, anchor fasteners, screws, bolts and nuts, cable glands and lugs etc. and carry out associated minor works for successful completion of work. Contractor shall do any other related jobs that are not mentioned above, but found necessary at the time of execution to complete the job in all respect.
21. The materials supplied and work executed shall comply with relevant I.S. Standard and I.E. Rules. BRBNMPL shall have the right to reject any materials and workmanship, if it is found not in conformity with specification, approved brand and terms and conditions.
22. Latest revision of all applicable IE codes, regulations shall govern the design, manufacture, installation, testing and commissioning of this work even when the requirement of the specification is less stringent than the codes, regulations and standards. In the event of requirement of the specification exceeds the corresponding codes, regulations or standards, the specification shall govern.
23. Certificate for module from IEC or equivalent to be submitted as part of the bid offer.

**B) Schedule of Items**

SCHEDULE OF ITEMS FOR SUPPLY FOR 350 KWp & 40KWp

Sl.No	DESCRIPTION	UNIT	Approx Qty for 350 KWp	Approx Qty for 40 KWp	Make & Model
<b>1.0</b>	<b>Supply of Items</b>				
1.1	Solar PV module - 310 Wp each, for a total capacity of 350 KWp as per specifications	Nos	1130	130	BHEL/ CEL/ REIL/ TATA BP/PHOTON or equivalent
1.2	Grid Tied Inverter: 50 KW-415V AC, 50Hz, for 350 KWp	Nos	7	1	SMA/ SCHENIEDER-XENTREX/ SEMICRON/ ABB/ PPS / OPS/DB Electronics or any reputed brand.
1.3	Module mounting structure for a total capacity of 350 KWp as per specifications	Lot	1	1	G.I or Corrosion resistance material.
1.4	PVC Cu cable of suitable size (Array to Inverter), size: - 4 core, 25 sq. mm for a total capacity of 350 KWp & 40 KWp as per specifications	Mts	As per requirement	As per requirement	Finolex / Polycab / Havells / HPL or reputed make as per IS standards
1.5	XLPE Aluminium cable of suitable size (Inverter to LT Junction Box), size: - 3 ½ core, 240 sq. mm	Mts	70 x 1 run	20 x 1 run	Finolex / Polycab / Havells / HPL or reputed make as per IS standards
1.6	XLPE Armoured Aluminium cable of suitable size (LT Junction box to AC DB Panel in Main press Substation, AC plant Substation and AC plant MCC panel), size: 3 ½ core, 240 sq. mm	Mts	1600 x 1 run	50 x 1 run	Finolex / Polycab / Havells / HPL or reputed make as per IS standards
1.7	XLPE Armoured Aluminium cable of suitable size (AC DB to BRBNMPL LT panel at Main press substation, AC plant substation & AC plant MCC panel) size: 3 ½ core, 240 sq. mm	Mts	300 x 1 run	20 x 1 run	Finolex / Polycab / Havells / HPL or reputed make as per IS standards
1.8	AC Distribution panel with two compartment	Nos	4	1	
1.9	Multi Contact Male cable coupler	Set	1	1	
1.10	Multi Contact Female cable coupler	Set	150	1	

1.11	Array Junction Boxes	Set	1	1	
1.12	Main Junction Boxes (LT Junction Box)	Nos.	4	1	
1.13	Lightning Arresters	Set	1	1	
1.14	Earthing protection system (For Solar system and lightning) (Separate Earth pit for Lightning arrestor & Solar panel & Inverter)	Set	2	2	
1.15	Energy meter in LT distribution panel	Nos	4	1	
1.16	Miscellaneous items required for completing the installation	Lot	1	1	

**Above mentioned quantity is estimated only and payment shall be made based on the actual quantity used/quantity of work done.**

**SCHEDULE OF ITEMS FOR ERECTION & COMMISSIONING OF 350 KWp & 40 KWp**

<b>2.0</b>	<b>ERECTION AND COMMISSIONING</b>	<b>unit</b>	<b>Quantity</b>
2.1	Erection and Commissioning of Solar PV module	Nos	1260
2.2	Erection and Commissioning of Grid Tied Inverter	Nos	8
2.3	Erection and Commissioning - Module mounting structure	Set	2
2.4	All miscellaneous works, cable terminations, control boxes, wiring works and all other related works.	Lot	1

**C) Technical Specifications**

**a) PV Array**

1	Solar PV array capacity	Should not less than 350 KWp & 40 KWp
2	Solar modules	Polycrystalline, minimum 310 Wp
3	Solar module frame	With corrosion resistant material
4	IS standards for Module	IEC 61215 latest edition for polycrystalline silicon or IEC 61646 for other latest technology
5	Solar Photo Voltaic module conversion efficiency	equal to or greater than 15% under Standard test conditions
6	Safety standards for Module	IEC 61730 Part I and part II
7	Module connection	Series-parallel string

## b) System output

Control Type	Voltage source, microprocessor assisted, output regulation.
Output voltage	3 phase, 415 V ac ( $\pm 5\%$ )
Frequency	50 Hz ( $\pm 3$ Hz)
Continuous rating	350 KVA (Grid tied) & 40 KVA
Normal Power	350 KVA & 40 KVA
Operating temperature Range	0 to 55 °C
LT distribution grid specifications	415V $\pm 5\%$ , 50Hz and frequency variation as per IE rules
Standard conformation	IEC 61683
Power Control	Maximum Power Point Tracing
Power Conditioning Unit efficiency	98% and above at full load.

c) **Series parallel array** : A suitable number of Solar PV modules shall be connected in a series string. A suitable number of series strings shall be connected in parallel to formulate a series parallel array.

d) **Module Frame:-** The module frame shall be made of corrosion resistant material electrically compatible with structural material used for mounting the modules. Array support structure welded joints and fasteners shall be adequately treated to resist corrosion.

e) **Inverter (Power Conditioning Unit – (PCU)):**

The PCU required shall be of 350 KVA + 40 KVA (8 x 50KVA) to convey DC power produced by SPV modules into AC power and adjust the voltage & frequency levels to the local grid conditions. The 350 KVA + 40 KVA PCU with grid interactive shall feed power to the A.C. load of lighting system of BRBNMPL.

### Important Features / Protections of PCU :

1. **MPPT:-** The PCU shall be provided with MPPT (Maximum Power Point Tracing) features, so that maximum possible power can be obtained from the PV module.
2. **Hybrid :-** The PCU shall be Hybrid one and shall give the preference to feed the Loads from Solar Energy being produced and shall draw the additional power from mains to meet the load requirements in the case load is more than solar energy being produced.
3. **Protection:-** Full proof protection against grid islanding which ensures that the PV power and the grid power gets disconnected immediately in the event of grid failure.
4. **Output Voltage:-** The sine wave output of the inverter shall be suitable for connecting to 415V, 3 phase AC LT voltage grid.
5. **Adaptability:-** The kVA ratings of inverter should be chosen as per the PV system wattage and to suit to supply the AC power to two or more LT grid.
6. **Display unit:** Inverter shall provide with display for PV array DC voltage, current and power, AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency.
7. **Operation Test:** Operation of startup, disconnect and shutdown controls shall also be tested and demonstrated. Stable operation of the PCU and response to control signals shall also be tested and demonstrated.

**f) Earthing**

PV array, DC equipment, Inverter, AC equipment and distribution wiring shall be earthed as required and it should be as per IS standards.

**g) AC Distribution panel:**

One AC distribution panel with two compartments (incoming & outgoing) shall be provided at Sub-Station to feed the supply to two feeders. The AC Distribution panels should consist (in each compartment) of SFU of appropriate rating, Bus-bar type distribution to LT panels, voltmeter with selector switch and two energy meters to monitor the energy generated by Solar Panels.

**h) Cable**

1. **Termination** : All DC and AC cables shall be terminated using suitable crimped cable lugs/sockets and screw type terminal strips. No soldered cable termination shall be accepted. Only terminal cable joints shall be accepted. No cable joint to join two cable ends shall be accepted.
2. **DC & AC Cable:** The DC and AC cable type shall be PVC/XLPE insulated, 1100V grade multi-stranded copper conductor. Colour coding shall be as per IS standards.
3. **Specification of cable:** The DC and AC cable size mentioned in BOQ is only indicative, shall be selected to maintain losses within specified limits over the entire lengths of the cables.
4. **Cable Laying** : DC and AC cabling between inverter and distribution boxes shall be secured with conduits (HDPE conduits for copper cable and cable tray for Aluminium cable). All cable trays shall be powder coated steel or GI or equivalent.

## Section VIII: Quality Control Requirements.

### a) Standards and Compliance

1	IEC 60364-7-712 - Electrical Installations of Buildings	Requirements for Solar PV power supply systems.
2	IEC 61727 or similar	Utility Interface Standard for PV power plants > 10 kW.
3	IEC 62103, 62109 and 62040 (UL 1741)	Safety of Static Inverters – Mechanical and Electrical safety aspects.
4	IEC 62116	Testing procedure of Islanding Prevention Methods for Utility-Interactive PV Inverters.
5	PV Modules	IEC 61730- Safety qualification testing, IEC 61701 – Operation in corrosive atmosphere
6	IEC 61215	Crystalline Silicon PV Modules qualification
7	String/array junction boxes	IP65, Protection Class II, IEC 60439-1, 3.
8	Surge Protection Devices	Type 2, DC 1000V rated.
9	PV module/string/string combiner box interconnects	MC4 compatible. DC 1000V rated.
13	All DC and AC cables, conduits, cable trays, hardware	Relevant IS.
14	Earthing System	Relevant IS.
15	PV array support structure	Relevant IS

### b) The items supplied under this contract shall be of following make and standards

1)	PV Array	BHEL/ CEL/ REIL/ TATA BP/PHOTON or equivalent	IEC 61215/IS14286 standards
2)	Power Conditioning Unit	SMA/ SCHENIEDER-XENTREX/ SEMICRON/ ABB/ PPS / OPS/DB Electronics or any reputed brand	IEC 61683 / IS 61683 and IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std
3)	Cables	Finolex / Polycab / Havells / HPL or reputed make as per IS standards	IEC 60227 / IS 694 and IEC 60502 / IS 1554 (Pt. I & II)
4)	Switches/Circuit Breakers /Connectors Junction Boxes /Enclosures for Inverters/Charge Controllers/Luminaries	Reputed Make meeting IS standard	IEC 60947 part I,II, III / IS 60947 Part I,II,III and EN 50521 IP 65(for outdoor)/ IP 21(for indoor) as per IEC 529

## Section IX: Qualification/ Eligibility Criteria

### I. Financial Status:

- a) Average Annual turnover of the bidder during last three years ending 31/03/2017 should be more than Rs. 76.20 lakhs and it should be reflected in audited financial report for the said period otherwise should be certified by Chartered Accountant.
- b) Bidders should not have suffered any financial loss for more than one year during last three years ending 31/03/2017.
- c) The net worth of the firm should not have eroded by more than 30% during the last three years ending 31/03/2017.

All financial standings data like P/L accounts, Balance sheets, etc. should be certified by Chartered Accountants(CA).

### II. Experience:

- a) The solar panels proposed for this project shall be produced / assembled in India.
- b) Contractor should have completed similar works during last seven years ending 30/06/2017 in either of the following categories,

Three similar completed works costing not less than the amount equal to 101.60 lakhs.

Or

Two similar completed works costing not less than the amount equal to 127 lakhs.

Or

One similar completed work costing not less than the amount equal to 203.20 lakhs.

III. Copies of Completion Certificates / Statement/work order executed shall be submitted.

IV. Declaration regarding Non- blacklisting and Confidentiality statement as per Annexure "A" to be duly signed & submitted.

**Note : "Similar works means Supply, Erection & Commissioning of Solar power plant of 300KWp and above "**



## Section X: Tender Form

Date .....

To  
The General Manager,  
BRBNMPL,  
Note Mudran Nagar,  
Mysuru – 570 003

Ref: Your Tender document No.: 093/MYS/MAINT(U)/2017-18 dated 01/12/2017

We, the undersigned have examined the above mentioned tender enquiry document, including amendment No. -----, dated \_\_\_\_\_ (if any), the receipt of which is hereby confirmed. We now offer to supply and deliver ..... (Description of goods and services) in conformity with your above referred document for the sum (total tender amount in figures and words), as shown in the price schedule(s), attached herewith and made part of this tender.

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

We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of GCC clause 6, read with modification, if any, in Section V — "Special Conditions of Contract", for due performance of the contract.

We agree to keep our tender valid for acceptance for a period upto as required in the GIT clause 19, read with modification, if any in Section-III — "Special Instructions to Tenderers" or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender upto the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_  
For & on behalf of

(Signature with date)

(Name and designation)  
Duly authorized to sign tender for and on behalf of

.....

## Section XI: Price Schedule

From

To  
The General Manager  
BRBNMPL,  
Mysuru -570 003

Sub : Technical bid for Design, Supply, Installation, Testing, Commissioning of 350KWp + 40 KWp Solar Photovoltaic Power Plant in BRBNMPL, Mysuru

Reference : Your Tender No.: 093/MYS/MAINT(U)/2017-18 dated 01/12/2017

We have received your tender enquiry cited and are pleased to enclose the following as our commercial bid for your kind consideration.

S. No	Description	Unit	Qty	Rate in Rs.	GST @ %	GST amount in Rs.	Total Amount in Rs.
			A	B	C	D	E=(A*B)+D
1	Solar PV module - 310 Wp each, for a total capacity of 350 KWp + 40 KWp as per specifications including inverters , mounting structure & PVC cu cable of required length, 4 core, 25 sq. mm from array to inverter etc..., as per BOQ(Section VII) (Schedule of items Sl.no. 1.1, 1.2, 1.3, 1.4)	set	1				
2	Supply and laying of XLPE Aluminium cable of suitable size (Inverter to L T Junction Box), 3 ½ core, 240 sq. mm	Mts	90 x 1 run				
3	Supply and laying of XLPE Armoured Aluminium cable of suitable size (L T Junction box to AC DB Panel), size: 3 ½ core, 240 sq. mm	Mts	1650 x 1 run				
4	Supply and laying of XLPE Armoured Aluminium cable of suitable size (AC DB to BRBNMPL LT panel) size: 3 ½ core, 240 sq. mm	Mts	320 x 1 run				
5	AC Distribution panel (two compartments) and each compartment consisting of SFU of appropriate rating, Bus-bar type distribution to LT panels, voltmeter with selector switch and one energy meters to monitor the energy generated by Solar Panels.	Set	4				
6	Lightning Arresters	Set	2				
7	Earthing protection system	Set	4				

8	All miscellaneous works, cable terminations, control boxes, wiring works and all other related works as per BOQ (Section VII) (Schedule of items Sl.no. 1.10, 1.11, 1.12, 1.15, 1.16)	lot	1				
9	Installation, Erection, and Commissioning charges	Lump sum					
	Less Subsidy						
<b>GRAND TOTAL :</b>							

Total Amount (in words): Rupees \_\_\_\_\_ only

We confirm that we will abide by all the tender terms and conditions and we do not have any counter conditions.

Thanking you,  
Yours faithfully,

Seal

( )

Name and Signature with Date

Note :

- i) Price with condition(s) shall be liable for rejection.
- ii) Price should be quoted exactly as per the format.
- iii) Price quoted should be all inclusive.
- iv) Conditional discount/ rebate etc. shall not be considered. In case, discount is offered that should be adjusted in the price and net price should be quoted.
- v) Above mentioned quantity is estimated only and payment shall be made based on the actual quantity used/quantity of work done.
- vi) The GST shall be mentioned as per the prevailing rates on the basic rate quoted. Any error by the bidder in quoting the GST rate will be corrected and total amount will be arrived for comparison.

## Section XII –QUESTIONNAIRE

We have received your Tender enquiry cited and we are pleased to enclose the following as our technical bid for your kind consideration.

1. Our company's profile.

Sr No	Status of Firm	Local/Central GST (Copy Enclosed)	Income Tax PAN No(Copy Enclosed)	Banker & their Address	NSIC or DGS&D

2. Documents in support of eligibility criteria :

a) **Financial Soundness**

Sl. No	Description	2014-15	2015-16	2016-17
1	Annual Turnover			
2	Net Profit			
3	Net worth of the firm			

(To be filled by tenderer. Please don't write like "attached" or "refer")

b) **Experience:**

Sl. No	Company Name	Work Order No. & Date	Details of work	Order value	Date of completion
1					
2					
3					
4					
5					

(To be filled by tenderer. Please don't write like "attached" or "refer")

**Note: Please fill the details of the documentary proofs enclosed in the above tables**

- We confirm that we possess the necessary technical competence and financial resources as mentioned in Section -IX of this tender document, to ensure supply of the tendered item, as per your specifications and delivery schedule. Necessary documents like copies of Work orders, P/L Accounts, Balance Sheets are enclosed herewith.
- We have never been blacklisted /debarred by BRBNMPL.
- We confirm having been in the business continuously for the last three years. (documentary proof attached)

- We have also enclosed herewith DD No. \_\_\_\_\_ for Rs. \_\_\_\_\_ as EMD against this tender.
3. We confirm that we have quoted exactly for the tendered product as per your specifications given in Section VII.
  4. We confirm that the Price bid is quoted exactly as per your format and is inclusive of material, labour and all statutory levies, duties, laying, freight, handling, loading, unloading charges, delivery at your Press.
  5. We confirm that there would not be any price escalation during the supply period.
  6. We confirm that we will abide by all the tender terms & conditions and we do not have any counter conditions. As required, we enclose herewith the complete set of copy of tender documents duly signed by us as a token of our acceptance.
  7. We also confirm that the undersigned is duly authorized and have the competence to sign the contract for and on behalf of the firm.

Thanking you,  
Yours faithfully,

**Seal**

( )  
Name  
Signature with date.

Note: Copies of applicable Documents are attached herewith.

## CHECK LIST

(Please fill this check list and attach with technical bid)

Sl.No	Description	Enclosed	Remarks
1	DD for Rs.500.00 as Tender fee	Yes/No	
2	DD for Rs.5,08,000.00 as EMD	Yes/No	
3	Tender Document Section I to Section XVII and Section XX duly sealed and signed along with Annexure-A	Yes/No	
4	Technical Bid –Section XII (Duly filled)	Yes/No	
5	Purchase order /Work order copy or completion certificate as proof of experience	Yes/No	
6	Chartered Accountant certificate /PL statements certified by chartered Account as proof for Financial Soundness (shall highlight Turnover, Networth and Profit).	Yes/No	
7	Certificate as per Annexure-A	Yes/No	
12	PAN Card copy	Yes/No	
13	Copy of GST registration certificate	Yes/No	

**Note: Please don't enclose the papers like Corporate Profile, Introduction about Sales and service etc.**

**Section XIV: Manufacturer's Authorization Form**

To

.....

.....

(Name and address of BRBNMPL)

Dear Sirs,

Ref. Your Tender document No ..... dated .....

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

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

We also hereby extend our full warranty, as applicable as per clause 16 of the General Conditions of Contract read with modification, if any, in the Special Conditions of Contract for the goods and services offered for supply by the above firm against this tender document.

Yours faithfully,

.....

.....

[Signature with date, name and designation]

for and on behalf of Messrs  
(Name & address of the manufacturers]

Note: This letter of authorisation should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

**Strike off whichever not applicable as above**

**To Whomsoever It May Concern**

This is to confirm that We M/s .....have not been blacklisted / debarred by BRBNMPL / Government of India in past 5 years.

Dated this .....day of .....

For & on behalf of

(Seal & signature with date)

(Name and Designation)

Duly authorized to Sign tender

( To be filled, signed & stamped and submitted along with Techno-commercial bid)

**Confidentiality Statement**

“The information, which is contained in this document will not, in whole or in part be reproduced, transferred to other documents/ electronic media or disclosed to others without written consent of BRBNMPL.” We shall also undertake to maintain secrecy, exclusivity and confidentiality of the high security currency printing environment of BRBNMPL.

Dated this .....day of .....

For & on behalf of

(Seal & signature with date)

(Name and Designation)

Duly authorized to Sign tender