

**Bid Specifications for
Design, Supply, Installation, Testing & Commissioning of 445 nos. LED Based Solar High Mast Lighting System
Including 5 years Comprehensive Maintenance Contract (CMC) at Public Places & Government Campuses in
the state of Jharkhand**

**(JREDA)
Government of Jharkhand**

Tender Reference No.: 18/JREDA/SHMLS/22-23



Jharkhand Renewable Energy Development Agency (JREDA)
3rd Floor, S.L.D.C. Building, Kusai Colony, Doranda, Ranchi-834502.
Ph.: 0651-2491161, Fax: 0651-2491165,
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Govt. of Jharkhand
Energy Department
Jharkhand Renewable Energy Development Agency (JREDA)

3rd Floor, S.L.D.C. Building, Kusai Colony, Doranda, Ranchi-834002.

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e-Procurement Notice

Tender reference no.: 18/JREDA/SHMLS/22-23

Dated: 13.09.2022

1	Name of the work	Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.
2	Total quantity (Nos.)	445 Nos.
3	Estimated cost (Rs.)	10,00,00,000/-
4	Period of Completion	04 (Four) Months
5	Contract Period	05 (Five) Years
6	Date of publication of NIT on website: http://jharkhandtenders.gov.in	19.09.2022 (Monday)
7	Date & time of Pre-bid meeting	01.10.2022 (Saturday) at 2.00 P.M.
8	Last date & time for receipt of online bids	10.10.2022 (Monday) upto 05:00 PM
9	Submission of original copies of Bid fee & EMD (Offline)	10.10.2022 and 11.10.2022 up to 5.00 P.M.
10	Technical Bid Opening Date	12.10.2022 (Wednesday) at 3.00 P.M.
11	Name & address of office inviting tender	Director, Jharkhand Renewable Energy Development Agency(JREDA) 3 rd Floor, SLDC Building, Kusai, Doranda, Ranchi- 834002 (Jharkhand)
12	Contact no. of procurement officer	0651-2491163/67/61/7903935514
13	Helpline no. of e-procurement	0651-2491163/67/61

Any corrigendum/addendum can be seen on website: <http://jharkhandtenders.gov.in> & www.jreda.com.

Further details can be seen on website: <http://jharkhandtenders.gov.in> & www.jreda.com

Sd/-
Director,
JREDA, Ranchi

Section -1**List of Important dates & details of Bids**

1.	Name of work	Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.
2	Tender reference no.	18/JREDA/SHMLS/22-23
3	Period of contract	05 (Five) Years
4	Work completion period	04 (Four) Months
5	Mode of submission of tender	Online through www.jharkhandtenders.gov.in
6	Tentative Quantity	445 Nos. The quantity mentioned above is tentative and subject to increase or decrease depending on the actual requirement at the time of placing order and resources available. The estimated cost is about Rs. 10.00 Crores
7	Maximum/Minimum lot size	Maximum: 80 Nos. Minimum: 20 Nos. No bidder shall submit bid for quantity less than minimum lot size & more than maximum lot size.
8	Cost of Bid document (non-refundable)	❖ Rs.10, 000/- (Rupees Ten Thousand only) for General Bidder. ❖ Rs. Nil for MSMEs of Jharkhand.
9	Earnest Money Deposit (EMD)	❖ For General Bidder: Rs.90,000/- (Rupees Ninety Thousand Only) for the lot size of 20 Nos. The bidders quoting for higher capacities are required to submit EMD in the same proportion. ❖ For MSME of Jharkhand: Nil.
10	Date of publication of NIT on website: http://jharkhandtenders.gov.in	19.09.2022 (Monday)
11	Date & time of Pre-bid meeting	01.10.2022 (Saturday) at 2.00 P.M.
12	Period of downloading of bidding documents	Start date: 20.09.2022 Time: 10.00 AM
		End date: 10.10.2022 Time: 05.00 PM
13	Bid online submission	Start date: 01.10.2022 Time: 10.00 AM
		End date: 10.10.2022 Time: 05.00 PM
14	Submission of original copies of Bid fee & EMD (Offline)	10.10.2022 and 11.10.2022 up to 5.00 P.M.
15	Technical bid opening date	12.10.2022 (Wednesday) at 3.00 P.M.
16	Authority inviting bids	Director, Jharkhand Renewable Energy Development Agency (JREDA)
17	Address	Jharkhand Renewable Energy Development Agency (JREDA) 3 rd Floor, SLDC Building, Kusai, Doranda, Ranchi- 834502. Ph. No: Website: www.jreda.com Email: info@jreda.com

Note: The tender fee and Earnest Money Deposit (EMD) in original must be submitted between all working days from **10.10.2022 and 11.10.2022** up to 5.00 P.M. If tender fee and EMD are not received before mentioned due date and time, tender shall be considered invalid. **MSMEs seeking exemption from Bid fee & EMD, shall submit documentary evidence supporting the exemption.**

Place for receiving tender fee & EMD:

Jharkhand Renewable Energy Development Agency (JREDA), 3rd Floor, SLDC Building, Kusai, Doranda, Ranchi-834502.

Section -2

Instructions to Bidders

A. Detailed instructions & documents to be furnished for online bidding

1. The guidelines to submit bid online can be downloaded from website <http://jharkhandtenders.gov.in>.
2. The interested bidders can download the bid from the website "<http://jharkhandtenders.gov.in>".
3. To participate in bidding process, bidders have to get 'Digital Signature Certificate (DSC)' as per Information Technology Act-2000 to participate in online bidding. This certificate will be required for digitally signing the bid. Bidders can get above mention digital signature certificate from any approved vendors (CCA). Bidders, who already possess valid Digital Certificates, need not to procure new Digital Certificate.
4. The bidders have to submit their bids online in electronic format with digital Signature. The bids without digital signature will not be accepted. No proposal will be accepted in physical form.
5. Bids will be opened online as per time schedule mentioned in section 1
6. Bidders should get ready with the scanned copies of cost of documents & EMD as specified in the tenderdocument. Before submission of online bids, bidders must ensure that scanned copy of all the necessarydocuments have been attached with bid.
7. Bidder have to produce the original Demand Draft towards tender fee (Bid fee) & Demand Draft/Bank Guarantee as EMD in approved form to the authority "Director, Jharkhand Renewable Energy Development Agency, Ranchi" on the date & time as mentioned in the NIT failing which bidder will be disqualified. The details of cost of documents, EMD specified in the tender documents should be the same as submitted online (scanned copies) otherwise tender will summarily be rejected.
8. Uploaded documents of valid successful bidders will be verified with the original before signing the agreement. The valid successful bidder has to provide the originals to the concerned authority. The department will not be responsible for delay in online submission due to any reason.
9. All the required information for bid must be filled and submitted online. If the bid is not found to be uploaded online in the website (<http://Jharkhandtenders.gov.in>), bid shall be rejected even though the bidder/s have submitted Bid fee & EMD. No hard copy is required to be submitted in the office of JREDA except original Bid fee & EMD.
10. The quoted rates should be in line with "Jharkhand P.W.D. Code, which is implemented by vide Sankalp letter no. 2146(s) Dated 09/09/2020"
11. Other details can be seen in the bidding documents.

B. Details of documents to be furnished for online bidding

1. Scanned copies of the following documents to be up-loaded in pdf format on the website <http://Jharkhandtenders.gov.in>.
 - i. D. D. towards Tender fee.
 - ii. Duly pledged EMD (BG/DD/FDR, in case of BG as per Annexure 10).
 - iii. GST certificate.
 - iv. PAN Card.
 - v. Firm's registration certificate/ Registration certificate of MSMEs of Jharkhand (Certificate issued by Industry Dept. or MNRE for system/components manufacturing)
 - vi. Test certificate (IEC/BIS) of Solar PV Module to be used in Solar High Mast Lighting System.
 - vii. Test certificate of Lithium Ferro Phosphate Battery to be used in Solar High Mast Lighting System.
 - viii. Test certificate of Pole should be submitted in Solar High Mast Lighting System.
 - ix. Test certificate of Luminaries should be submitted in Solar High Mast Lighting System.
 - x. Audited financial Statements (i.e., Balance sheet & statement of Profit or Loss) for the last 3 financial years (31-03-2019, 31-03-2020 and 31-03-2021) as certified by Chartered Accountant.
 - xi. ITR for the assessment year 2019-20, 2020-21 & 2021-22.
 - xii. Manufacturer's test certificate of LED & LED luminaire (LM80 & LM79) from NABL accredited test center.
 - xiii. Undertaking of Bidder that he is able to invest minimum of cash up to 10% as defined in ITB.

1. Scanned Copies of the Annexure as per the enclosed formats should be uploaded after converting the same to .pdf format.

- i. Annexure-1: Covering letter.
 - ii. Annexure-2: Checklist for Technical Bid.
 - iii. Annexure-3: Information about the bidding firm.
 - iv. Annexure-4: Declaration by the bidder.
 - v. Annexure-5: Annual Turnover.
 - vi. Annexure-6: Net Worth certificate.
 - vii. Annexure-7: Format for power of attorney for signing of bid.
 - viii. Annexure-8: Proof of supply/execution of Solar High Mast Lighting System in any SNA/Govt. organization/PSU in the last seven years. Attach copy of Work Order/Purchase Order/Performance certificate /completion certificate. Successful Bidders must submit Performance Certificate/Completion Certificate before allotment of Work Order.
 - ix. Annexure-11: Contact Person for the NIB
2. Duly filled in & digitally signed Price Bid (.xls and .pdf).
 3. Uploaded documents of valid successful bidders will be verified with the original before signing the agreement. The valid successful bidder has to provide the originals to the concerned authority on receipt of such letter, which will be sent through registered post and e-mail.
 4. NIB is not to be uploaded by the bidder. The bidder has to give affidavit stating agree / disagree on the conditions in the NIB. The bidders, who disagree on the conditions of NIB, cannot participate in the tender.

Section-3

Notice Inviting Bid

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

Preamble:

As part of Solar Photovoltaic Programme, JREDA invites bid for **“Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.”** for short listing of experienced & eligible bidders to whom work shall be allocated for successful execution of the project in a defined time frame. **No bidders shall submit bid for quantity less than minimum lot size and more than maximum lot size.**

Bidders claiming benefit of Micro & Small Enterprises (MSEs) of Jharkhand: -

- Should be registered with Ministry of Micro, Small and Medium Enterprises, GoI duly verified, whether unit is existing/ functional and doing regular production by GM, DIC/ MD, Industrial Area Development Authorities/ Director, Industries, GOJ”.
- Should have date of Production (DOP) certificate by GM, DIC/ MD, Industrial Area Development Authority/ Director, Industries, GoJ.
- **Should be manufacturer of any of the component specific to tender.**
- MSEs of Jharkhand State availing preferential treatment should fulfill all the criteria as per Clause-3.0 (Applicability) of Jharkhand Procurement Policy 2014 and its amendment thereof and shall submit an undertaking with respect to (i) to (iv) of Clause 3.0 including a categorical statement that the products/services being supplied to JREDA has been manufactured/created by the unit located in Jharkhand only, giving details of batch no./date or any other identifiable tag as per prevalent established practice.

And

- Should be manufacturer of any of the major component of the project & the Unit must be established under Jharkhand Territory.

- i. The offered PV Modules should be as per **IEC61215 edition II / BIS 14286** from an NABL or IECQ accredited laboratory standards having test certificates prescribed by MNRE. The valid test certificate with authorization letter of the manufacturer should be uploaded as annexure. The offered PV Modules should be Crystalline Silicon PV Modules as per IEC 61215 Standards or IS14286 and having test certificates prescribed by MNRE. In addition, the modules must conform to IEC 61730 part I – requirement for construction and part – II requirement for testing, for safety qualification or equivalent IS. The offered modules shall be of standard make; specifications of any reputed brand approved by MNRE having test certificates issued from **MNRE specified** test laboratories.
- ii. Test certificate of different System (Luminaries, Battery, Electronics Control Driver and Module) from the authorize test center from MNRE/NABL accredited Laboratories.
- iii. Batteries should fulfil the requirement as per specification given in the Technical Specification of the Bid. Capacity Test, Charge/Discharge efficiency, Self-Discharge should be as per MNRE requirements and valid test reports with authorization letter of the manufacturer should be uploaded as annexure. The certificate should be in a form of an undertaking letter from the manufacturer complying all the technical specifications of battery. The offered batteries shall be as per BIS of any reputed brand approved.
- iv. The Participant should have valid GST and PAN.
- v. The Bidder should confirm that they have the resources and capability to supply the offered quantity within the scheduled period in the form of an undertaking.
- vi. Bidders have to download the bid document from website (www.jharkhandtenders.gov.in) and submit the scan copy of the cost of the bid document to be submitted in shape of demand draft of Rs. **10,000/-** (Rupees Ten thousand only) in favour of “Director, JREDA” on any Indian Nationalized Bank/Scheduled Bank, payable at “Ranchi”. The tender fee in original must be submitted from **10.10.2022 and 11.10.2022** up to 5.00 P.M. in the office of JREDA.
- vii. Bidders should submit in **Part – I (Technical Bid)** the earnest money in the form of Bank Guarantee/Demand Draft of requisite value as mentioned in “Section-1 (List of Important dates & details of Bids)”. The Bank Guarantee/DD/FDR shall be made in favour of “**Director, JREDA**” payable at Ranchi from any Indian Nationalized bank/Scheduled bank. The bank guarantee shall remain **valid for 12 months**. Only Original Bank Guarantee shall be accepted. The EMD in original must be submitted from **10.10.2022 and 11.10.2022** up to 5.00 P.M. in the office of JREDA.

(II) **Award of Work and Empanelment Procedure after opening of Financial Bid:**

- i. The bidders who are found to be successful in technical bid and accepts the lowest rate received in the bid shall be empaneled for solar high mast light work for 1 year.
- ii. The lowest rate i.e., the L1 rate received for rate of unit quantity quoted by the bidders would be the appropriate rate for awarding the work.
- iii. Allocation of the quantity to MSME registered in Jharkhand will be made as per the provisions of Jharkhand Procurement Policy 2014. The MSME should be functional & having running

production unit in Jharkhand and should fulfill all the criteria as fixed in Jharkhand Procurement Policy 2014.

- iv.** JREDA will allot the work to L1 bidder at L1 rate on the basis of quoted quantity & bid capacity, whichever is lower.
- v.** Other bidders who accept the L1 rate shall be empaneled and quantity shall be allocated on pro-rata basis of their bid capacity evaluated in their bid.
- vi.** The successful bidders, who either fail to enter into agreements for the allocated quantity or fail to execute the work as per the work order, their EMD/Security deposit may be forfeited and may be blacklisted under intimation to MNRE and other Nodal Agencies in the Country.
- vii.** Quantity of SHMLS (445 nos.) shown in the bid is only indicative which may increase or decrease as per the requirement of JREDA.

Section-4**INSTRUCTIONS TO BIDDERS
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2. Source of Funds	19. Deadline for Submission of Bids
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9. Clarification of Bidding Documents	26. Preference for Domestic Bidders
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17. Alternative Proposals by Bidders	34. Breakdown / corrective Maintenance:
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	36. Corrupt or Fraudulent Practices
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Instructions to Bidders (ITB)

General

1. Scope of Bid

- 1.1 The JREDA invites bids for the work as described in these documents and referred to as "the works". The name and identification number of the works is provided in the Notice Inviting Bid.
- 1.2 The successful Bidder will be expected to complete the Works by the Intended Completion Date specified in the Part (I) - General Conditions of Contract.
- 1.3 Throughout these documents, the terms "bid" and "tender" and their derivatives (bidder/ tenderer, bid/tender, bidding/ tendering) are synonymous.

2. Source of Funds

- 2.1 The JREDA has decided to undertake the works of **“Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.”** through funds from the Government of Jharkhand to be implemented through JREDA.

3. Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders as defined in the Notice Inviting Bid.
- 3.2 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the works.

4. Qualification of the Bidder

- 4.1 All bidders shall provide in Section 3, Forms of Bid and Qualification information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.
- 4.2 All bidders shall include the following information and documents with their bids in Section 3, Qualification Information unless otherwise stated in the Notice Inviting Bid/ITB.
- a) Copies of original documents defining the constitution or legal status, place of registration, and principal place of business.
 - b) Copy of written power of attorney of the signatory of the Bid for bidding.
 - c) Experience in works of a similar nature and size for each of the last seven years with certificates from the concerned officer or competent authority.
 - d) Audited financial Statements (i.e., Balance sheet & statement of Profit or Loss) for the last 3 financial years (31-03-2019, 31-03-2020 and 31-03-2021) as certified by Chartered Accountant.
 - e) ITR for the assessment year 2019-20, 2020-21 & 2021-22.
 - f) Authority to seek references from the Bidder's bankers;

- g) Information regarding any litigation or arbitration during the last seven years in which the Bidder is involved, the parties concerned, the disputed amount, and the matter;

4.3 Bids from joint venture are not allowed.

4.4 . To qualify for award of the Contract, each bidder should meet the following criteria:

i. Turnover Requirement:

For General Bidder: For General Bidders: Average Annual Turnover during last three years should be 30% of estimated cost of minimum lot size and thereafter in same proportion for higher quantity.

For MSME Bidders of Jharkhand: Average Annual Turnover during last three years should be at least 10% of estimated cost of minimum lot size and thereafter in same proportion for higher quantity.

The certificate should be issued by CA who has performed audit of accounts with UID no. as per the Performa given at Annexure-5

New-MSME is defined as MSME which have not completed 3 financial years from the date of establishment of manufacturing unit such as Module/ Cells/ Batteries / Luminaries.

A: - Unit has not completed 1 Year – Financial Soundness Certificate issued from Bank is required not less than 10% of Project Cost / Quoted Quantity Cost.

B: - Unit has not completed 2 Year – should have annual turnover at least 10% of estimated cost / Quoted Quantity Cost.

C: - Unit has not completed 3 Year - should have Average Annual Turnover of last 2 years equal to 10% of estimated cost / Quoted Quantity Cost.

ii. Net worth Requirement:

For General/MSME of Jharkhand bidder: Bidder should have Positive Net Worth.

Net worth certificate should be issued by CA with UID no. as per the Performa given at Annexure-6

iii. Experience Requirement:

For General Bidder:

Experience of having successfully completed similar works in any SNA / Govt. Organization / PSU during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following: -

- a. **Three similar completed works costing not less than the amount equal to 40% of the estimated Project cost/ Quoted quantity cost.**

Or

b. Two similar completed works costing not less than the amount equal to 50% of the estimated Project cost/ Quoted quantity cost.

Or

c. One similar completed work costing not less than the amount equal to 80% of the estimated Project cost/ Quoted quantity.

Note: - Project wise similar Work should be defined in tender documents

For MSME of Jharkhand:

One similar completed work costing not less than the amount equal to 10% of the estimated Project cost/ Quoted quantity from PSU/Govt. Organization/ SNA in last seven years.

New-MSME of Jharkhand shall be exempted from the Experience requirement

The copies of work orders and work completion certificate issued by procuring authorities indicating its successful execution and performance certificate must be enclosed as per the Annexure 8.

Earnest Money Deposit (EMD):

For General Bidders: 2% of Project cost or Quoted quantity as applicable in the form of DD/BG/FDR.

For MSME of Jharkhand: Nil

(a) Each bidder must produce:

- i) PAN.
- ii) An affidavit that the information furnished with the bid documents is correct in all respects; and
- iii) Such other certificates as defined in the Notice Inviting Bid. Failure to produce the certificates shall make the bid non-responsive.

4.4.C Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- i) made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or
- ii) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history and financial failures.
- iii) Participated in the previous bidding for the same work and had quoted unreasonably high or low bid prices and could not submit rational justification for it to JREDA.

5. One Bid per Bidder

5.1 Each Bidder shall submit only one Bid for one work. A Bidder who submits more than one Bid will be disqualified.

6. Cost of Bidding

6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the JREDA will, in no case, be responsible or liable for those costs.

7. Site Visit

7.1 Site will be allocated to successful bidders as per the demand received, which may be across the State. The bidder shall have no claim regarding economy of scale, choice of district/region in the State. However, bidder may visit site after allocation of site.

B. BIDDING DOCUMENTS:

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10 of ITB.

- i. Notice Inviting Tender
- ii. Instructions to Bidders
- iii. Qualification Information
- iv. Conditions of Contract
- v. Specifications
- vi. Bill of Quantities
- vii. Form of Bid
- viii. Form of Bank Guarantee.

ix. Annexures

8.2 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms and specifications, bill of quantities, forms in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 23 hereof, bids, which are not substantially responsive to the requirements of the Bid Documents, shall be rejected.

9. Clarification on Bid Documents and Pre-bid Meeting:

9.1 A prospective Bidder requiring any clarification of the bid documents may inform to the JREDA in writing at the JREDA's address indicated in the Notice Inviting Tenders. JREDA's response will be uploaded in form of corrigendum on our website www.jreda.com.

9.2 Pre-bid meeting will be held on **28.09.2022 (Wednesday)** at 2.00 P.M. in the Conference Hall of JREDA. The bidder or his authorized representative may attend the meeting.

9.3 The purpose of such a meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.4 Pre-BID queries are accepted by e-mail at info@jreda.com within two days after the Pre-BID meeting.

9.5 Any modifications of the bid document listed in Clause 8.1 of ITB, which may become necessary as a result of the pre-bid meeting shall be made by the JREDA exclusively through the issue of an Addendum/Corrigendum pursuant to Clause 10 of ITB on website.

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the JREDA may modify the bidding documents by issuing addenda/corrigendum.

10.2 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the JREDA shall extend, if necessary, the deadline for submission of bids, in accordance with Clause 19.2 of ITB.

C. Preparation of Bids

11. Language of Bid

11.1 All documents relating to the Bid shall be in the language specified in the Notice Inviting Bid.

12. Documents Comprising the Bid

A. Technical Bid – (Fee/Pre-Qualification/Technical Cover)

1) EMD & Tender Fee

- a) Scanned Copy of Demand draft drawn in favour of “DIRECTOR, JREDA”, payable at Ranchi towards Cost of Tender Fee and Earnest Money Deposit as specified in the Notice Inviting Bid.

2) Technical Details & Declaration

- a) Proposed work Programme (work method, time schedule and financial flow), description, and charts as necessary (Duly to be signed digitally) to comply with the requirement of the Bidding Document.
- b) Scanned copy of an Affidavit by the Bidder that he/she has accepted the S.B.D.

3) Technical Details of documents

Scanned copies/Prescribed Formats of Documents to be attached in “My Document” in .pdf format file duly digitally signed by the bidder.

- a) PAN Card
- b) GST certificate.
- c) Proof of Work Order/completion of similar works during the last 7 years and list of similar works in hand in the prescribed formats duly signed by the competent authority of the issuing Department.
- d) List of works for which bids already submitted.
- e) Audited financial Statements (i.e., Balance sheet & statement of Profit or Loss) for the last 3 financial years (31-03-2019, 31-03-2020 and 31-03-2021) as certified by Chartered Accountant.
- f) ITR for the assessment year 2019-20, 2020-21 & 2021-22.
- g) Annual Turnover certificate as certified by Chartered Accountant.
- h) Net worth certificate as certified by Chartered Accountant.
- i) List of current litigant cases in which the bidder is involved.
- j) An affidavit for non-engagement of related persons.
- k) Proof of test certificates of Module, Luminaries, batteries and Controller latest test certificate should confirm as per MNRE specifications/Standards. The valid test certificate should be submitted along with bid.
- l) Authorized address & contact numbers of the bidder as per instruction in the Notice Inviting Bid duly digitally signed.
- m) Undertaking of Bidder that he is able to invest minimum of cash up to 10% as defined in ITB.
- n) Undertaking for validity of bid for 180 days.

B – Financial Bid – (Finance Cover)

- i) Duly Quoted & digitally signed Bill of Quantity (BOQ) in the file supplied by JREDA in.xls.
- ii) Declaration by Bidder in the format Section – 6 form of Bid in .pdf format.

NOTE: - a) All the documents should be digitally signed.

12.2 The following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section Particulars

- i. Notice inviting Tender
- ii. Instruction to the bidders
- iii. Conditions of Contract
- iv. Contract Data
- v. Specifications

13. Bid Prices

13.1 The Contract shall be for the whole Works, as described in Clause 1.1 of ITB.

13.2 The Bidder shall adopt the Item Rate Method as specified in the Notice Inviting Bid only the same option is allowed to all the Bidders.

13.3 All duties, taxes, royalties and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the rates, prices, and total Bid price submitted by the Bidder.

13.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment.

13.5 Tenderers should quote their rates considering wide variation of site conditions, variation in price of different components during the year 2020-21 and keeping the quantum and quality of work in mind. If JREDA anticipates that rate is abnormally low or high, tender may be cancelled.

14. Currencies of Bid and Payment

14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees (INR).

15. Bid Validity

15.1 Bids shall remain valid for a period of 180 (One hundred Eighty) days after the deadline date for bid submission specified in Clause 19 of ITB. A bid valid for a shorter period shall be rejected by the JREDA as non-responsive.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the JREDA may request to the bidders for extension of the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his Earnest Money. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his earnest money for a period of the extension, and in compliance with Clause 16 of ITB in all respects.

16. Earnest Money

16.1 The Bidder shall furnish, as part of the Bid, Earnest Money, in the amount specified in the Notice Inviting Bid.

16.2 The Earnest Money shall, at the Bidder's option, be in the form of Bank Guarantee/Demand Draft/FDR of ascheduled commercial bank, issued in favour of the name given in the Notice Inviting Bid. The Bank Guaranteeshall be valid for 12 months or more after the last date of receipt of bids.

16.3 Any bid not accompanied by an acceptable Earnest Money, unless exempted in terms given in the Notice Inviting Bid, shall be rejected by the JREDA as nonresponsive.

16.4 The Earnest Money of unsuccessful bidders will be returned within 30 days of the end of the Bid validity period specified in Clause 15.1 of ITB.

16.5 The Earnest Money of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposit.

16.6 The Earnest Money may be forfeited:

- a) if the Bidder withdraws the Bid after bid opening during the period of Bid validity;
- b) in the case of a successful Bidder, if the Bidder fails within the specified time limit to sign the Agreement; and/or furnish the required Performance Security and Security Deposit.

17. Alternative Proposals by Bidders

17.1 Bidders shall submit offers that comply with the requirements of the bidding documents, including the Bill of Quantities and the basic technical design as indicated in the drawings and specifications. Alternative proposals will be rejected as non-responsive.

D. Submission of Bids

18. Sealing and Marking of Bids

18.1 The Bidder shall place the two separate files (File I) marked "Technical Bid" and "Financial Bid" (File – II). The file will have markings as follows:

Technical Bid: To be opened on (date and time of Technical Bid opening as per clause 20.1 of ITB.)

Financial Bid: The contents of the Technical and Financial Bids shall be as specified in clause 12.1 of ITB. All documents are to be signed digitally by the bidder.

18.2 The first and second files containing the Technical and Financial Bids shall a) be addressed to the JREDA at the address provided in the Notice Inviting Bid b) bear the name and identification number of the Contract as defined in clause 1.1 of ITB; and c) provide a warning not to open before the specified time and date for Bid opening as defined in clause 20.2 of ITB.

19. Deadline for Submission of Bids

19.1 Complete Bids (including Technical and Financial) must be received by the JREDA at the address specified in the Notice Inviting Bid not later than the date and time indicated in the Notice Inviting Bid.

19.2 The JREDA may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10.3 of ITB, in which case all rights and obligations of the JREDA and the bidders previously subject to the original deadline will then be subject to the new deadline.

E. Bid Opening and Evaluation

20. Bid Opening

20.1 The JREDA will open the bids received (except those received late). In the event of the specified date for the submission of bids being declared a holiday for JREDA, the Bids will be opened at the appointed time and location on the next working day.

20.2 The files containing the technical bid shall be opened. The document marked "cost of bidding document" will be opened first and if the cost of the bidding documents is not there, or incomplete, the remaining bid documents will not be opened, and bid will be rejected.

20.3 In all other cases, the amount of Earnest Money, forms and validity shall be announced. Thereafter, the bidders' names and such other details as the JREDA may consider appropriate, will be announced by the JREDA at the opening.

20.4 The JREDA will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Clause 20.3 of ITB Evaluation of the technical bids with respect to bid security, qualification information and other information furnished in Part-I of the bid in pursuant to Clause 12.3 of ITB, shall be taken up and completed and a list will be drawn up of the responsive bids whose financial bids are eligible for consideration.

20.5 The JREDA shall inform by email, the bidders, whose technical bids are found responsive, date, time

and place of opening as stated in the Notice Inviting Bid. In the event of the specified date being declared a holiday for the JREDA, the bids will be opened at the appointed time and location on the next working day through they or their representative, may attend the meeting of opening of financial bids.

- 20.6** At the time of the opening of the 'Financial Bid', the names of the bidders whose bids were found responsive in accordance with clause 20.5 of ITB will be announced. The financial bids of only these bidders will be considered to be opened. The remaining bids will be returned unopened to the bidders. The responsive bidders' names, the Bid prices, the total amount of each bid, and such other details as the JREDA may consider appropriate will be announced by the JREDA at the time of bid opening. Any Bid price which is not read out and recorded, will not be taken into account in Bid Evaluation.
- 20.7** The financial bids of the General bidders and Experienced MSME bidders will be opened.
- 20.8** The JREDA shall prepare the minutes of the opening of the Financial Bids.

21. Process to be Confidential

- 21.1** Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the JREDA's process of bidding or award decisions may result in the rejection of his Bid

22. Clarification of Bids and Contacting the JREDA

- 22.1** No Bidder shall contact the JREDA on any matter relating to its bid from the time of the bid opening to the time the contract is awarded.
- 22.2** Any attempt by the bidder to influence the JREDA's bid evaluation, by any means, bid evaluation, bid comparison or contract award decision may result in the rejection of his bid.

23. Examination of Bids and Determination of Responsiveness

- 23.1** During the detailed evaluation of "Technical Bids", the JREDA will determine whether each Bid (a) meets the eligibility criteria defined in Clauses 3 and 4; (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the bidding documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of

quantities, technical specifications and drawings.

23.2 A substantially responsive "Financial Bid" is one, which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one

(a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the bidding documents, the JREDA's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

23.3 If a "Financial Bid" is not substantially responsive, it will be rejected by the JREDA, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

24. Corrections of Errors

24.1 Bids determined to be substantially responsive, will be checked by the JREDA for any arithmetic errors. Errors will be corrected by the JREDA as follows:

- a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
- b) Where there is a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

24.2 The amount stated in the Bid will be adjusted by the JREDA in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid will be rejected, and the Earnest money shall be forfeited in accordance with Clause 16.6(b) of ITB.

25. Evaluation and Comparison of Bids

25.1 The JREDA will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 23 of ITB.

25.2 In evaluating the bids, the JREDA will determine for each Bid the evaluated Bid price by adjusting the Bid price by making correction, if any, for errors pursuant to Clause 24 of ITB.

25.3 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the JREDA may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation

of the price analyses, the JREDA may require that the amount of the performance security set forth in Clause 32 of ITB be increased at the expense of the successful Bidder to a level sufficient to protect the JREDA against financial loss in the event of default of the successful Bidder under the Contract. The amount of the increased performance security shall be decided at the sole discretion of the Employer, which shall be final, binding and conclusive on the bidder.

- 25.4** After its evaluation, the JREDA may require that the amount of the performance security set forth in Clause 30 be increased at the expense of the successful Bidder to a level sufficient to protect the JREDA against financial loss in the event of default of the successful Bidder under the Contract. The amount of the increased performance security shall be decided at the sole discretion of the JREDA, which shall be final, binding and conclusive on the bidder.

F. Award of Contract

26. Award Criteria

- 26.1** Subject to Clause 29 of ITB, the JREDA will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 3 of ITB, and (b) qualified in accordance with the provisions of Clause 4 of ITB; and as per clause 14 of Notice Inviting Bid (Section-3).

27. JREDA's Right to accept any Bid and to reject any or all Bids

- 27.1** Notwithstanding Clause 27 above, the JREDA reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the JREDA's action without any reason.

28. Notification of Award and Signing of Agreement

- 28.1** The bidder whose Bid has been accepted will be notified of the award by the JREDA prior to expiration of the Bid validity period by email and by registered letter. This letter (hereinafter and in the Part I - General Conditions of Contract called the "Letter of Acceptance") will state the sum that the JREDA will pay to the Contractor in consideration of the execution and completion of the Works (hereinafter and in the Contract called the "Contract Price").
- 28.2** The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 30.

28.3 The Agreement will incorporate NIT document, Work order & subsequent amendments between JREDA and the successful Bidder. It will be signed by the JREDA and the successful Bidder after the security deposit is submitted.

28.4 Upon the furnishing by the successful Bidder of the Performance Security, the JREDA will promptly notify the other Bidders that their Bids have been unsuccessful.

29. Security Deposit:

29.1 Successful General bidder shall submit a security deposit @10% of the allotted work order value in the form of DD/BG/FDR valid for one year on or before 15 days from issuing work order. If Bank Guarantee will not be submitted within stipulated period from the date of issue of work order, then JREDA shall cancel the work order.

29.2 For MSME of Jharkhand: Security Deposit should be @1% of Work Order Value applicable in the form of DD/BG/FDR.

29.3 The Security Deposit shall be refunded / released to the bidder after expiry of 60 days from the actual date of successful completion of work.

29.4 The Security Deposit will have to be maintained by the bidder with JREDA till the satisfactory completion of the work. If the work extends beyond the expiry date of Bank Guarantee, bidders shall submit fresh or extend the period of validity of Bank Guarantee as per the direction of JREDA, otherwise JREDA may terminate the work order and blacklist the contractor.

31. Performance Guarantee:

31.1 Successful General bidder shall submit a performance guarantee @5% of the allotted work order value in the form of Bank Guarantee/BG/FDR valid for five years on or before release of any payment.

31.2 Successful MSME bidders shall submit a Performance Guarantee @0.5% of the allotted work order value in the form of bank guarantee/BG/FDR before release of payment.

31.3 The Performance Guarantee will have to be maintained by the bidder with JREDA till the completion of warranty period.

31.4 The Security Deposit/Performance Guarantee shall be submitted in the form of bank guarantee in favour of "Director, JREDA" payable at Ranchi from any Indian Nationalized bank/Scheduled bank.

31.5 Non submission of Security Deposit/Performance Guarantee within the time frame, shall lead to forfeiture of EMD and cancellation of work order.

31.6 If Bidder/MSME unit fails to carry out the work allotted to him as per the provisions of the tender documents then such Bidder/MSME unit may be black listed for future awards of work.

32 Five Years Comprehensive Maintenance Contract (CMC):

32.1 The LED BASED SHML system contract price includes the provision of 5 years mandatory Comprehensive Maintenance Contract (CMC). To ensure long term sustainability of the system, the bidder must provide his representatives name, full address, mobile number and photographs to JREDA with one hard copy as well as the names and contact details of all technicians must also be provided. Failure to do shall invite penalty and action.

32.2 The Comprehensive Maintenance Contract shall include servicing & replacement guarantee for parts and components (such as battery, electronics, Inverter, PV modules and other hardware) of LED BASED SHML for five years from the date of installation. **PV modules shall be warranted for 25 years.** Battery should be warranted for a minimum life of 5 years. The date of CMC maintenance period shall begin on the date of actual commissioning of LED BASED SHML. It is mandatory for the contractor to carry out CMC regularly and submit report to JREDA quarterly. Failure to submit quarterly CMC reports timely shall invite penalty of **@ Rs. 1000/-** per week after the end of the one month of the ending of the quarter. If the successful bidder is found to be not doing CMC work continuously for two quarters, then bidders performance guarantee will be forfeited, work order shall be cancelled and bidder shall be blacklisted. **For carrying out effective and smooth maintenance of the Solar High Mast Lighting System, reasonable number of service person as well as spare parts must be deployed by the successful bidders after the commissioning of the systems.**

33 Preventive/Routine Maintenance:

This shall be done by the supplier/contractor at least once in every three months and shall include activities such as, cleaning and checking the health of the SPV system, cleaning of module surface, tightening of all electrical connections, regular checks to identify any leakage of current, changing of tilt angle of module mounting structure, cleaning & tightening of battery terminals and any other activity that may be required for proper functioning of the Solar High Mast Light. The maintenance record should be kept properly and to be submitted at JREDA office time to time. CMC documents should be certified by Beneficiary. The Comprehensive Maintenance Contract shall include servicing & replacement guarantee for parts and components (such as battery, electronics, PV modules and other hardware) of LED BASED SHML for five years from the date of installation. PV modules shall be warranted for 25 years. Battery should be warranted for a minimum life of 5 years.

The date of CMC maintenance period shall begin on the date of actual commissioning of LED BASED SHML. It is mandatory for the contractor to carry out CMC regularly and submit report to JREDA quarterly. After successful Commissioning of System, CMC report/Checklist/Maintenance schedule

should be submitted in JREDA and approve by JREDA representative.

Breakdown, Damage or Failure of Module/ Luminaries/Battery should be repair within 7 days. For carrying out effective and smooth maintenance of the Solar High Mast Lighting System, reasonable number of service centers must be established by the successful bidders before the commissioning of the systems.

Failure to submit quarterly CMC reports timely shall invite penalty of Rs. 1000/- per week after the end of the one month of the ending of the quarter. If the successful bidder is found to be not doing CMC work continuously for two quarters, then bidders performance guarantee will be forfeited, work order shall be cancelled and bidder shall be blacklisted

34 Breakdown / corrective Maintenance:

Whenever a complaint is lodged by the user the bidder shall attend the same immediately. It is clarified that effective CMC means that the bidder should ensure smooth working of all the Solar High Mast Lighting System throughout the CMC period and therefore, if any complaint in this level of service is found by the JREDA officials and if the bidder do not attempt the rectification of any such defect Within seven days of communication of such complaint to the bidders, A penalty of @ Rs. 100/- per day per item will be imposed on bidder after 7 days from the day it was informed about the defect/rectification till the same is rectified for Solar High Mast Lightings.

35 Advances:

35.1 The JREDA will not provide any advance against the security of equipment as provided in Part I - GeneralConditions of Contract.

36 Corrupt or Fraudulent Practices:

The JREDA requires the bidders/Contractors to strictly observe the laws against fraud and corruption in force inIndia, namely, Prevention of Corruption Act, 1988.

37 Timeline/ Completion Period:

The time of completion shall be adhered as per the timeline defined in the table below:

Sr. No.	Particular	Timeline (in Days)
1	Letter of award	X Day
2	Submission of Security Deposit and Signing of Agreement	Within X+15 Days
3	PDI Offer by the firm	X+90 Days
4	Supply, installation & Commissioning of SHML at Sites.	Within 04 Month or 120 Days from letter of DI issued.

Section-5**General Terms & Conditions****NIB No: 18/JREDA/SHMLS/22-23****1. Introduction:**

The instruction/information contained in the bid documents are for guidance and compliance of the intending bidder. Bidders are advised to obtain clarification from JREDA, if any, prior to submission of their bid, failing which it will be deemed that the stipulation made in the bid documents have been read, understood and are acceptable to the bidder.

Bidder shall bear all costs associated with the preparation and submission of the bid, journeys undertaken by them and subsequent bidding process till the award of the order to successful bidder and the JREDA shall in no case, shall be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

2. Scope of work:

The Scope of work for LED based Solar High Mast Lighting System includes **“Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.”** complete set in all respects along with one set of operational instruction cum maintenance manual (both English and Hindi) for each set and delivery on FOR destination/site (door delivery) basis across the State of Jharkhand as per the direction of JREDA. **Name of Consignee: Consignee person will only be nominated by the District Administrative or JREDA officials.**

3. Bid documents:

Tender documents shall comprise of all the documents mentioned in this Bid. In addition to these any other documents/amendments/revisions or instructions issued by JREDA from time to time to bidders till due date of opening of the offers, shall also be deemed to be integral part of the bid document.

4. Price:

The bidder shall quote project cost of one unit as per schedule of items of work. The contract price rates shall be firm and binding and shall not be subject to any variation except for statutory variation of taxes and duties during the contractual completion period. ***The price shall be excluding GST and inclusive of all Central/State/Local taxes & duties, packing,***

forwarding, transit insurance, loading & unloading, transportation & other charges and 5 years CMC etc. as on the opening date of tender. The price shall also include designing, manufacturing, inspection, supply, transport, insurance, handling etc. All applicable charges for taking necessary clearance such as commercial tax, road permit etc. wherever required are also deemed to be included in the contract price.

5. Inspection of the factory and Tests:

JREDA reserves the right to inspect manufacturer's works/factory to ascertain the capability/availability of necessary equipment and infrastructure required for manufacture of the Items offered. JREDA shall have the access and right to inspect the work or any part thereof at any stage and to test the goods to confirm their conformity to the technical specifications. Successful bidder shall inform JREDA at least 15 days in advance of schedule dispatch for technical sample audit.

6. Payment terms and conditions:

Project Cost will be divided into Supply, Installation, Commissioning as one part (i.e. 80 % of the project cost) and CMC as second part. In case agency fails to comply CMC as per work order i.e., fails to submit CMC report or fails to attend compliance then after two notice or two months whichever is earlier, 2nd part of work order will be transferred to any of the technically qualified agency under that NIB on quotation basis and the performance bank guarantee of the agency will be forfeited along with necessary action as per prevailing rules. Subject to any deduction which JREDA may be authorized to make under this contract, the contractor shall be entitled to payment as follows:

- 6.1** 70% of the 1st Part of Project cost shall be paid against supply and delivery of goods in full and in good condition as certified by Consignee and/or JREDA Officials after submission of following documents:
- i. Original Commercial invoice raised from the state of Jharkhand for the supply made in triplicate (1+2).
 - ii. Copy of duly raised delivery challan / transportation challan / lorry receipt/dispatch clearance.
 - iii. Duly filled **Annexure-12** should be submitted duly signed by the Consignee/JREDA officials.
 - iv. Photographs with Geo-tag of all the equipment (materials) at destination with signature &

seal of Consignee/JREDA Officials. This record should be kept in the office of Consignee for verification.

v. Submission of the Insurance Documents and Warranty Certificates of the Components.

6.2 30% of the 1st Part of Project cost shall be paid against Installation, Testing & Commissioning after submission of following documents:

- i. Copy of Original Commercial invoice raised at the time of supply in triplicate (1+2).
- ii. Duly filled **Annexure-13** should be submitted duly signed by the Consignee/JREDA officials.
- iii. Certificate for minimum seven days of satisfactory performance with photographs of each installed LED based SHML with GPS Co-ordinates.

6.3 For CMC: 20% each year of 2nd Part of the Project Cost can be release against CMC Five year. Payment against CMC (2nd Part) can be released after submission of duty pledged DD/BG/FDR of 4% for each year valid up to CMC period. The BG/FDR will be release after submission of CMC documents in prescribed format. The Payment shall be released after submission of following documents:

- i. Copy of Original Commercial invoice raised at the time of supply in triplicate (1+2).
- ii. Submission of monthly reports of CMC undertaken by the manufacturer as per **Annexure-14**.

The payment for the items to be procured/installed will be released on availability of funds. “The efforts will be made by JREDA to make available the due payments to the agency within three months against satisfactory completion of the work.”

7. Dispatch Instructions:

All items/equipment's shall be subject to **Pre-Dispatch Inspection (PDI)** by JREDA or its authorized representatives at the manufacturing site before their dispatch. The sample size for PDI shall be in accordance with **IS 2500 / related standards of sampling plan**.

The manufacturing site must have sufficient testing facilities. The manufacturer will submit test report with regards conformity to technical specifications for the items to be dispatched to work site of JREDA. After acceptance of the test reports of equipment's, “**Dispatch Clearance**” will be issued by JREDA. Bidder should submit Undertaking after PDI as per **Annexure: 16**.

Randomly selected Sample/s from each lot offered for PDI, may be sent to MNRE approved or

NABL accredited lab for verification of Specifications and Performance of the System. The cost of such tests shall be borne by bidder.

No consignment shall be dispatched without approval of test report received during PDI from JREDA. No PDI shall be done at any site other than the concerned manufacturing site. Successful bidders have to arrange necessary equipment's for testing the materials to be supplied during the pre-dispatch inspection by JREDA at their manufacturer's unit. Failure to fulfill the PDI conditions shall lead to cancellation of work order and forfeiture of security deposit.

The items which are being procured through this bid have to be distributed/installed on the basis of demand to be received by JREDA. Therefore, JREDA does not take responsibility that it will procure 100% quantity as has been indicated in the bid. Further, as JREDA will receive the demand, the supply order shall be placed to the successful bidder for execution in due time.

After finalization of the tender JREDA authority will take decision for issuing work order for the work under scope to the successful bidder; and thereafter on the basis of demands received in the JREDA office, request for supply/ installation will be communicated. Then within 2 months period the supplier will have to ensure pre dispatch inspection from JREDA and within next 30 days JREDA will issue Dispatch instruction. Accordingly, the work of supply & installation will be completed by the vendor within 120 days period from the date of issue of dispatch instruction. The bidders shall have no claim regarding economy of scale, choice of district/s or choice of region in the state, for the purpose of transportation of items/materials to the demand/work sites.

8. Liquidated Damages for Delay in Completion:

If the supplier fails 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 JREDA and/or to fulfill his obligations in time under the contract, he shall be liable to pay to JREDA @0.5% per week maximum up to 10% of work value delayed beyond contract period.

9. Risk & Cost:

If the contractor fails to complete the awarded work from the scheduled date of completion, then JREDA will be at liberty to cancel the said work order and will get the full or part of left-over work to be completed by way of engaging alternate contractor and completion of the said

work shall be got completed at risk & cost of the failed contractor and failed contractor shall be liable to pay all the dues to JREDA.

10. Insurance:

- A. The eligible contractor shall arrange insurance coverage for the materials and Solar Mast System at his/ beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The eligible bidder shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/Central laws. JREDA shall not bear any responsibility on this account.
- B. Eligible contractor shall arrange for insurance coverage for complete Solar Mast System during CMC period i.e., for 05 year from the date of installation. Insurance should cover for damage and theft. In case of such incidence, contractor must replace the lost/damaged part within 7 days from the date of intimation.

11. Assignment/ Sub-letting:

The Manufacturer shall not assign or sublet in whole or part of the work, and its obligations to any third party to perform under the order/contract. However, the manufacturer can procure those materials from any other manufacturer, which are not manufactured by the firm.

In the event the manufacturer contravenes this condition, JREDA reserves the right to reject the equipment/work contract and procure the same from elsewhere at manufacturer's risk and cost. The Manufacturer shall be solely liable for any loss or damage which JREDA may sustain in consequence or arising out of such replacing of the contract work.

12. Completeness of Tender:

All fittings, assemblies, accessories, hardware items etc. & safety and protection devices as required shall be deemed to have been included in the tender, whether such items are specifically mentioned in the BoM/BOQ or not.

13. Compliance with Regulations:

The supplier/contractor shall comply with all applicable laws or ordinances, codes approved standards, rules and regulations and shall procure all necessary municipal and/or other statutory bodies and government permits & licenses etc. at his own cost. The contractor shall

leave the purchaser, Director, JREDA harmless as a result of any infractions thereof.

14. Agreement:

The successful qualified suppliers shall have to enter into an agreement in the office of the Director, JREDA, in prescribed format before commencement of supply.

15. Income Tax / GST:

Without prejudice to the obligations of the supplier under law, any income tax and GST which JREDA maybe required to deduct by law/statute, shall be deducted at source and shall be paid to income tax authorities on account of the supplier. JREDA shall provide the supplier a certificate for such deductionsof tax.

16. Training Program, After Sales Service and Availability of Spare Parts:

16.1. The responsibility of organizing training program for LED based SHML will rest on the successful bidder. The training program will be organized in consultation with JREDA/Consignee. The training program will focus on operation and maintenance of LED based SHML. Printed leaflet/literature should be made available in Hindi by the Supplier regarding the operation and maintenance of their LED based SHML.

16.2. The Supplier shall depute authorized Service Engineer within 7 days from the date of the intimation of fault, and establish sufficient inventory of spares in the State in consultation with JREDA to provide satisfactory and uninterrupted services during the warrantee period.

17. Force Majeure conditions:

- i.) In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by them under this agreement, relative obligation of the party affected by such force majeure shall be treated as suspended during which force majeure condition last.
- ii.) The term force majeure shall have herein mean riots (other than among the contractor's employee), civil commotion, war (whether declared or not), invasion, act of foreign enemies' hostilities, rebellion, insurrection, military coup to usurp power, act of god such as earthquake, lightening, floods, fires not caused by contractor's negligence and other cause which the contractor has no control and accepted as such by the Director, JREDA, whose decision shall be final and binding.
- iii.) If the work is suspended by force majeure conditions lasting for more than 45

days, the purchaser shall have the option of canceling this contract in whole or part thereof, at its discretion. The contractor shall not claim for compensation for force majeure conditions.

18. Cancellation of Work Order:

JREDA will be at liberty to terminate/blacklist in part or full the awarded contract and / forfeit security deposit and/or performance guarantee without prejudicing its rights and affecting the obligations of the Contractor by giving 15 (Fifteen) days' notice in writing in the following events:

- (a) If the contractor/supplier is found defaulter for delayed supply, installation & commissioning or failure to deliver satisfactory performance or supply of substandard materials.
- (b) If the contractor/supplier fails to comply with the provision(s) of the contract including their responsibilities to fulfill the 5 years CMC as per the provisions mentioned.
- (c) If the Contractor/vendor is involved in any action of moral turpitude.
- (d) While taking decisions for blacklisting of the bidder, his past performance shall also be taken into account.

19. Jurisdiction of the Court:

All disputes would be settled within Ranchi jurisdiction of court of law only.

**Section-6
Technical Specification**

A solar photovoltaic Mast System (HM) is an outdoor lighting unit used for illuminating an open area. The Solar Mast System consists of a solar photovoltaic (SPV) Module, LiFePo₄ storage battery, LED Luminary with Controls & BMS. Electricity generated by the PV module charges the battery during the day time which powers the luminary from dusk to dawn. The system lights at dusk and switches off at dawn automatically. The Solar Mast System should be an integrated system.

The SPV Module should be of capacity minimum 200 Wp with 12 V nominal voltage, Multi/Mono Crystalline/MNRE approved solar modules with 36 Full Cells, with minimum 16% Module Efficiency), The battery bank should be of LiFePo₄ storage batteries as per MNRE with control electronics, BMS, inter-connecting wires/cables properly sealed.

The luminary is based on White Light Emitting Diode (W-LED), a solid-state device which emits light when electric current passes through it. All these three items should be mounted as an integrated compact unit. This compact unit should be mounted at a suitable angle to maximize illumination on the ground. The PV module is placed at the top of the pole so that it receives solar radiation throughout the day, without any shadow falling on it. A battery is placed in the same housing of Luminary. Electronic Efficiency of the system should be minimum 85% with duty cycle dusk to dawn with Autonomy of 2 days or Minimum 24 operating hours per permissible Discharge.

This integrated unit should be mounted on a suitable mounting structure in such a way that it can be lowered or elevated through a winch of suitable size. The winch system (including pulley, locking arrangement and wire rope of suitable size) is required for lowering & elevating the compact unit of modules, battery & luminaries, through a mounting structure around a pole including hardware.

Solar Module	Batteries (Lithium Ferro Phosphate battery (LiFePo ₄ battery))	Luminary	MMS /Pole Structure
<ul style="list-style-type: none"> • IEC 61215/ BIS 14286 • IEC 61730-1 • IEC 61730-2 	<ul style="list-style-type: none"> • IS 16046-Part 2 • IS 16047 Part 3 	<ul style="list-style-type: none"> • LM 80 • LM 79-08 • IS 16101 • IS 16102 • IS 16103 • IS 16107 	<ul style="list-style-type: none"> • IS 2062: 1992 • IS 4759. • IS 822 • IS 4759 EN1461. • CuSO₄ Dip Test as per IS 2633 • IS 6745 • IS 2629 • IS1161 & k736

SOLAR HIGH MAST LIGHTING SYSTEM

A stand-alone Solar PV White- LED High Mast Light consist of white LED luminary of maximum 4*40Watt (LED + Driver) as per configuration along with solar PV modules and battery of given capacity, necessary control electronics-inter connecting wires / cables, module mounting structures etc. to operate the load for dusk to dawn. The broad performance specifications of a White Light Emitting Diode (W-LED) light source based solar Luminaires lighting system are given below:

BROAD PERFORMANCE PARAMETERS

PV Module	Only indigenous modules shall be used in the project. SPV module aggregate capacity 800 Wp (200 Wp X 4 Nos.) at 16.4 Volt under STC. Module Voc at least minimum of 21V.
Battery	Li Ferro Phosphate batteries of capacity 12.8 Volt, 480 Ah @ C/10, (12.8 V, 240 Ah x 2 Nos. or 12V, 120 Ah x 4 nos.)
Light Source-Luminaries	<ul style="list-style-type: none"> • White Light Emitting Diode (W-LED) 4*40 Watt (LED +Driver) • Using LEDs which emits ultraviolet light will not be Permitted • Only Nichia/ Osram/ Philips Lumileds/ CREE/ Seoul/ Everlite make LEDs shall be used for light. • White Light Emitting Diode 40W x 04 nos. Total system Wattage (Luminary Wattage) of each luminary should be maximum 40W DC operated confirming to IP66 or above. • The LED should be SMD LED Chip of Nichia/ CREE/ Osram/ Philips/ LG /Samsung /Refond/ Everlight Seoul/ Bridgelux or equivalent reputed manufacturer. • The LED efficacy should be minimum 140 lm/W (as per LM 80) CCT 5500 - 6500 K, CRI Minimum 70 & LED wattage minimum 01W. • The Luminous flux should be minimum 4000 lumens & Luminary Must be LM-79 certified from MNRE/NABL Lab. The colour temperature of White LED used in the system should be in the range of 5500K-6500K. LEDs should not emit ultraviolet light. (Strictly as per IS 16101, IS 16102, IS 16103 and IS 16107) Type tests complied satisfactorily at independent NABL Laboratory
Light Out put	White color (color temperature 5500-6500 K). Lumen efficacy of LED- min 140 lumens/Watt. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred.

Pole (≥80 Microns)	9M Long, 20 sided polygonal Raising lowering mast shaft in Single section Suitable for basic wind speed 50 m/sec (180 Km/ Hr) complete with head frame, Luminaries carriage suitable to install 4 nos. Luminaries, Solar Panels & battery on the top of the mast. The pole should be with facilitated to isolate the LA from the system. There should be provision to install the type tested Winch inside the mast for raising & lowering of complete solar lighting system. The mast must be hot dip galvanized 20-sided polygonal structure having Bottom A/F Dia 410 mm, top A/F Dia 150 mm of 3 mm thick. The high mast should have a designed life of 25 years. Only Bajaj/ Surya/Philips or equivalent reputed manufacturer shall be used. S 355 grade as per BS- EN10 025
Stainless Steel Wire Rope	Wire rope of Grade AISI 316 grade, 7/19 construction, with two ropes continues 6 mm diameter and braking load capacity 2450 kg x 2. The breaking load test report obtained from govt. laboratory of the wire rope should justify the desired the Breaking load capacity.
Complete Raising Lowering mast	The lighting design report of the solar raising lowering mast, Data sheet of mast, Type test report of winch & load test report of AISI 316 grade wire rope to be provided by the company for technical acceptance of the complete system.
Number of foundation bolts: PCD of foundation bolts (mm): Type: Diameter: Length of foundation bolts:	6 nos. 500 mm TS 600 24 mm dia. Min. 750 mm long
Decorative Pedestal	Minimum 900 x 900 x 600 mm
Electronics Efficiency	Minimum 90% total
Autonomy	3 days or Minimum 24 operating hours per permissible Discharge
Average duty cycle	Dusk to dawn
Trailing Cable	Interconnection cable Copper Conductor, 1 Core, 2.5 sq. mm/ 4 sq mm Insulation – ERP insulated PCP sheathed
Size of opening and door at base (MM)	Size of opening and door at base (MM)
Lighting Protection	G I Single Spike of length 1200 mm
Earthing	Waterless and maintenance free earth electrodes, MS 16 sqmm copper bonded conductor embedded in electrically conductive concrete of size: Length 1.2 Mtr (63mm Dia) (Earthing electrode with Marconite), 05 years warranty from the date of installation.

	Earthing cable size for LA should be as per IS specification.
Warranty	The complete solar mast lights, Battery & solar PV module should be warranted for a period of 5 years from the date of installation.

MINIMUM TECHNICAL REQUIREMENTS / STANDARDS

1. DUTY CYCLE

The Solar PV White- LED High Mast Light system should be designed to operate for dusk to dawn.

2. SPV MODULES

- i. **Only indigenous modules (Make in India) of reputed brand IEC Tested shall only be used in the project.** Crystalline high power/efficiency cells shall be used in the Solar Photovoltaic module. The power output of each module shall not be less than 200 Wp at load voltage*16.4 +- 0.2 Volt under standard test conditions (STC). * Not applicable for MPPT charge controller.
- ii. The open circuit voltage of the PV modules under STC should be at least 21.0Volts.
- iii. Crystalline high power/efficiency cell shall be used in the Solar Photovoltaic module. The cell efficiency should not be less than 16%.
- iv. PV module must be warranted for output wattage, which should not be less than 90%at the end of 10 years and 80% at the end of 25 years.
- v. The terminal box on the module shall be IP65 and designed for long life out door operation in harsh environment should have a provision for opening for replacing the cable, ifrequired.
- vi. The offered module shall be in accordance with the requirements of MNRE.
- vii. Latest edition of IEC 61215 edition II / IS 14286 for Crystalline and shall be certified by MNRE authorized test center. The bidder shall submit appropriatecertificates.
- viii. PV modules must quality to IEC 61730 Part 1- requirements for construction & Part 2 – requirements for testing, for safety qualification.
- ix. Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided and if required, blocking diode(s) may also be provided.
- x. Identification and traceability
Each PV module must use a RF identification tag (RFID), which must contain the following information:
 - a) Name of the Manufacturer of PV Module
 - b) Name of the Manufacturer of Solar cells
 - c) Month and year of the manufacture (separately for solar cells and module)
 - d) Country of origin (separately for solar cells and module)
 - e) I-V curve for the module
 - f) Peak Wattage, I_m , V_m and FF for the module
 - g) Unique Serial No and Model No of the module
 - h) Date and year of obtaining IEC PV module qualification certificate
 - i) Name of the test lab issuing IEC certificate
 - j) Other relevant information on traceability of solar cells and module as per ISO 9000 series.
 - k) The RFID should be inside the module laminate.

3. BATTERY

Battery shall be Lithium Ferro phosphate (LiFePo₄) with maximum Depth of Discharge 90%, the batteries should conform to the latest BIS /International standards. The battery shall be of LiFePo₄ storage batteries as per MNRE/BIS/IEC standards with control electronics, BMS, interconnecting wire/cables properly sealed. Should have designed battery management system (appropriate over charging, over heating deep discharge protection).

- i. Capacity of each battery shall not be less than 12.8V, 120Ah/240 Ah at C10 rate.
- ii. DOD shall be 90% i.e., at least 90% of the rated capacity of the battery should be between fullycharged & load cut off conditions.
- iii. Battery terminal shall be provided with covers.
- iv. Suitable carrying handle shall be provided.
- v. Bidder shall mention the design cycle life of batteries at 75%, 50% and 25% depth of discharge at ambient temperature up to 45-degree C.
- vi. The batteries shall be designed for operating in ambient temperature of site up to 55-degree C.
- vii. The self-discharge of batteries shall be less than 2 % per month of rated capacity at 27-degree C.

4. Light Source:

- i. The light source will be of white LED type The color temperature of white LEDs used in the system should be in the range of 5500-degree K – 6500-degree K. Use of LEDs which emits ultraviolet light will not be permitted.
- ii. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred. The light output from the white LED light source should be almost constant.
- iii. The lamps should be housed in an assembly suitable for outdoor use and shall comply with IP65. The LED housing should be made of pressure die cast aluminum having sufficient area for heat dissipation and heat resistant toughened clear glass/ high quality poly carbonate fitted with pressurized die cast aluminum frame with SS screws. The temperature of heat sink should not increase more than 30 degreeC above ambient temperature even after 48 hrs of continuous operation. This condition should be complied for the dusk to dawn operation of the lamps while battery operating at any voltage between the loads disconnect and charge regulation set point.
- iv. High power LED of minimum 1 watt each capacity capable to withstand maximum 1 amp driving current having lens angle greater than 120 degrees shall be used. The LED of make Nichia/Osram/Philips Lumileds/CREE/Seoul/Everlite having LM 80 test report shall only be used. Bidder shall have to submit LM79 test certificate of along with the bid.
- v. The LED efficacy should be more than 140 lumen / watt.
- vi. All LED in circuit must be connected in series only. It must incorporate fail short mechanism in all LEDs.
- vii. The LEDs used in the luminary should have life time more than 50,000 hrs.

- viii. The lumen depreciation of LED shall not be more than 30% even after 50,000 burning hours.
- ix. Power consumption of each LED Luminary / Lighting unit shall not be more than 80 W (including LED Driver power loss).
- x. **Other Parameters :**
 - LED DC current regulation – better than 3 %
 - Input – 12 V DC
 - Driver Type- DC-DC (as per IEC 62384)
 - CRI - 70 % Typical
 - Lighting quality- Free from glare and flickering and UV
 - Ambient temp– up to 50 deg
 - DC to DC convertor efficiency > =90 %
- xi. The connecting wires used inside the luminaries, shall be low smoke halogen free, fire-retardant e-beam cable and fuse protection shall be provided at input side.
- xii. Auto resettable reverse polarity protection shall be provided.
- xiii. LED lighting unit shall comply with LM -79-08 and LM -80-08 Standards and copy of test certificate (LM 80-08) should be submitted.
- xiv. The make, model number, country of origin and technical characteristics of white LEDs used in the lighting system must be furnished.
- xv. The luminaries must have light distribution polar curve as per LM 79 test specifications.

5. Electronics

MPPT charge controller to maximize energy drawn from the Solar PV array. The MPPT charger shall be microcontroller based. The MPPT should have four stage charging facilities i.e Bulk, Absorption, Float and Equalization. The auto equalization facilities for every (30+_3 days) and provision to verify it during testing. The PV charging efficiency shall not be less than 90% and shall be suitably designed to meet array capacity. The charge controller shall conform to IEC 62093, IEC 60068 as per specifications

- i. Protection against polarity reversal of PV array and battery, Over Current, Short Circuit, Deep Discharge, Input Surge Voltage, Blocking diode protection against battery night time leakage through PV Module
- ii. Electronics should operate 21 volt and 10 volt and its Euro efficiency should be at least 90 %.
- iii. The system should have protection against battery overcharge and deep discharge conditions. The numerical values of the cut off limits of lower voltage should not be less than
11.1 Volt and over voltage cutoff should be 14.7 V
- iv. The system should have protection against Microwave radar sensor auto Dimming system.
- v. Full protection against open circuit, accidental short circuit and reverse polarity should be provided.
- vi. Charge controller shall have automatic dusk-dawn circuit based on SPV module as sensor for switching on/off the high mast light without manual intervention. The sensor must not get triggered by impulse lighting like lightning flashes and firecrackers.
- vii. The self-consumption of the charge controller shall not be more than 20 mA at rated voltage and rated current.
- viii. Adequate protection shall also be incorporated under no-load conditions (i.e., when the

- system is ON & the load (LED Lamp is removed)
- ix. The system should be provided with 2 LED indicators: a green light to indicate charging in progress and a red LED to indicate deep discharge condition of the battery. The green LED should glow only when the battery is actually being charged.
 - x. All capacitors shall be rated for max. temp of 105° C.
 - xi. Resistances shall preferably be made of metal film of adequate rating.
 - xii. Device shall have adequate thermal margin should be at least 25 degrees below the allowable junction temperature while operating at an ambient temperature of 55 degree C and full load.
 - xiii. Fibre glass epoxy of grade FR 4 or superior shall be used for PCB boards.

SOLAR CHARGE CONTROLLER UNIT

Charge Controller Type	Maximum Power Point Tracking (MPPT) as per MNRE
Charging Current Rating at 12V	20A
Load Current Rating at 12V	15A
Solar Power	Only indigenous modules shall be used in the project. SPV module aggregate capacity 800 Wp (200 Wp X 4 Nos.) at 16.4 +_ 0.2 Volt under STC. Module Voc at least minimum of 21V.
Idle Current (Self Consumption)	<20mA
Efficiency	>90%
Temperature Compensation	3mV/ °C
Indications	Green -->Charging Under Process Red --> Battery Low
Battery Voltage Settings	Boost Charging - 14.70V± 0.20V Float Charging - 14.00 V± 0.20V Battery Low Load Disconnect - 11.10 V± 0.20V Load Reconnect- 12.60V± 0.20V
Protections	<ul style="list-style-type: none"> • Transient / Surge • Over Charging / Deep Discharge • Overload - Auto shutdown and restart • Solar and Battery Reverse Protection • Reverse Current from Battery at Night

6. Technical Requirement/Standards

Component	Standard	Description
1. PV Module- Design	IEC 61215-1:2016	Terrestrial Photovoltaic (PV)modules- Design qualification and type approval- Part 1 : Test requirements
	IEC 61215-1-1:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 1-1 : Special requirements for testing of crystalline silicon photovoltaic (PV) modules
	IEC 61215-1-2:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 2: Test procedures
2. Module Testing	IEC 61701: 2011	Salt mist corrosion testing of photovoltaic (PV) modules, wherever applicable
3. PV Module Safety	IEC 61730-1:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for construction
	IEC 61730-2:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for testing
	UL 1703/ UL 61730	PV module safety standards
4. Junction Box/ Fuses/Cut-Offs	IEC 62790: 2014	Junction boxes for Photovoltaic modules – Safety requirements and tests
	UL 2579	UL 2579: Low Voltage Fuses- Fuses for Photovoltaic systems, wherever required
5. Connectors	UL 4248-18	Fuse Holders- Part 18: Photovoltaic Systems
	IEC 62852: 2014	Connectors for DC-application in photovoltaic Systems- Safety requirement test
6. Battery	IP 25	Battery & BMS should be in IP-25 Box with the arrangement of proper ventilation but arrangement for prevention of insects.
7. Wires, Cable andCords	UL 1581 1554 / 694 Part 1:1988	Reference Standard for Electrical Wire, Cables and Flexible Cords
	UL 4703	Photovoltaic Wire
8.LED	LM -80-08 LM 79-08 IEC6238 4	LED performance Luminary performance Driver safety
9. Electronics Protection	As per IS /IEC	Over Voltage Protection Under Voltage Protection Short Circuit Protection Open Circuit Protection Surge Protection of 10KVA Reverse Polarity Protection (Input and Output)
10.Electronics Units	Charge Controller/MPPT	EN50530 IEC 62093 Equivalent BIS Std

Testing Perform During PDI visit:

Before PDI request Agency should be submit below documents.

1. FTR
2. QAP (Quality Assurance Plan)
3. Calibration Certificate of all testing equipment's.
4. Valid Attachments of Lot/ Materials Geotag Photographs.
5. Attachment of Certified BOM

Battery:

- i. Battery performance test as per IEC 62620:2014.
- ii. Visual and Dimensional Check
- iii. Polarity
- iv. Internal resistance test

Solar PV Module:

- i. Visible check
- ii. Flash Test
- iii. Electroluminescence Test
- iv. Insulation Resistance Test
- v. Hi-Pot Test
- vi. DCW Test
- vii. Wet Leakage Test
- viii. JB pull Out Test

Luminary:

- i. Visual and Dimensional Check
- ii. Over voltage protection: As per IS standard
- iii. Surge protection: As per IS standard
- iv. Photometric test
- v. Weather protection test (Dust & Humidity protection)
- vi. Insulation Resistance and Electric Strength
- vii. Measurement of Leakage Current
- viii. Creepage Distances and Clearances
- ix. Resistance To Corrosion

Control Driver Testing:

- i. Visual Check
- ii. Efficiency Test
- iii. IR test

Pole:

- i. Visual, Dimension and Thickness check
- ii. GI Coating Check >80 micron

Structural drawing including foundation drawing and electrical drawing of the High Mast Pole from the installer should be submitted duly verified and certified by Structural Engineer / Chartered Engineer with request letter of PDI.

JREDA will have the authority of on-site quality check of the installed Solar High Mast Lighting System if required.

6.1. MECHANICAL HARDWARE**A. High Mast Pole:**

- A. A galvanized metallic frame structure to be fixed on the pole to hold the SPV module(s). The frame structure should be fixed at 30 degrees from horizontal facing true south.
- B. The pole should be hot deep Galvanized Iron 20-sided polygonal pole in single length for 9.0 mtr. Height as per specification as under:
 - a) The 20-sided polygonal poles shall be Hot deep galvanized to min 80 microns. The material of pole shall be as per specification of BS EN 100025, ISO 1461.
 - b) The size of the pole shall be min 150 mm (A/F) at Top side, 410 mm (A/F) at bottom side with thickness of 3 mm minimum.
 - c) Diameter of base plate (mm)= 580mm; Thickness of base plate (mm)=20mm.
 - d) Pole should have the arrangement at top for mounting of Solar panel of design capacity with mounting structure at an angle of latitude $\pm 2^0$ degree.
 - e) The battery either two or four shall also be mounted on this pole at suitable height hence provision should be made accordingly.
 - f) The pole shall be mounted on suitable RCC foundation at least 1.5 meter deep and 600mm above ground with 4 bolt of min 24 mm size
 - g) The Nut -Bolts in battery box and panel structures should be proper riveted to ensure the theft.
 - h) The design and foundation details of the pole shall be got approved from JREDA before execution of work.
 - i) Test certificate, Galvanized Certificate etc. of the mounting hardware /Pole should be submitted from approve NABL Lab.

B. Battery box:

Two vented metallic boxes of 20 SWG thick made of pre coated galvanized MS sheet with 80 microns thickness for housing the storage battery outdoors should be provided with proper lock and key. The boxes should be inscribed with JREDA written on at least two faces. The size of box should be as per battery size (including vent plug/level indicator) providing minimum clearance of 25 mm on all sides. The battery box is to be properly rest/mounted on pole at 03 meters of height from ground level. Louvers for proper ventilation should be provided on one side and back of the battery box. No vent shall be providing on top of battery box. Box should be provided with proper locking arrangement. The edges of box should be turned properly to give smooth edge and good strength. Two wooden battens should be fixed inside the battery box to avoid the electrical contact between battery and box. Components and hardware shall be vandal and theft resistant. All parts shall be corrosion-resistant

C. Electric cable

The electric cable used shall be twin core PVC insulated water and UV resistance copper cable of minimum size 1.5mm. Cable shall meet IS 1554 / 694 Part 1:1988 & shall be of 650 V/ 1.1 kV.

D. Earthing Arrangement

- i.** Preferably Marconite earthing shall be provided for Solar Mast System.
- ii.** For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.
- iii.** Earthing should be as per IS 3043.1987.
- iv.** Minimum Two No. of Earthing Pit required for Lightning and During the Inspection time Earthing pit value should be check with calibrated earthing Resister Tester. Earthing Value should be $\leq 5 \Omega$ During inspection time.

E. Lightning Arrestor

Lightning Arrestor should be a separate unit and confirming to IEC 62561 – 1, 2 & 7 detailed as below:

- i.** IEC 62561–1– Lightning Protection System Component (LPSC) – Part 1 – Requirement for connection components.
- ii.** IEC 62561– 2– Lightning Protection System Component (LPSC) – Part 2 – Requirement for conductors and earth electrodes.
- iii.** IEC 62561–7– Lightning Protection System Component (LPSC) – Part 7 – Requirement for earthing enhancing compounds.

6.2. OTHER FEATURES

UID number of minimum computer font size 72 or 13 mm (issued by contractor) is to be embossed/ punch on pole between 1-1.5 meter above from ground level and in front of battery box by contractor/ bidder. Contractor/Bidder shall also make arrangement to emboss logo of state government and JREDA at visible height. The complaint to contractor/ bidder will have to rectify the same to make/ restore the system to working position within 72 hours in the warrantee period of 5 years, failing which the system may be get rectified on contractor/

bidder cost and the cost will be recovered by contractor/ bidders pending claims what so ever and appropriate action as per noncompliance etc of agreement will be considered/taken.

6.3. INSTALLATION OF SYSTEM:

The system should be properly installed at site. The SPV module mounting structure along with telescopic 20-sided polygonal pole should be properly grouted depending upon the location and requirement of the site. The grouting should be such that it should withstand the maximum wind speed /storm of 180 kmph. The pole should be rest on a suitable foundation. (RCC Foundation size 900 mm x 900 mm x 1500 mm deep and 600 mm above the ground level. must have 4 nos. foundation bolts of 1000 mm & 24mm dia.) Adequate space should be provided behind the PV module/array for allowing un-obstructed air flow for passive cooling. Cables of appropriate size should be used to keep electrical losses to a bare minimum. Care should be taken to ensure that the battery is placed with appropriate leveling on a structurally sound surface. The control electronics should not be installed directly above the battery. All wiring should be in a proper conduit or capping case. Wire should not be hanging loose. Any minor items which are not specifically included in the scope of supply but required for proper installation and efficient operation of the SPV systems is to be provided by the manufacturer as per standards.

6.4. Warranty

The mechanical structures, electrical works including power conditioners/inverters/charge controllers/ maximum power point tracker units/distribution boards/digital meters/ switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

6.5. Traceability of the product to be supplied

In order to prevent the misuse of the product such as unauthorized sale or diversion to the open market, the following incorporation shall be made in the product.

- A. Engraving (or) Screen printing of JREDA at a suitable place on the main components viz., SPV Panel, Battery, LED Lighting Units to be used in the installation of the solar high mast lighting systems.
- B. The unique system ID number as provided by JREDA shall be embossed or punch or permanently riveted on each pole and battery box of the system

6.6. Operation And Maintenance Manual

An Operation and Maintenance Manual in Hindi should be provided with the Solar Mini Mast System. The Manual should have information about Solar Modules, Luminary, Battery, Controller, electronics and switches. It should also have clear instructions about DO's and DONT's and on regular maintenance and Trouble Shooting of the system. Helpline number and Name and address of the Service Centre and contact number of authorized representatives to be contacted in case of failure or complaint should also be provided. A warranty card for the

modules and the system should also be provided to the beneficiary.

Format for Covering Letter

Annexure-1

NIB No: 18/JREDA/SHMLS/22-23

(To be submitted in the official letter head of the company)

To,

The Director,
Jharkhand Renewable Energy Development
Agency 3rd Floor, S.L.D.C. Building,
Kusai Colony,
Doranda, Ranchi -
834502.

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

Sir,

We are hereby submitting our offer in full compliance with the terms and condition of the above NIBNo.

We have submitted the requisite amount of Tender Fee in form of Demand Draft & "Earnest Money" in the form of Bank Guarantee, valid for twelve months.

The tender is uploaded on www.jharkhandtenders.gov.in as per the requirement of the website separately Technical Bid & Financial Bid.

Signature of Authorized Signatory)

Name:

Designation:

Company Seal:

Note: MSME bidders of Jharkhand must submit necessary documents for claiming exemption of EMD and Bid fee.

Undertaking by MSMEs of Jharkhand for availing preferential treatment
NIB No: 18/JREDA/SHMLS/22-23

(To be submitted in the official letter head of the company)

I/We _____ (here in after referred to as MSME bidder) being desirous of tendering for the work under the above-mentioned tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document, DO HEREBY DECLARE THAT

- i. The Manufacturing or Services unit is located at..... District in the State of Jharkhand.
- ii. The Head office or Corporate Office of the unit/company/enterprise is at..... within the territorial Jurisdiction of Jharkhand.
- iii. The unit/company/enterprise is registered with (tick):-
 - a. Directorate of industries/District Industries Center, (Copy attached).
 - b. Khadi and Village Industries Board, (Copy attached).
 - c. Directorate of Handloom, Sericulture and Handicraft of Jharkhand Govt., (Copy attached).
 - d. Industrial Area Development Authorities, (Copy attached).
 - e. National Small Industries Cooperation Ltd, (Copy attached).
 - f. Other body specified by Directorate of Industries, Jharkhand Govt. from time to time and other industrial units/enterprises which have submitted IEM and been issued Date of Production (DOP) certificate by GM, DIC/MD, Industrial Area Development Authorities Director, Industries, GoJ.
 - g. MSME having Udyog Aadhar Number..... issued by Ministry of Micro, Small and Medium enterprises, GoI and has been duly verified, whether unit is existing / functional and doing regular production at
..... (Specify capacity) by GM, DIC/MD, Industrial Area Development Authorities / Director, Industries, GoJ”, (Copy attached).
- iv. The unit/company/enterprise is registered under Jharkhand Goods and Services Tax (JGST) Act- 2017 or The Central Goods & Services Tax (CGST) Act 2017, (Copy attached).
- v. The unit/company/enterprise have encouraged local people in employment.
- vi. The unit/company/enterprise complies with all statutory and legal formalities of concerned regulators/ Act.
- vii. That the product/services being supplied to JREDA has been manufactured/created by the unit located in Jharkhand only and agree to submit details of batch number/date or any other identifiable tag as per prevalent practice.

Signature of Authorized Signatory)

Name: Designation:

Company Seal:

(This bid Performa must be submitted duly signed in case separate sheet is submitted)

Annexure-2Check List for Technical bidNIB No: 18/JREDA/SHMLS/22-23

Sr. No.	Particulars	Upload ed Yes / No	Page No.
1.	Covering Letter as per Annexure-1 .		
2.	Information about the Bidder as per Annexure-3 .		
3.	The bidder is registered PV System Integrator or Manufacturing company of SPV cells or PV Modules or Battery or PV System Electronics confirming to relevant National/International Standards (Attach relevant certificates of Industry Department or MNRE).		
4.	To indicate the functionality of the firm, attach the Audited Account of last three years ending 31.03.2019/20 of the firm duly certified by statutory Auditor with ITR.		
5.	Registration certificate of MSMES of Jharkhand State (Enclose certificate issued by Industry Department, Govt. of Jharkhand).		
6.	The proof of supply of solar system in any SNA/Govt. organization/PSU in the last seven years as per Annexure-8 to indicate the quantity already supplied. Attach copy of the order and certificate indicating its successful execution.		
7.	IEC/IS certificates for Solar PV Module (Attach relevant certificate).		
8.	Test certificate of different System (Luminaries, Battery, Electronics Control Driver and Module) from the authorize test center from MNRE/NABL accredited Laboratories.		
9.	Certificate of Battery (Attach valid certificate).		
10.	A copy of valid GST/ TIN registration certificate		
11.	Average Annual Turnover for last three years ending 31.03.2019/20 (Attach average annual turnover certificate as per Annexure-5)		
12.	Net worth as on 31.03.2019/20 (Attach proof & Net worth certificate as per (Annexure-6)		
13.	Details of tender document fee (Bank Draft No. and Date)		
14.	Details of Earnest money Deposit (Bank Guarantee/DD/FDR Number & Date)		
15.	Technical Details as per Annexure-9 .		
16.	Declaration by Bidder as per Annexure-4 .		
17.	Warranty Card as per Annexure-15		
18.	Authority Letter for Signing Bid Document & Attending Bid Opening Meeting as per Annexure-7		

Please number the pages of the uploaded documents and write it in the box

Please ensure:

- i) That all information is provided strictly in the order mentioned in the check list mentioned above.
- ii) Bidders are advised to strictly confirm compliance to bid conditions and not to stipulate any deviation/conditions in their offer. Subsequent to bid submission, JREDA may or may not seek confirmations/clarifications and any offer(s) not in line with Bid conditions shall be liable for rejection.
- iii) Any clarification/confirmation bidder may require shall take from JREDA before submission of the bid. Bidder shall submit complete bidding document including subsequent amendment, modification and revision, duly signed and stamped as a token of having read, understood and accepted all the terms and condition mentioned therein.

(Signature of Authorize Signatory)

Name:

Designation:

Company Seal:

Annexure-3**Information About the Bidding Firm****NIB No: 18/JREDA/SHMLS/22-23**

(To be submitted in the official letter head of the company)

SL. No.	Particulars
1.	Name of the Bidder
2.	Address of Bidder with Telephone, Fax, email
3.	Address of the Registered Office
4.	Address of the works
5.	GPS Co-ordinate of Registered Office
6.	GPS Co-ordinate of Factory Campus
7.	Name & Designation of Authorized Signatory for Correspondence (Attach Power of Attorney as per Annexure-6)
8.	Nature of Firm (Proprietorship/Partnership Nature of Firm (Proprietorship/Partnership
9.	Permanent Account Number (PAN)/TIN(Attach proof)
10.	Firm's Registration Number (Attach proof)
11.	GST Number (Attach proof)
12.	Specify the Item Originally Manufactured by the Bidder (SPV module/Electronics/Battery)
13.	Registration Number of the firm/co. (Copy of Registration Certificate issued by Industry Department)
14.	Details of in-house testing facility (Attach Proof)
15.	Office/ Dealer and Service network in Jharkhand with TIN No. (Give details)
16.	Quoted quantity
17.	Particulars of Earnest Money
18.	Place where Materials will be Manufactured
19.	Place where Materials will be Available for Inspection
20.	Other details and remarks, if any

Yours faithfully,

(Signature of Authorized Signatory)

Name:

Designation:

Company seal:

Annexure-4

Declaration by the Bidder

NIB No: 18/JREDA/SHMLS/22-23

(To be submitted in the official letter head of the company)

I/We _____ (here in after referred to as the Bidder) being desirous of tendering for the rate contract for work under the above-mentioned tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document, DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document.
2. The Bidder is capable of executing and completing the work as required in the tender.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the tender.
4. The Bidder has no collusion with any employee of JREDA or with any other person or firm in the preparation of the bid.
5. The Bidder has not been influenced by any statement or promises of JREDA or any of its employees, but only by the tender document.
6. The Bidder is financially solvent and sound to execute the work.
7. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of JREDA.
8. The information and the statements submitted with the tender are true.
9. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
10. The Bidder has not been debarred or blacklisted by any SNA/ Government Dept. /PSU etc.
11. This offer shall remain valid for Six months from the date of opening of the tender.
12. The Bidder gives the assurance to execute the tendered work as per specifications terms and conditions.
13. The Bidder confirms the capability to supply and install required no. of systems per month.
14. The Bidder accepts that the earnest money be absolutely forfeited by JREDA if the Bidder fails to undertake the work or sign the contract within the stipulated period.

Yours faithfully,
(Signature of Authorized Signatory)
Name:
Designation:
Company seal:

Annexure-5**Format for Financial Requirement – Annual Turnover****NIB No: 18/JREDA/SHMLS/22-23**

[On the letterhead of Bidding Company]

To,

The Director,
 Jharkhand Renewable Energy Development Agency
 3rd Floor, S.L.D.C. Building,
 Kusai Colony, Doranda, Ranchi -834502

Dear Sir,

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

We certify that the Bidding Company had an average Annual Turnover of Rs. -----
 -- based on audited annual accounts of the last three years ending 31 03.2021.

Sl. No.	Financial Year	Turn over (in Rupees)
1.	2018-19	
2.	2019-20	
3.	2020-21	
	Average Annual Turnover	

UID No.:

Authorized Signatory
(Power of Attorney holder)

Statutory Auditor
(Stamp & Signature)

Annexure-6**Format For Financial Requirement - Net Worth Certificate****NIB No: 18/JREDA/SHMLS/22-23**

[On the letterhead of Bidding Company]

To,

The Director,
 Jharkhand Renewable Energy Development Agency
 3rd Floor, S.L.D.C. Building,
 Kusai Colony, Doranda, Ranchi - 834502

Dear Sir,

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

This is to certify that Net worth of _____ {insert the name of Bidding Company}, as on 31st March 2021 is Rs _____. The details are appended below.

Particulars	Amount (In Rs.)
Equity Share Capital	
Add: Reserves	
Subtract: Revaluation Reserve	
Subtract: Intangible Assets	
Subtract: Miscellaneous Expenditure to the extent not written off and carried forward losses	
Net Worth as on 31st March 2021	

UID No.:

Authorized Signatory
(Power of Attorney holder)

Statutory Auditor
(Stamp & Signature)

Format of Power of Attorney

for Signing Bid NIB No:

18/JREDA/SHMLS/22-23

POWER OF ATTORNEY

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

Know all men by these presents, we.....(name and address of the registered office) do hereby constitute, appoint and authorize Mr. / Ms. (Name and residential address) who is Presently employed with us and holding the position of.....

as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for **NIB No: 18/JREDA/SHMLS/22-23**, including signing and submission of all documents and providing information / Bids to Jharkhand Renewable Energy Development Agency, representing us in all matters before [Insert Name], and generally dealing with Jharkhand Renewable Energy Development Agency in all matters in connection with our bid for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For:

_____Signature

(Name, Designation and Seal)

Accepted by

..... (Signature) (Name, Designation and Seal)

(Name, Title and Address of the Attorney)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, lay down by the applicable law and the charter documents of the executants (s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

Annexure-8**Details of Orders Received and Executed in Last 7 Years****NIB No: 18/JREDA/SHMLS/22-23**

Details of Orders Received & Executed by the Manufacturer/Supplier for Supply of **SHML** to SNA/ Govt.OrganiZation during Last Seven Years.

SL. No.	Name of Agency/Organization	Details of Work Order / Purchase Order	Order Amount (in Rs.)	Details of Performance/ Completion certificate	Page number of the Work order/ purchase order submitted	Page number of the Performance / Completion certificate submitted

Yours faithfully,

(Signature of Authorized

Signatory)Name:

Designation:

Company

Seal:

Note:

- (a) Attach Photocopies of Purchase Orders
- (b) Attach Photocopies of Certificate of Satisfactory Performance Issued by Concerned Nodal Agency/*PSU*/Govt. Organization
- (c) Separate sheet may be used for giving detailed information in seriatim duly signed with page number. Proof of work order/purchase order and corresponding performance certificate should be submitted/enclosed in the bid.
- (d) If Performance Certificate is not submitted, it must be submitted during acceptance of the L1 price before allotment of Work Order.

Price Bid (To be submitted in.pdf file with price bid)**NIB No: 18/JREDA/SHMLS/22-23**

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

S. No.	Description	Max. Quantity	Quoted Quantity	Unit Rate In Figures (in Rs.)	Total Amount (in Rs.)	Total Amount in Text
1	2	3	4	5	6	7
1	Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.	80				

- 1 Above quoted price for LED based SHML are complete in all respect as per Technical Specifications excluding GST and inclusive of all Central/State/Local taxes & duties, packing, forwarding, transit insurance, loading & unloading, transportation & other charges etc. FOR destination at any site in Jharkhand and inclusive of installation, testing, commissioning, performance testing and training.
- 2 Certified that rates quoted for LED based SHML are as per specifications, terms & conditions mentioned in the bid document.

(Signature of Authorized Signatory)

Name:

Designation:

Company Seal:

(This bid Performa must be submitted duly signed in case separate sheet is submitted)

Format for Submitting Bank Guarantee for Earnest Money Deposit

NIB No: 18/JREDA/SHMLS/22-23

(To be submitted in Rs. 100/- Non-Judicial Stamp Paper to be purchased in the name of the issuing bank)

To
,
The Director,
Jharkhand Renewable Energy Development
Agency 3rd Floor, S.L.D.C. Building,
Kusai Colony,
Doranda, Ranchi -
834502.

WHEREAS (Supplier's name) (hereinafter referred to as "Supplier"),
a company registered under the Companies Act, 1956 and having its registered office at
..... is required to deposit with you, the Purchaser, by way of
Earnest Money Rs. (Rupees only) in connection with
its tender for the work
with reference to Notice Inviting Bid (NIB) No. dated..... as per
specification and terms and conditions enclosed therein.

WHEREAS the Supplier as per "Notice Inviting Bid, point no. 3 Earnest Money" has agreed to establish a Bank
Guarantee in Your favour through us valid up to (date) instead of deposit of earnest
money in cash.

Whereas, you have agreed to accept a Bank Guarantee from us in instead of earnest money in
cash from the Supplier.

1. We.....(Bank) hereby agree and undertake to pay you on
demand the said amount of Rs. (Rupees..... only)
without any protest or demur in the event the Supplier/Tenderer after submission of his tender, resiles from
or withdraws his offer or modifies the terms and conditions thereof in a manner not acceptable to you or
expresses his unwillingness to accept the order placed and/or letter of intent issued on the
Supplier/Tenderer for the work under "Notice Inviting Bid Ref. No.:" **18/JREDA/SHMLS/22-23**".
2. Your decision as to whether the Supplier/Tenderer has resiled from or has withdrawn his offer or has

modified the terms and conditions thereof in a manner not acceptable to you or has expressed his unwillingness to accept the order placed and/or Letter of Intent issued by you on the Supplier/Tenderer for the work under "Notice Inviting Bid Ref. No.: 18/JREDA/SHMLS/22-23 in this regard, shall be final and binding on us and we shall not be entitled to question the same.

3. Notwithstanding anything contained in the foregoing, our liability under this Guarantee shall be restricted to Rs. (Rupees only).
4. This Guarantee shall remain valid and in full force and effect up to.....(Date) and shall expire thereafter unless an intimation is given to the Bank by you earlier in writing discharging us from our obligation under this Guarantee.
5. We shall not revoke this Guarantee during its currency except by your consent in writing.
6. This Guarantee shall not be affected by any change in the constitution of the Supplier/Tenderer or yourselves or ourselves but shall ensure to your benefit and be enforceable against our legal successors or assignees by you or your legal successors.
7. Notwithstanding anything contained herein above unless a demand or claim under this Guarantee is made on us in writing within six months from the date of expiry of this Guarantee we shall be discharged from all liabilities under this Guarantee thereafter.
8. We have power to issue this Guarantee under our Memorandum and Articles of Association and the undersigned who is executing this Guarantee has the necessary power to do so under a duly executed Power of Attorney granted to him by the Bank.

Signed and Delivered

For and on behalf of..... Bank.

(Banker's Name)

Name of Bank Manager:

Address

.....

Contact Person for the NIB

NIB No: 18/JREDA/SHMLS/22-23

[On the letterhead of Bidding Company]

1	Contact Person name for the NIB	
2	Designation	
3	Contact No. (phone & mobile)	
4	Fax No.	
5	e-mail ID	
6	Corresponding address with pin code	
7	Remarks	

(Signature of Authorized

Signatory)Name:

Designation:

Company

Seal:

Annexure-12

Certificate of Delivery of LED Based Solar High Mast Lighting Systems received from the Consignee as Proof of Compliance by the Supplier

NIB No: 18/JREDA/SHMLS/22-23

Certificate Name of Consignee....., Designation: -.....

Name of Department.....

Address of Department.....

.....

Certified that we have received the following materials ofNos. of LED Based

Solar High Mast Lighting Systems:

1. Serial nos. of SPV Modules (200Wp) & Make:.....

2. Serial nos. of Batteries (480AH) & Make:.....

3. Serial nos. of LED Luminaries (40W) & Make:.....

4. Serial nos. of Charge Controller & Make:.....

5. Other materials.....

Above materials have been supplied by M/s..... on

dated.....

Signature of Consignee/JREDA officials along with Seal

Signature of Supplier along with

SealDate.....

Date.....

Annexure-13

**Certificate of Installation of LED Based Solar High Mast Lighting Systems received from
the Consignee as Proof of Compliance by the Supplier**

NIB No: 18/JREDA/SHMLS/22-23

Certificate Name of Consignee....., Designation: -.....

Name of Department.....

Address of Department.....

.....

Certified that M/s has successfully installed..... Nos. of
LED based Solar High Mast Lighting Systems on and are in working
condition since seven days:

1. Serial nos. of SPV Modules (200Wp) & Make.....
2. Serial nos. of Batteries (480 Ah) & Make.....
3. Serial nos. of LED Luminaries (40W) & Make.....
4. Serial nos. of Charge Controller & Make.....
5. Other materials.....

**Signature of Consignee/JREDA official
along with Seal**

Signature of Supplier along with

Seal Date.....

Date.....

Annexure-14

Format for Quarterly O&M and CMC Report

NIB No: 18/JREDA/SHMLS/22-23

[On the letterhead of Bidding Company]

To,

The Director,
 Jharkhand Renewable Energy Development
 Agency 3rd Floor, S.L.D.C. Building,
 Kusai Colony,
 Doranda, Ranchi –
 834502.

Dear Sir,

Sub: Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based Solar High Mast Lighting Systems (SHLMSs) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.

Date of Installation.....
 JREDA Dispatch Order No..... Dated.....
 Place of Supply.....
 Name of Technicians:

Place of System	System Details	Date of Site Visit/CMC	Fault observation	Fault repaired	Status of the system
	Module No.				
	Battery No.				
	Charge Controller No.				
	Luminaire				

Period of CMC.....

(Signature of Consignee)

Name: Designation:

Signature of JREDA Representative

Signature of Agency with Seal

Annexure-15**Warrantee Card****NIB No: 18/JREDA/SHMLS/22-23**

(To be submitted in the official letter head of the company during the supply of the materials)

1.	Name & Address of the Manufacturer/ Supplier of the System	
2.	Name & Address of the Purchasing Agency	
3.	Date of Supply of the System	
4.	Details of PV Module(s) Supplied in the System	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No.	
	(e) Wattage of the PV Module(s) under STC	
	(f) Guarantee Valid Up To	
5.	Details of Battery	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Batch/Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Rated V & AH Capacity at C/20 or C/10 Rated at 27°C	
	(g) Guarantee Valid Up To	
6.	Details of Electronics & Other BOS Items	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Guarantee Valid Up To	
7.	Designation & Address of the Person to be Contacted for Claiming Warrantee Obligations	

(Signature of Authorized Signatory with Name Designation & Company Seal)

Filling Instructions:

1. The LED BASED SHML components will be generally guaranteed as per General Terms & Conditions. The manufacturer can also provide additional information about the system and conditions of Guarantee as necessary. The Guarantee card to be supplied with the system must contain the details of the system supplied as per format given above.
2. During the Guarantee period JREDA/users reserve the right to cross check the performance of the systems.

Annexure-16

Undertaking

NIB No: 18/JREDA/SHMLS/22-23

(To be submitted in the official letter head of the Manufacturer during the PDI)

Sr. No.	Description	Details			
1.	Name of purchaser with Address	Jharkhand Renewable Energy Development Agency, Ranchi, JH - 834002			
2.	Name of the Manufacturer with Address	M/s			
3.	Name of the Installer with Address	M/s			
4.	Details of the product and Quantity and Model No. offer for Inspection and Supply	Product Name	Capacity	Quantity	Sr. Nos.

This is to certify that technical specification of offered quantity during online Pre-Dispatch Inspection (PDI) carried out by JREDA /authorized representatives of JREDA at our manufacturing site are in line with the technical specification of the items/equipments as defined in **NIB 18/JREDA/SHMLS/22-23 and Work Order no:- _____ Date: _____.**

In case of any deviation in the technical specifications of the items/equipments as defined in **NIB 18/JREDA/SHMLS/22-23 and Work Order no:- _____ Date: _____**, supplied by us at the project site, we will replace the whole lot or specified materials at our own cost as per the directions of JREDA.

.....
Name, Sign & stamp of Manufacturer

.....
Name, Sign & stamp of Installer