

**Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand  
Government of Jharkhand**

**Tender Reference No.: NIB: 01/JREDA/SHMLS/24-25**



**Jharkhand Renewable Energy Development Agency (JREDA)**  
3rd Floor, S.L.D.C. Building, Kusai Colony, Doranda, Ranchi-834002.  
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-833672.  
Ph.: 0651-2491161, Fax: 0651-2491165,  
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**e-Procurement Notice**

**Tender reference no.: 01 /JREDA/SHMLS/24-25**

**Dated:05.06.2024**

1	Name of the work	Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.
2	Total quantity (Nos.)	730 Nos.
3	Estimated cost (Rs.)	20,00,00,000/- <b>inclusive GST</b>
4	Period of Completion	04 (Four) Months
5	Contract Period from the date of ITC	05 (Five) Years
6	Date of publication of NIT on website: <a href="http://jharkhandtenders.gov.in">http://jharkhandtenders.gov.in</a>	<b>10.06.2024 (Monday)</b>
7	Date & time of Pre-bid meeting	<b>19.06.2024(Wednesday) at 2.00 P.M.</b>
8	Last date & time for receipt of online bids	<b>01.07.2024 (Monday) up to 05:00 PM</b>
9	Submission of Bid fee and EMD through Online Via SBI Payment Gateway of Jharkhand Tenders.	<b>01.07.2024 (Monday) up to 5.00 P.M.</b>
10	Technical Bid Opening Date	<b>03.07.2024(Wednesday) at 3.00 P.M.</b>
11	Name & address of office inviting tender	Director, Jharkhand Renewable Energy Development Agency (JREDA) 3 <sup>rd</sup> Floor, SLDC Building, Kusai, Doranda, Ranchi- 833672 (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](http://www.jreda.com).  
Further details can be seen on website: <http://jharkhandtenders.gov.in> & [www.jreda.com](http://www.jreda.com)**

**Sd/-  
Director  
JREDA**

**Section -1**  
**Tender reference no.: 01/JREDA/SHMLS/24-25**  
**List of Important dates & details of Bids**

Sl.No	Name of work	Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED-based solar High Mast Lightning systems (SHMLS) including Remote Monitoring System ( RMS ) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand
1.	Tender reference no.	<b>01/JREDA/SHMLS/24-25</b>
2.	Period of contract	05 (Five) Years from date of ITC .
3.	Work completion period	04 (Four) Months from the date of DI .
4.	Mode of submission of tender	Online through <a href="http://www.jharkhandtenders.gov.in">www.jharkhandtenders.gov.in</a>
5.	Tentative Quantity	730 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 the resources available. The estimated cost is about Rs. 20.00 Crores (Including GST)
6.	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.
7.	Submission of Bid fee) (non-refundable) through Online Via SBI Payment Gateway of Jharkhand Tenders.	❖ For General Bidders: Rs. 11,800/- (inclusive GST For MSEs of Jharkhand ❖
8.	Submission of EMD (Refundable/adjustable) through Online Via SBI Payment Gateway of Jharkhand Tenders. {This is mandatory}	❖ For General Bidders: Rs. 2,40,000/- ❖ For MSE of Jharkhand only: NIL
9.	EMD Validity	12 (Twelve) months from the last date of receipt of bids.
10.	Date of publication of NIT on website: <a href="http://jharkhandtenders.gov.in">http://jharkhandtenders.gov.in</a>	❖ 10.06.2024(Monday)
11.	Date & time of Pre-bid meeting	❖ 19.06.2024 (Wednesday) at 2.00 P.M.
12.	Period of downloading of bidding documents	❖ 10.06.2024 (Monday) up to 05:00 PM ❖ 01.07.2024 (Monday) up to 05:00 PM
13.	Bid online submission	❖ 01.07.2024 (Monday)
14.	Technical bid opening date	❖ 03.07.2024 (Wednesday) at 3.00 PM
15.	<b>Authority inviting bids</b>	Director, Jharkhand Renewable Energy Development Agency (JREDA)
16.	<b>Address</b>	Jharkhand Renewable Energy Development Agency (JREDA) 3 <sup>d</sup> Floor, SLDC Building, Kusai, Doranda, Ranchi 834002. Ph. No: Website: <a href="http://www.jreda.com">www.jreda.com</a> Email: <a href="mailto:info@jreda.com">info@jreda.com</a>

The bid to be prepared and submitted by the bidder shall consist of the following documents:

**A. Technical Bid (First Envelope): Online Submit only**

**B. Price Bid (Second Envelope): Online Submit only**

**1. 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. Online Payments towards Tender fee.
  - ii. Online payments towards EMD.
  - iii. Scan Copy of Challan / Receipt of Tender Fee and EMD submission through Online Via SBI Payment gateway of Jharkhand Tender.
  - iv. Firm's registration certificate company/Pvt. Ltd./ Proprietorship firm/Partnership/corporation/ LLP.
  - v. **Registration certificate of MSMEs of Jharkhand (Certificate issued by GM DIC Industry Dept. for system/components manufacturing)**
  - vi. A bidder can either apply under the General category or in the MSEs category therefore bidder has to submit an undertaking which should clearly mention the category (General/MSEs of Jharkhand). Bid will be evaluated under the provision of that particular category.
  - vii. **In case the bidder wants to avail the benefit of MSEs of Jharkhand then bidder will be submitted:**
    - a) Registration certificate of MSEs of Jharkhand/ UDYAM issued by Industry Dept. duly verified by GM-DIC mentioning whether unit is existing & functional.
    - b) A registered manufacturing company/firm/corporation in India Including MSME of Jharkhand of least one of the major components namely Modules or Battery or Luminary (Confirming to relevant National/International standards).
    - c) The bidder shall furnish the relevant certificate of the concerned industry department certificate indicating that they are manufacturers of SPV Modules, Battery, or Luminary along with a test report as per NIB.
  - viii. Test Report of SPV Module, Battery, Pole, and Luminary for all parameters as described in the technical specification of this NIB along with an authorization letter from the manufacturer in case the bidder is not the manufacturer of that component.
  - ix. Only those models of Solar PV Mono-crystalline Module manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have the following minimum 19 % Mono-crystalline Module efficiency.
  - x. Only those Lithium Ferro Phosphate Battery Manufacturers that comply with the BIS Standards will be used in Solar High Mast Lighting Systems (120 AH,12.8 V).
  - xi. Luminary Test Certificate 40W/60W LM-79 & LM -80 Certificate approved by NABL, NISE or MNRE accredited Laboratory. **At the time of PDI request bidder must submit the 60 W Luminary LM-79 Certificate approved by NABL/NISE / MNRE accredited Laboratory.**
  - xii. Solar Highmast System should be integrated with Remote Monitoring system.
  - xiii. **List of Manufacturers make as per the above Technical Specifications.**

List of Manufacturer				
Sr. No.	ALMM Solar Mono-crystalline Module ( Mono-crystalline-Silicon technology	Luminary 60W	SHMLS Pole	Battery

	> 19 %)Solar Module		( 9 Mtr.)	120AH , 12.8 V
01				
02				

- xiv. ITR for the assessment year AY 2021-22, 2022-23 & 2023-24.
- xv. Financial Statements (i.e., Balance sheet & Statement of Profit or Loss) for the last 3 financial years FY 2020-21, 2021-22 & 2022-23 certified by a Chartered Accountant.
- xvi. Annual Turnover (FY-2020-21 ,2021-2022 & 2022-23) certified by Chartered Accountant
- xvii. Net Worth certificate (FY-2020-21,2021-2022 & 2022-23) certified by Chartered Accountant
- xviii. GST certificate.
- xix. PAN Card.
- xx. List of current litigant cases in which the bidder is involved (in format given in ITB).
- xxi. An affidavit for non-engagement of related persons.
- xxii. Authorized address & contact numbers of the bidder as per instruction in the Notice Inviting Bid duly digitally signed.
- xxiii. Bid Capacity Declaration.
- xxiv. Uploaded documents of valid successful bidders will be verified with the original before signing the agreement.
- xxv. NIB is not to be uploaded by the bidder. The bidder must give an affidavit stating agree/disagree on the conditions in the NIB. The bidders, who disagree on the conditions of NIB, cannot participate in the tender.
- xxvi. Annexure-1: Covering letter.
- xxvii. Annexure-2: Checklist for Technical Bid.
- xxviii. Annexure-3: Information about the bidding firm.
- xxix. Annexure-4: Declaration by the bidder.
- xxx. Annexure-5: Annual Turnover.
- xxxi. Annexure-6: Net Worth certificate.
- xxxii. Annexure-7: Format for power of attorney for signing of the bid.
- xxxiii. Annexure-8: Proof of Supply Installation & Commissioning of Solar High Mast Lighting/Solar Street Light System in any SNA/Govt. organization/PSU in the last seven years. Attach a copy of the Work Order/Purchase Order & Corresponding Performance Certificate/completion certificate.
- xxxiv. Annexure-11: Contact Person for the NIB.
- xxxv. JREDA has the authority to verify the above-mentioned Annexures. If any manipulation in data is found, JREDA has the authority to Debar/ Blacklist the bidder from JREDA.
- xxxvi. The Bidder participating in this tender must submit the JREDA Contractor Registration Certificate.
- xxxvii. The duly filled-in & digitally signed Price Bid (.xls and .pdf) part will not be submitted in the Technical Bid. In case the Price Bid is submitted along with the technical part, the bidder will be disqualified.
- xxxviii. NIB is not to be uploaded by the bidder. The bidder must give an affidavit stating agree/disagree on the conditions in the NIB. The bidders, who disagree on the conditions of NIB, cannot participate in the tender.

**B – Financial Bid – (Finance Cover)**

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

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



## Section -2

### Tender reference no.: 01 /JREDA/SHMLS/24-25 Instructions to Bidders

#### **Detailed instructions & documents to be furnished for online bidding**

1. The guidelines to submit a bid online can be downloaded from the website <http://jharkhandtenders.gov.in>.
2. Interested bidders can download the bid from the website "<http://jharkhandtenders.gov.in>".
3. To participate in the bidding process, bidders must get a 'Digital Signature Certificate (DSC)' as per the 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 vendor (CCA). Bidders, who already possess valid Digital Certificates, need not procure new Digital Certificate.
4. The bidders must submit their bids online in electronic format with a Digital Signature. The bids without digital signatures will not be accepted. No proposal will be accepted in physical form.
5. Bids will be opened online as per the schedule mentioned in Section 1.
6. Bidders should get ready with scanned copies of the cost of documents & Online EMD as specified in the tender document. Before submission of online bids, bidders must ensure that a scanned copy of all the necessary documents has been attached to the bid.
7. Receipts of Online Submission of EMD & Bid Fee specified in the tender documents should be online (scanned copies) otherwise tender summarily will be rejected.
8. Uploaded documents of valid successful bidders will be verified with the original before signing the agreement. The valid successful bidder must provide the originals to the concerned authority. The department will not be responsible for delays in online submission due to any reason.
9. All the required information for the bid must be filled out and submitted online. If the bid is not found to be uploaded online to the website (<http://Jharkhandtenders.gov.in>), No hard copy is required to be submitted to the office of JREDA. **Please note that the Bid is not to be submitted in physical form.**
10. The quoted rates should be in line with the "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 document
12. Note: The agency needs to submit the amount of ₹ . 11,800/- (Inclusive of GST@ 18%) online mode via SBI payment gateway on <https://jharkhandtenders.gov.in>. for the participation in the NIB in between all working days from Date: 30.04.2024 up to 05:00 PM

#### **IMPORTANT NOTE TO BIDDERS:**

**Timely Submission of an offer to JREDA:** The bidders must submit their bids online in electronic format with a digital signature along with a Scan Copy of Challan / Receipt of Tender Fee and EMD submission through Online Via SBI Payment gateway of Jharkhand Tender. The bids without digital signatures will not be accepted. No proposal will be accepted in physical/offline form, the offer will not be considered and any further communication in the matter will not be entertained. **Please note that the Bid is not to be submitted in physical form.**

The bid will not be accepted in any case after the due date and time of receipt of the Tender, irrespective of delay due to any reasons, circumstantial or otherwise and JREDA does not assume any responsibility for late receipt of the Tender.

1. All interested parties are requested to understand the Tender in detail to comply with JREDA's requirements including but not limited to the fees and deadlines, selection criteria, selection methodology, scope of work, and minimum technical standards. They shall strictly abide by all terms prescribed in this Tender and provide accurate information to the best of their knowledge without misleading the Company to be



considered for participation in this Project.

2. It is **mandatory** for all the bidders to submit their Technical and Financial bids online only via the e-tendering portal.
3. **Technical Bid (techno-commercial Bid):** All the bidders must submit their Technical Bid (Techno-commercial Bid) Scanned copy of the documents & Transition receipt of the Tender Fee & EMD through online (e-tendering) at the scheduled time. Technical Bid in hard copy (physical form) shall not be considered.
4. Tender Fee and EMD shall be submitted through Online Via SBI Payment gateway of Jharkhand Tenders.
5. It is mandatory for all bidders to submit their Price-Bid only through online (e-tendering).
6. The Price bid submitted in physical form will not be considered for its opening. Only online submitted price bids will be considered for evaluation.
7. Any technical/commercial query about this Tender should be referred to:

**Director,**

**Jharkhand Renewable Energy Development Agency (JREDA)**

**3rd Floor, SLDC Building, Kusai Colony Doranda,**

**Ranchi-834 002, Jharkhand.**

**Ph: 0651- 2491 161**

**Email: info@jreda.com Website: www.jreda.com**

8. JREDA reserves the right to accept/reject any or all tenders without assigning any reasons thereof. Bidders are requested to be in touch with the above-mentioned website till the opening of the price bid to know the latest status.

**A. Details of documents to be furnished for online bidding**

Scanned copies of the following documents are to be uploaded in .pdf format on the website

**B – Financial Bid – (Finance Cover)**

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

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

### **Section-3**

#### **Notice Inviting Bid**

**Tender reference no.: 01 /JREDA/SHMLS/24-25**

**Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand**

#### **Preamble:**

As part of Solar Photovoltaic Programme, JREDA invites bid for “**Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System ( RMS ) 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 a quantity less than the minimum lot size and more than the maximum lot size.**

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

**The bidder should fulfill the following technical eligibility conditions: -**

1. The bidder should be a registered company /Pvt. Ltd. / Proprietorship/firm/Partnership/corporation/ LLP in India. Authorized dealer’s companies/firm/corporation or subcontractors are not eligible to participate.
2. Bidders claiming benefit of Micro & Small Enterprises (MSEs) of Jharkhand: -
  - i. The manufacturing unit is located within the State of Jharkhand. The Head Office or Corporate Office of such registered unit/company/enterprise is within the territorial jurisdiction of Jharkhand.
  - ii. SE is registered with the Directorate of Industries/District Industries Centre, Khadi and Village Industries Board, Directorate of Handloom, Sericulture and Handicraft of Jharkhand Govt, Industrial Area Development Authorities and National Small Industries Corporation Ltd .
  - or
  - iii. SEs having Udyog Aadhar Number issued by Ministry of Micro, Small and Medium Enterprises, Govt to be duly verified, whether the unit is existing and functional by GM, DIC/MD, Industrial Area Development Authorities/Director, Industries, GOJ”
  - iv. The MSEs /other Enterprises and units must be registered under the Jharkhand Goods and Services Tax (JGST) Act 2017 or The Central Goods & Services Tax (CGST) Act 2017.
  - v. Tender Documents may be downloaded from the website (<http://jharkhandtenders.gov.in>) & [www.jreda.com](http://www.jreda.com). To view, download, and for any other updates regarding this Tender, kindly check [www.jreda.com](http://www.jreda.com). To participate in the bidding process, the bidder must get a ‘Digital Signature Certificate’ as per the Information Technology Act – 2000 to participate in online bidding. This certificate will be required for digitally signing the bid. Bidders, who already possess valid Digital Certificate, need not to procure new Digital Certificate.

- vi. he MSE/other enterprise and unit must have encouraged local people in employment.
- vii. he MSE/other enterprise and unit must have complied with all statutory and legal formalities of concerned regulators/Act.
- viii. registered manufacturing company/firm/corporation in India (Including MSME of Jharkhand) of at least one of the major components namely Modules or Battery or Luminary (Confirming to relevant National/International standards). The bidder shall furnish either the relevant certificate or the concerned industry department certificate indicating they are the manufacturers of Modules or Battery or Luminary.
- ix. he bidder should be a functional organization. To substantiate this claim, the bidder should submit the copy of the audited balance sheet with profit & loss account for last 3 years or from the date of establishment to 31.03.2023, whichever is applicable.
- x. egistered Micro, Small & Medium Enterprise (MSME) of Jharkhand should submit the attested copy of Registration given by the Industry Department, Govt. of Jharkhand and GM, DIC/MD, Industrial Area Development Authorities/Director, Industries, GOJ”.

**3. The bidder must have:**

**3.1** A valid GST Registration and PAN

**3.2 Contractor Registration in JREDA is mandatory to participate in this tender.**

**Technical Requirements:**  
**Tender reference no.: 01 /JREDA/SHMLS/24-25**

- a. This Ministry vide its O.M. No.283122/2023-GRID SOLAR/Pt dated 10.05.2023 and O.M. of even no. dated 22.03.2024 inter-alia directed that only such models of Mono-crystalline-Silicon technology-based Solar PV Modules Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have the following minimum Mono-crystalline Module efficiency **19 %**.
- b. Test certificate & BIS of Lithium Ferro Phosphate Battery 120 AH,12.8 V to be used in Solar High Mast Lighting System.
- c. Test certificates of solar High-mast Pole should be submitted for the Solar High Mast Lighting System.
- d. Structural drawing including foundation drawing and electrical drawing of the High Mast Pole from the installer should be submitted duly verified and certified by the Structural Engineer / Chartered Engineer along with verified by the Manufacturer.
- e. Test certificate by NABL Accredited Labs of Luminaries should be submitted in Solar High Mast Lighting System
- f. Batteries should fulfill the required specification given in the Technical Specification of the Bid. Capacity Test, Charge/Discharge efficiency, and Self-Discharge should be as per MNRE requirements, and valid test reports with authorization letter of the manufacturer should be uploaded as Annexure.
- g. The certificate should be in the form of an undertaking letter from the manufacturer complying with all the technical specifications of the battery.
- h. The offered batteries shall be as per BIS of any reputed brand approved.
- i. The Participant should have valid GST and PAN.
- j. 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.
- k. Test Report of PV Module, Battery, Pole, and Luminary for all parameters as described in the technical specification of this NIB along with an authorization letter from the manufacturer in case the bidder is not a manufacturer of that component.
- l. Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have a minimum Mono-crystalline Module efficiency of > 19%.
- m. Battery (Lithium Ferro Phosphate Battery 120 AH,12.8 V) Test certificate complies with the BIS Standards to be used in Solar High Mast Lighting System.
- n. Luminary (40 W / 60 W) test certificate complies with LM80 & LM79.
- o. Certificate by MNRE Accredited Labs of Luminaries should be submitted in Solar High Mast Lighting System.

**Award of Work and Empanelment Procedure after the opening of Financial Bid:**

- i. The price of Unit SHMLs is the rate contract.
- ii. The bidders who are found to be successful in technical bids shall be empaneled for solar high mast light work till the financial opening of the tender.
- iii. After opening of financial Bid, the lowest rate i.e., the L1 rate is discovered for the rate of unit quantity quoted by the bidders would be the appropriated rate for awarding the work.

**In case the price Bid is submitted with the technical part, the bidder will be disqualified by JREDA.**

- iv. 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 & have a running production unit in Jharkhand and should fulfill all the criteria as fixed in Jharkhand Procurement Policy 2014.

- v. JREDA will allot the work to the L1 bidder at the L1 rate based on the quoted quantity & bid capacity, whichever is lower.
- vi. Other bidders who technically qualify and accept the L1 rate shall be empaneled and quantity shall be allocated as per available capacity.
- vii. 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.
- viii. Quantity of SHMLS shown in the bid is only indicative which may increase or decrease as per the requirement of JREDA.

**Section-4**  
**INSTRUCTIONS TO BIDDERS**  
Tender reference no.:01 /JREDA/SHMLS/24-25

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## General

### Instructions to Bidders (ITB)

Tender reference no.: 01/JREDA/SHMLS/24-25

#### **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 the identification number of the works are 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 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 “Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lighting systems (SHMLS) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.
- 2.2 **Government 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 Tender (NIT).
- 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, or authority by whatever name called under the works.
- 3.3 **The Bidders who are participating in this tender must have to submit the contractor registration Certificate issued by JREDA.**
- 3.4 **The Bidders who are participating in this tender must have to submit the Firm’s registration certificate.**

#### **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 the 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) ITR for the assessment year AY 2021-22, 2022-23 & 2023-24.
  - e) Financial Statements (i.e., Balance sheet & Statement of Profit or Loss) for the last 3 financial years FY 2020-21, 2021-22 & 2022-23 as certified by Chartered Accountant
  - f) Annual Turnover (FY 2020-21 ,2021-2022 & 2022-23) as certified by Chartered Accountant

- g) Net Worth certificate (FY-2020-21, 2021-2022 & 2022-23) as certified by Chartered Accountant
- h) Authority to seek references from the Bidder's bankers;
- i) 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 ventures are not allowed.**

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

The performance of agency will be evaluated based on recorded poor performance regarding not carrying out the Comprehensive Maintenance Contract (CMC) against the similar work (Solar High Mast Light & Solar Street Light) awarded by JREDA. The evaluation period for CMC will be from previously executed work by the agency to till date.

**The evaluation period of CMC for Performance evaluation will be as follows: -**

- i. Works executed during FY 2020-21 will be for Five Years from the date of installation (i.e., from 01.04.2020 to 31.03.2021).
- ii. Works executed during FY 2021-22 will be for four Years from the date of installation (i.e., from 01.04.2021 to 31.03.2022).
- iii. For the work executed during FY 2022-23 will be for three Years from the date of installation (i.e., from 01.04.2022 to 31.03.2023).
- iv. Works executed during the Year 2023-24; performance evaluation will be done based on successful installation & commissioning date.
- v. Failure to achieve any one of the above will lead to disqualification/rejection of the Bid even if the bidder is eligible for participation.
- vi. The performance of the Agency will be evaluated on similar work (Solar High Mast Light & Solar Street Light) awarded by JREDA.

**Notes:**

- I. The Competent officer of JREDA is authorized to issue the Performance Certificate.
- II. Those bidders who are not working in JREDA and working in another State will submit a Performance certificate issued by the Competent Authority.
- III. Changes made as above in NIB may be read accordingly for similar changes in related technical specifications.
- IV. The Corrigendum shall form an integral part of the tender documents.



#### 4.4.A Turnover Requirement:

**For General Bidder:** Average Annual financial turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost(80 Nos.) /Quoted Quantity of Bidding Capacity derived from the last three financial years ending on 31.03.2023 on the basis of audited annual accounts.

**For MSEs of Jharkhand:** Bidder should have the average Annual Turnover of 10% of Bidding Capacity derived from the last three financial years ending on 31.03.2023 on the basis of audited annual accounts.

*The certificate should be issued by CA who has performed audit of accounts with UID no. as per the Performa given in 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( 80 Nos.) / Quoted Quantity Cost.

B: - Unit has not completed 2 Year – should have annual turnover at least 10% of estimated cost ( 80 Nos.) / 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 ( 80 Nos.) / Quoted Quantity Cost.

#### Net worth Requirement:

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

*The net worth certificate should be issued by CA with UID no. as per the Performa given in Annexure-6*

#### 4.4.B Experience Requirement

##### For General Bidder:

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

a. Three similar completed works each costing not less than the amount equal to 40% of the estimated Project cost( 80 Nos.) / Quoted quantity cost.

Or

b. Two similar completed works each costing not less than the amount equal to 50% of the estimated Project cost( 80 Nos.) / Quoted quantity cost.

Or

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

**Note: - Similar work means Supply, Installation, Testing & Commissioning of Solar Mast Light/ Solar Street light system along with work completion certificate from the SNA / Govt.**

**Organization / PSU will be considered as Similar Completion work.**

For MSME of Jharkhand:

**One similar completed work costing not less than the amount equal to 10% of the estimated Project cost (80 Nos.)/ Quoted quantity from PSU/Govt. Organization/ SNA in last seven years.**

A copy of the work order and Completion certificate indicating the successful execution of the work should be enclosed.

**For New MSEs of Jharkhand:** New-MSME of Jharkhand shall be exempted from the Experience requirement.

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

#### **4.4.C Earnest Money Deposit (EMD):**

**For General Bidders:**

**Submission of EMD: -Rs 2,40,000/-Online Via SBI Payment Gateway of Jharkhand Tenders**

**For New MSME/MSME of Jharkhand: Nil**

The bidders must submit their bids **Online** in electronic format with a digital signature along with a scanned copy of Challan/Receipt of Tender Fee and EMD submission through **Online Via SBI Payment gateway of the Jharkhand Tender.**

(a) **Each bidder must produce:**

- i) PAN
- ii) An affidavit that the information furnished with the bid document is correct in all respects.
- iii) Such other certificates as defined in the Notice Inviting Bid (NIT). Failure to produce the certificates shall make the bid non-responsive.
- iv) Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:  
Made misleading or false representations in the forms, statements, affidavits, and attachments submitted as proof of the qualification requirements;  
or  
Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, and financial failures.
- v) Participated in the previous bidding for the same work and 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.

**5.2**

In exceptional circumstances, before the expiry of the original time limit, the JREDA may request the bidders for an extension of the period of validity for a specified additional period. The request and the bidder's

responses shall be made in writing or by email. 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.

**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, the bidder may visit the site after the allocation of the site.

**B. BIDDING DOCUMENTS:**

**8.** Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and the addenda issued by 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.

**Instruction to Bidders**  
**Tender reference no.: 01/JREDA/SHMLS/24-25**

**1. Clarification on Bid Documents and Pre-bid Meeting:**

- 1.1 A prospective Bidder requiring any clarification of the bid documents may inform to JREDA in writing at the JREDA’s address indicated in the Notice Inviting Tenders. JREDA's response will be uploaded in the form of corrigendum on our website [www.jreda.com](http://www.jreda.com).
- 1.2 Pre-bid meeting will be held on **19.06.2024 (Wednesday) at 2.00 P.M.** in the Conference Hall of JREDA. The bidder or his authorized representative may attend the meeting.
- 1.3 The purpose of such a meeting will be to clarify issues on any matter that is raised at that stage.
- 1.4 Pre-BID queries are accepted by e-mail at [info@jreda.com](mailto:info@jreda.com) within two working days after the Pre-BID meeting.
- 1.5 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 under Clause 10 of ITB on the website.

**2. Amendment of Bidding Documents**

- 2.1 Before the deadline for submission of bids, the JREDA may modify the bidding documents by issuing an addendum/corrigendum.
- 2.2 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.

**3. Preparation of Bids**

**3.1 Language of Bid**

The bid prepared by the bidder and all correspondences and documents relating to the bid, exchanged between the bidder and the Purchaser shall be written in the English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages. Failure to comply with this may disqualify a bid. For purposes of interpretation of the bid, the English translation shall govern.

**Documents Comprising the Bid**

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

**1) EMD & Tender Fee**

Submission of Bid Fee through Online Via SBI Payment Gateway of Jharkhand Tenders.

**Technical Details & Declaration**

- a) Proposed work Programme (work method, schedule, and financial flow), description, and charts as necessary (Duly to be signed digitally) to comply with the requirement of the Bidding Document.
  - b) A scanned copy of an Affidavit by the Bidder that he/she has accepted the S.B.D.
2. Scanned copies of the following documents are to be uploaded in .pdf format on the website <http://Jharkhandtenders.gov.in>.

**As per Section-1 Page-3,4,5**

## **B – Financial Bid – (Finance Cover)**

- v) Duly Quoted & digitally signed Bill of Quantity (BOQ) in the file supplied by JREDA in .xls format.
- vi) 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

## **4. Bid Prices**

- 4.1 The Contract shall be for the whole Works, as described in Clause 1.1 of ITB.
- 4.2 The Bidder shall adopt the Item (Unit) Rate Method as specified in the Notice Inviting Bid only the same option is allowed to all the Bidders.
- 4.3 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.
- 4.4 The unit rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment.
- 4.5 Tenderers should quote their unit rates considering the wide variation of site conditions, and variation in price of different components during the year 2022-23 and keeping the quantum and quality of work in mind. If JREDA anticipates that the rate is abnormally low or high, the tender may be canceled.

## **5. Currencies of Bid and Payment**

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

## **6. Bid Validity**

- 6.1 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.
- 6.2 In exceptional circumstances, before the expiry of the original time limit, the JREDA may request the bidders for an extension of the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by email. 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 needed 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.

## **7. Earnest Money**

- 7.1 The Bidder shall furnish, as part of the Bid, Earnest Money, in the amount specified in the Notice Inviting Bid.
- 7.2 The Bidder shall furnish, as part of its Qualification Proposal, the payment proof of the online submitted EMD for an amount as mentioned in NIB. Bidder shall provide deposit bid security in online mode as per rules of e-tendering portal. A Standard Operating Procedure for online collection of Tender Fee and Earnest Money Deposit by Government of Jharkhand can be downloaded from [www.Jharkhandtenders.gov.in](http://www.Jharkhandtenders.gov.in) as a part of this tender document. 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 non-responsive.
- 7.3 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.
- 7.4 The Earnest Money of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposit.
- 7.5 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 of the Agreement, and/or furnishes the required Performance Security and Security Deposit.

## **8. Alternative Proposals by Bidders**

- 8.1 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 Online Bids**

For submission of the Qualification Proposal/technical Proposal and the Financial Proposal, the E-bidding Portal will provide respective categories, in which the Bidders will be required to submit their Proposals by providing the relevant information and uploading the relevant documents forming part of the Proposal. 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:** Technical bid shall comprise of the documents mentioned as per ITB and technical bid shall be submitted online. Technical bid will open as per date and time of Technical Bid opening as mentioned within ITB. 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.

## **9. Deadline for Submission of Bids**

- 9.1 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.
- 9.2 The JREDA may extend the deadline for submission of bids by issuing an amendment under 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**

### **10. Bid Opening**

- 10.1** The JREDA will open the bids received within the timeline given in the NIT. 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.
- 10.2** 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 is incomplete, the remaining bid documents will not be opened, and the bid will be rejected.
- 10.3** In all other cases, the amount of Earnest Money, forms, and validity shall be announced. Thereafter, the bidder's names and such other details as the JREDA may consider appropriate will be announced by the JREDA at the opening.
- 10.4** The JREDA will prepare minutes of the Bid opening, including the information disclosed to those present under Clause 20.3 of ITB Evaluation of the technical bids concerning bid security, qualification information, and other information furnished in Part-I of the bid according 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.
- 10.5** The JREDA shall inform by email, the bidders, whose technical bids are found responsive, the 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 their representative, may attend the meeting of opening of financial bids.
- 10.6** 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 that is not read out and recorded, will not be considered into account in Bid Evaluation.
- 10.7** The financial bids of the General bidders and Experienced MSME bidders will be opened.
- 10.8** The JREDA shall prepare the minutes of the opening of the Financial Bids.
- 10.9** Price part will not be open for MSEs having no work Experience in similar works as defined in NIB.

### **11. Process to be Confidential**

- 11.1** 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.

### **12. Clarification of Bids and Contacting the JREDA**

- 12.1** No Bidder shall contact the JREDA on any matter relating to its bid from the time of the bid opening to the time till the contract is awarded.
- 12.2** Any attempt by the bidder to influence the JREDA's bid evaluation, by any means, bid evaluation, bid



comparison contract award decision may result in the rejection of his bid.

### **13. Examination of Bids and Determination of Responsiveness**

**13.1** 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.

**13.2** 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.

**13.3** 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 non-conforming deviation or reservation.

### **14. Corrections of Errors**

**14.1** 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 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.

**14.2** The amount stated in the Bid will be adjusted by the JREDA following the above procedure for the correction of errors and shall be considered 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 following Clause 16.6(b) of ITB.

### **15. Evaluation and Comparison of Bids**

**15.1** The JREDA will evaluate and compare only the bids determined to be substantially responsive under Clause 23 of ITB.

**15.2** In evaluating the bids, the JREDA will determine for each Bid the evaluated Bid price by adjusting the Bid price by correcting, if any, for errors according to Clause 24 of ITB.

**15.3** If the Bid of the successful Bidder is seriously unbalanced concerning the Engineer's estimate of the cost of work to be performed under the contract, the JREDA may require the Bidder to produce a 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 analysis, the JREDA may require that the amount of the performance security outlined 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.

- 15.4** After its evaluation, the JREDA may require that the amount of the performance security outlined 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**

### **16. Award Criteria**

- 16.1** 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 under the provisions of Clause 3 of ITB, and (b) qualified under the provisions of Clause 4 of ITB; and as per clause 14 of Notice Inviting Bid (Section-3).

### **17. JREDA's Right to accept any Bid and to reject any or all Bids**

- 17.1** Notwithstanding Clause 27 above, the JREDA reserves the right to accept or reject any bid to cancel the bidding process and reject all bids, at any time before the award of the 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.

### **18. Notification of Award and Signing of Agreement**

- 18.1** The bidder whose Bid has been accepted will be notified of the award by the JREDA before the expiration of the Bid validity period by email and by registered letter. This letter (hereinafter and in 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").
- 18.2** The notification of award will constitute the formation of the Contract, subject only to the furnishing of the performance security under the provisions of Clause 30.
- 18.3** The Agreement will incorporate the NIT document, Work order & subsequent amendments between JREDA and the successful Bidder. After the submission of the security deposit, the contract will be signed by the JREDA and the successful Bidder.
- 18.4** 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.

### **19. Security Deposit:**

- 19.1** Successful General bidder shall submit a security deposit @10% of the allotted work order (including GST) value in the form of DD/BG/FDR valid for one year on or before 15 days from issuing the work order. If the Bank Guarantee is not being submitted within the stipulated period from the date of issuing the work order, then JREDA shall cancel the work order.
- 19.2** For MSME of Jharkhand: Security Deposit should be @1% of Work Order value (including GST) applicable in the form of DD/BG/FDR.

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

**19.4** 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 the Bank Guarantee, bidders shall submit fresh or extend the period of validity of the 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 (including GST) in the form of a 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 (including GST) 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 the warranty period.

**31.4** The Security Deposit/Performance Guarantee shall be submitted in order of a bank guarantee in favor 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 forfeiting of EMD and cancellation of the work order.

**31.6** If the 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 blacklisted for future awards of work.

**31.7** This Bank Guarantee (Security Deposit & Performance Guarantee) must include SFMS (Structural Financial Management System) as per JREDA Bank Details Which is as:

**Name of Bank: State Bank of India**

**IFSC Code: SBIN0009010**

**Branch Details: Ashok Nagar Branch, Ranchi**

### **32 Five Years Comprehensive Maintenance Contract (CMC):**

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

**32.2** The Comprehensive Maintenance Contract shall include a servicing & replacement guarantee for parts and components (such as battery, electronics, BMS, PV modules, and other hardware) of LED-based SHML for five years from the date of installation. **PV modules & SHMLs Pole shall be warranted for 25 years, and Bidder should submit the Undertaking of Warranty Certificate of PV Module & SHMLs Pole for minimum 25 Years.** Battery & Luminary should be warranted for a minimum life of 5 years. The date of the CMC maintenance period shall begin on the date of the actual commissioning of LED-BASED SHML. The contractor must carry out CMC regularly and submit the reports to JREDA quarterly. Failure to submit

quarterly CMC including RMS reports timely shall invite a penalty of @ **Rs. 1000/-** per week after the end of the one month to the end of the quarter. If the successful bidder is found to be not doing CMC work continuously for two quarters, then the bidder's performance guarantee will be forfeited, the work order shall be canceled and the 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 every three months and shall include activities such as cleaning and checking the health of the SPV system, cleaning Mono-crystalline Module surface, tightening all electrical connections, regular checks to identify any leakage of current, changing of tilt angle of Mono-crystalline 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 submitted at the JREDA office time to time. CMC documents should be certified by the Beneficiary. The Comprehensive Maintenance Contract shall include a 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 the CMC maintenance period shall begin on the date of actual commissioning of LED-BASED SHML. The contractor must carry out CMC regularly and submit the report to JREDA quarterly. After the successful commissioning of the system, the CMC report/Checklist/ Maintenance schedule should be submitted to JREDA and approved by a JREDA representative.

Breakdown, Damage, or Failure of Module/ Luminaries/Battery/RMS System/Pole should be repaired within 7 days. For carrying out effective and smooth maintenance of the Solar High Mast Lighting System, a reasonable number of service centers must be established by the successful bidders before the commissioning of the systems. **Quarterly Device Connectivity & Data Availability of RMS systems should be ensured by Contactor.**

Failure to submit quarterly CMC reports/RMS Reports timely shall invite a 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 the bidder's performance guarantee will be forfeited, the work order shall be canceled and the bidder will 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 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/RMS failure till the same is rectified for Solar High Mast Lightings.

**Hand Over take Over: Qualify Agency should hand over the installed site to JREDA in working condition with after completion the of CMC after five Years from the date of commissioning.**

**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:

<b>1</b>	<b>Letter of award</b>	<b>X Day</b>
<b>2</b>	<b>Submission of Security Deposit and Signing of Agreement</b>	<b>Within X+15 Days</b>
<b>3</b>	<b>PDI Offer by the firm</b>	<b>X+90 Days</b>
<b>4</b>	<b>Supply, installation &amp; Commissioning of SHML at Sites.</b>	<b>Within 04 Month or 120 Days from letter of DI issued.</b>

## Section-5

### General Terms & Conditions

NIB No: 01/JREDA/SHMLS/24-25

#### 1. Introduction:

The instructions/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 “**Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand**

**Government 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: The 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 the 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 the 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. The successful bidder shall inform JREDA at least 15 days in advance of scheduled 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 (**20 % of the project cost**). 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 / E-way Bill / dispatch clearance.
- iii. Duly filled **Annexure-11** 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.

**6.2** **0%** of the 1st Part of the Project cost shall be paid against Installation, Testing & Commissioning after submission of the following documents:

- i. Copy of Original Commercial invoice raised at the time of supply in triplicate (1+2).
- ii. Duly filled **Annexure-12** should be submitted duly signed by the Consignee/JREDA officials.

- iii. certificate for minimum of seven days of satisfactory performance with photographs of each installed LED based SHMLS with GPS coordinates.
- iv. list of Geo-Tag co-ordinates of all installed sites.
- v. submission of the Insurance Documents and Warranty Certificates of the Components.
- vi. submission of RMS data of Solar Highmast Lightning system.

**6.3 For CMC: 20%** each year of 2nd Part of the Project Cost can be release against CMC Five year. 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**.
- iii. submission of Quarterly Device Connectivity & Data Availability reports.

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: 15**

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 15 days from the date of intimation.

C.

insurance must cover third party liabilities including casualties and other operational activity.

**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, 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 deduction of 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 the 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 SHMLs.
- 16.2.** The Supplier shall depute authorized Service Engineer within 7 days from the date of the intimation of fault, and establish a sufficient inventory of spares in the State in consultation with JREDA to provide satisfactory and uninterrupted services during the warranty 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 purchasers 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 theresponsibilities

to fulfill the 5 years CMC as per the provisions mentioned.

- (c) Contractor/vendor is involved in any action of moral turpitude. If the
- (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

### NIB No: 01/JREDA/SHMLS/24-25

#### 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, Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have a minimum Mono-crystalline Module efficiency > 19%, LiFePo<sub>4</sub> storage battery, RMS Based LED Luminary with Controls & BMS. Electricity generated by the PV Mono-crystalline 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 Mono-crystalline Module should be of capacity minimum 200 Wp . **Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have a minimum Mono-crystalline Module efficiency > 19%.** The battery bank should be of LiFePo<sub>4</sub> 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 Mono-crystalline Module is placed at the top of the pole so that it receives solar radiation throughout the day, without any shadow falling on it. 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.

Mono-crystalline Solar Module	Batteries Lithium Ferro Phosphate battery (LiFePo <sub>4</sub> battery) (120 AH )	Luminary (60 W)	MMS / Pole Structure ( 9 Mtr.)
<ul style="list-style-type: none"> <li>• IEC 61215/ BIS 14286</li> <li>• IEC 61730-1</li> <li>• IEC 61730-2</li> </ul>	<ul style="list-style-type: none"> <li>• IS 16046-Part 2</li> <li>• IS 16047 Part 3</li> </ul>	<ul style="list-style-type: none"> <li>• LM 80</li> <li>• LM 79-08</li> </ul>	<ul style="list-style-type: none"> <li>• IS 2062: E250</li> <li>• BS:5135</li> <li>• BSEN ISO 1461 /BSEN 10025</li> <li>• IS 5986</li> <li>• ENISO 1461:1999</li> <li>And</li> <li>• IS 111759-1985</li> </ul>

## SOLAR HIGH MAST LIGHTING SYSTEM

A stand-alone Solar PV White- LED High Mast Light consist of white LED luminary of maximum 4\*60Watt (LED + Driver) as per configuration along with Mono crystalline solar PV modules and battery of given capacity, necessary control electronics, inter connecting wires/cables, Mono-crystalline Module mounting structures etc. to operate the load for dusk to dawn. The broad performance specifications of White Light Emitting Diode (W-LED) light source-based solar Luminaires lighting system are given below:

### **BROAD PERFORMANCE PARAMETERS**

<b>PV Module</b>	<p><b>Only indigenous modules shall be used in the project.</b> SPV ALMM approved Mono-crystalline Module aggregate capacity of 200Wp (200Wp X 4 Nos.) at 16.4 Volt under STC. Mono-crystalline Module Voc at least minimum of 21V.</p> <p><b>Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have a minimum Mono-crystalline Module efficiency &gt; 19%</b></p>
<b>Battery</b>	<p>BIS Approved Lithium Ferro Phosphate (LiFePo4) batteries of capacity 12.8 Volt, 120 Ah X 4 nos.) with BMS.</p>
<b>Light Source-Luminaries</b>	<ul style="list-style-type: none"> <li>• White Light Emitting Diode (W-LED) 4*60 Watt (LED +Driver)</li> <li>• LEDs which emits ultraviolet light will not be permitted.</li> <li>• Only Nichia / Osram / Philips / Lumileds / CREE / Seoul / Everlite make LEDs shall be used for light.</li> <li>• White Light Emitting Diode 60W X 04 nos. Total system Wattage (Luminary Wattage) of each luminary should be maximum 60W DC operated confirming to IP66 or above.</li> <li>• The LED should be SMD LED Chip of Nichia/ CREE/ Osram/ Philips/ LG /Samsung /Refond/ Everlight Seoul/ Bridgelux or equivalent reputed manufacturer.</li> <li>• The LED efficacy should be minimum 140 lm/W (as per LM 80) CCT 5500 - 6500 K, CRI Minimum 70 &amp; LED wattage minimum 01 W.</li> <li>• The Luminous flux should be minimum 3700 lumens &amp; Luminary Must be LM-79 certified from MNRE/NABL/NISE Lab. The color 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 MNRE Lab/NABL Laboratory.</li> <li>• Luminary should consist the provision of a Remote Monitoring system including Controlling /Dusk to down parameter.</li> </ul>

<b>Light Out put</b>	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.
<b>Pole (≥80 Microns)</b>	<p>9 M Long Single /Double section Double Ring including Cross Brassing/Bed Type Mounting Support 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 &amp; battery on the top of the mast. There should be provision to install the type tested Winch inside the mast for raising &amp; lowering of complete solar lighting system.</p> <p>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 Highmast pole should have a proper Docking mechanism.</p>
<b>Stainless Steel WireRope</b>	Wire rope of Grade AISI 316 grade, 7/19 construction, with three ropes continues 8 mm diameter and braking load capacity minimum 2450 kg x 3. The breaking load test report obtained from govt. laboratory of the wire rope should justify the desired Breaking load capacity.
<b>Complete Raising Lowering mast</b>	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.
<b>Number of foundation bolts:</b> <b>PCD of foundation bolts (mm):</b> <b>Type:</b> <b>Diameter:</b> <b>Length of foundation bolts:</b>	6 nos. 500 mm TS 600 24 mm dia. Min. 750 mm long
<b>Decorative Pedestal</b>	<b>Minimum 1000 x 1000 x 1500 mm</b> or as per approved submitted drawing by Pole manufacturer.
<b>Electronics Efficiency</b>	Minimum 90%
<b>Autonomy</b>	3 days or Minimum 24 operating hours per permissible Discharge
<b>Average duty cycle</b>	Dusk to dawn
<b>Trailing Cable</b>	Interconnection cable Copper Conductor, 1 Core, 2.5 sq. mm/ 4 sq mm Insulation – ERP insulated PCP sheathed

<b>Size of opening and door at base (MM)</b>	Size of opening and door at base (MM)
<b>Lighting Protection</b>	G I Single Spike of length 1200 mm
<b>Warranty</b>	The complete solar mast lights, Battery & solar PV Mono-crystalline 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 Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and have a minimum **Mono-crystalline Module efficiency > 19%, shall be used in the Solar Photovoltaic module.**
- ii. Crystalline high power/efficiency cell shall be used in the Solar Photovoltaic module. The Solar Mono-crystalline Module efficiency should not be less than 19% as per MNRE Guidelines.
- iii. PV Mono-crystalline 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.
- iv. The terminal box on the Mono-crystalline 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, if required.
- v. The offered Mono-crystalline Module shall be in accordance with the requirements of MNRE.
- vi. Latest edition of IEC 61215 edition II / IS 14286 & BIS for Crystalline and shall be certified by MNRE authorized test center. The bidder shall submit appropriate certificates.
- vii. PV modules must quality to IEC 61730 Part 1- requirements for construction & Part 2 –requirements for testing, for safety qualification.
- viii. Protective devices against surges at the PV Mono-crystalline Module shall be provided. Low voltage drop bypass diodes shall be provided and if required, blocking diode(s) may also be provided.
- ix. Identification and traceability Each PV Mono-crystalline 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 Mono-crystalline Module qualification certificate.
  - i) Name of the test lab issuing IEC certificate.
  - j) Other relevant information on traceability of solar cells and Mono-crystalline Module as per ISO 9000 series.



k) The RFID should be inside the Mono-crystalline Module laminate.

### **3. BATTERY**

Battery shall be Lithium Ferro phosphate (LiFePo<sub>4</sub>) with maximum Depth of Discharge **90%**, the batteries should conform to the latest BIS /International standards. The battery shall be of LiFePo<sub>4</sub> storage batteries as per BIS 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, 120 Ah at C10 rate.
- ii. DOD shall be 90% i.e., at least 90% of the rated capacity of the battery should be between fully charged & 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.
- viii. For reducing the nos. of joint of terminal battery & Luminary cable should minimum 500 mm.**

### **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 a Flood light/Street Light fixture suitable for outdoor use and shall comply with IP65.
- iv. The LED housing should be made of pressure die cast aluminium having sufficient area for heat dissipation and high-quality poly carbonate Lenses fitted with pressurized die cast aluminium frame with SS screws.
- v. The temperature of heat sink should not increase more than 30 degree C 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.
- vi. 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.
- vii. The LED efficacy should be more than 140 lumen / watt.
- viii. All LED must incorporate fail short mechanism in all LEDs.
- ix. The LEDs used in the luminary should have life time more than 50,000 hrs.
- x. The lumen depreciation of LED shall not be more than 30% even after 50,000 burning hours.
- xi. Power consumption of each LED Luminary / Lighting unit shall not be more than 8 W (including LED Driver power loss).

- xii. Bidder should provide only LM-79 & 80 Certificate of Luminary .Luminary should be of IP 65 rating .Luminary has the provision of RMS facility .Successful Bidders provide the 5 Year Server Maintenance of the RMS system and Submit Valid User ID & Password in JREDA .
- xiii. **Luminary cables should be as per standard & for reducing the joint of terminal battery cable should minimum 500 mm.**
  - i. **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 %
  - ii. 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.
  - iii. Auto resettable reverse polarity protection shall be provided.
  - iv. 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.
  - v. The make, model number, country of origin and technical characteristics of white LEDs used in the lighting system must be furnished.
  - vi. 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 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. 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.
- iii. Full protection against open circuit, accidental short circuit and reverse polarity should be provided.
- iv. Charge controller shall have automatic dusk-dawn circuit based on SPV Mono-crystalline 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.
- v. The self-consumption of the charge controller shall not be more than 1mA mA at rated voltage and rated current.
- vi. Adequate protection shall also be incorporated under no-load conditions (i.e., when the system is ON & the load (LED Lamp is removed)
- vii. **The system should be provided with 3 LED indicators: a green light to indicate charging in progress and a red LED to indicate deep discharge condition of the battery and Blue LED to indicate the CGM Connectivity. The green LED should glow only when the battery is being charged.**
- viii. All capacitors shall be rated for max. temp of 105° C.
- ix. Resistances shall preferably be made of metal film of adequate rating.

- x. 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.
- xi. 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 Mono-crystalline Module aggregate capacity 800 Wp (200 Wp X 4 Nos.) at 16.4 +_ 0.2 Volt under STC. Mono-crystalline Module Voc at least minimum of 21V.
Idle Current (Self Consumption)	<15mA
Efficiency	>90%
Indications	The system should be provided with 3 LED indicators: a green light to indicate charging in progress and a red LED to indicate deep discharge condition of the battery and Blue LED to indicate the Connectivity of SHMLs. The green LED should glow only when the battery is being charged.
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
Protections	<ul style="list-style-type: none"> <li>• Transient / Surge</li> <li>• Over Charging / Deep Discharge</li> <li>• Overload - Auto shutdown and restart</li> <li>• Solar and Battery Reverse Protection</li> <li>• Reverse Current from Battery at Night</li> </ul>

**REMOTE MONITORING SYSTEMS:**

- \* **The load voltage and VOC conditions of the PV modules are not applicable for the system having MPPT based charge controller. Remote monitoring facility will be integrated with MPPT charge controller, and it would record system parameters at fixed time interval of 10 minutes for system health analysis. Recorded data should be download in PDF, XLS, JPEG, PNG and SVG Format. Recorded data should be available online for 90 days of limited time.**

## Requirements of RMS and integration with State Solar Energy Data Management Platform

1. State Nodal Agency/Implementing Agency will have a common State Level Solar Energy Data Management platform (**SEDM**) to ensure third party performance monitoring as per Communication Architecture Guidelines.
2. EDM should have following minimum features or modules:
  - a. Solar High-mast System Performance: Energy Generation
  - b. Streetlight Performance: Running Hours, Full Brightness Hours, Half Brightness Hours
  - c. Remote Monitoring System Performance: %Device Connectivity, %Data Availability etc.
  - d. Alerts and Notifications: Faults related to Solar generation, Battery, Luminary
  - e. Asset Management: Ratings, Serial Number, Make, Model Number of Luminary, Panel and Controller etc.
  - f. Complaint and Ticket Management
  - g. Field Mobile Application: Generation, Running Hours, Complaint loggingRMS Monitoring should be Considered below parameter.
  - i. Status of Luminaries.
  - ii. Solar Mono-crystalline Module Voltage, Current & Power
  - iii. Battery Charging Current & Discharging Current, SOC, DOD
  - iv. Luminary Load Current
  - v. Quarterly/Yearly Device Connectivity & Data Availability in Percentage.
3. Remote Monitoring System (RMS) provided by all bidder's should connect to State Level Solar Energy Data Management platform
  - a. **Communication Connectivity:**
    - i. **Solar SHMLs Controller Connectivity:** Communication between Remote monitoring System and Controller should be on RS485 MODBUS RTU protocol / UART to ensure interoperability irrespective of make and manufacturer
    - ii. **Remote Connectivity:** Communication between Remote monitoring system and SEDM should be using GSM/GPRS/2G/3G/4G cellular connectivity
    - iii. **Local Connectivity:** Ethernet/Bluetooth/Wi-Fi connectivity to configure parameters, notifications, communication interval, set points etc. or to retrieve locally stored data.

**Note :** In case of any fault occurred in the system, RMS Alert message should be immediately forwarded to the installed Agency and JREDA officials (via Email/SMS) and status of SHMLs need to provide via E-mail on monthly basis up to 5 years of SHMLs work period.

**b.**

**ommunication Modes:**

- i. Push Data on Event/Notification
  - 1. Luminary Status Change: On/Off
  - 2. Fault: Solar Module, Battery, Luminary and Luminary
  - 3. Vendor's RMS should send exception messages to central software (SEDM) on events.
- ii. Push Data Periodically: important parameters (as mentioned in tender) should be pushed to state server on configurable interval
  - 1. Instantaneous Parameters: Voltage, Current, Power, Brightness Level, Battery Charge Level
  - 2. Push Data Periodically: important parameters should be pushed to central server on configurable interval in multiples of 1 minute or more or as desired by JREDA.
- iii. Pull On demand: If required, central server can fetch data from device on user demand or request
  - 1. Update Status of latest values and parameters at control room on request instead of waiting for 2 Hours.
  - 2. If required, central server can fetch data from device on user demand or request.
- iv. Command On Demand:
  - 1. Activate or deactivate Astronomical Mode
  - 2. Send Command to switch on or off Streetlight in case of environmental issues or patrolling or testing
- v. Configuration Update:
  - 1. Update schedule for brightness level operation hours
  - 2. Command on Demand: It should be possible to send commands to Real-time monitoring system to update configuration or control operations, if required.

**Communication Protocol:**

- vi. MS should provide data on scalable IoT communication protocols as required by respective SNA to establish communication with thousands of systems.
- vii. MS and SEDM Software will communicate using Internet of Things – Secure TCP socket Protocol • RMS will send data in open formats like JSON message format.
- viii. Communication between RMS and Server would be secured and encrypted using TLS/SSL/X.509 certificate. • Communication between Server and end user would be secured

- ix. and encrypted using TLS/SSL/X.509 certificate.  
s a part of IoT protocol, authentication and authorization would be implemented using token/password mechanism between monitoring system at well sites and server

c.

**Security:**

- i. Communication between RMS and Server should be **secured and encrypted** using TLS/SSL/X.509 certificate etc.
- ii. s a part of IoT protocol, **Authentication and Authorization** should be implemented using token/password mechanism

d.

**Message Format:**

- i. MS should provide data in a JSON message format as required by respective SNA

e.

**Data Storage:**

- i. In case of unavailability of cellular network, RMS should store data locally and on availability of network it should push data to central Server.

**5. Central Gateway Module:**

f.

olar Smart Mast System, a cutting-edge technology that revolutionizes Solar high mast lighting. This control unit communicates with a remote server through a cellular network, allowing to access information about the lights using a simple interface. The control unit is also equipped with GPS, so it knows where each light is located.

g.

Each Solar High Mast will be equipped with a central Gateway Mono-crystalline Module (CGM) that will establish a connection with a remote cloud server.

h.

he CGM will communicate with the cloud server using GSM/GPRS technology, allowing users to access data through a user interface.

i.

uccessful bidder should provide the Sim card for communication purpose accordingly the network access of the installed area/Location.

j.

Installation of the CGM will be carried out on every high mast pole, and it will be responsible for connecting 4 Solar Flood Lights to the system.

k.

he CGM will be equipped with an integrated GPS Mono-crystalline Module to provide geolocation information for both the pole and the connected Solar LED Lights.

l.

he CGM will support the use of 3G/4G SIM Cards from any reputable service provider to ensure

- reliable connectivity.
- m. Each individual LED Light will be controllable through a dashboard interface. Users will have the ability to switch the lights on/off or select from three different modes to adjust the light dimming profile.

**4. QTT Topic Structure**

<b>Application Node / Version</b>	<b>Solution Type</b>	<b>Device ID</b>	<b>Message Type</b>	<b>Access Level</b>
IIoT-1	High mast Light System	IMEI Number	Info	Subscribe
			OTP	Subscribe
			Data	Publish
			On Demand	Subscribe
			Config	Subscribe

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. Mono-crystalline Module Testing	IEC 61701: 2011	Salt mist corrosion testing of photovoltaic (PV) modules, wherever applicable
3. PV Mono-crystalline Module Safety	IEC 61730-1:2016	Photovoltaic (PV) Mono-crystalline Module safety qualification- Part 1: Requirements for construction
	IEC 61730-2:2016	Photovoltaic (PV) Mono-crystalline Module safety qualification- Part 1: Requirements for testing
	UL 1703/ UL 61730	PV Mono-crystalline 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 and Cords	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	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:**

Agency must submit the following documents:-

1. TR (Factory Internal Test Reports)
2. AP (Quality Assurance Plan)
3. alibration Certificate of all testing equipment's.
4. ttachment of Certified BOM (Bill of Materials)
5. IS Certificate (Mandatory for Battery & PV Modules)
6. SO Certificate

### **Battery:**

- i. attery performance test as per IEC 62620:2014.
- ii. isual/Dimension/Weight Check
- iii. olarity test
- iv. nternal resistance test
- v. MS (Battery Management System) test.

### **Solar PV Module:**

- i. isible check
- ii. lash Test (IV Curv)
- iii. lectro-luminescence Test
- iv. nsulation Resistance Test
- v. i-Pot Test
- vi. CW Test

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vii. Wet Leakage Test

viii. B pull Out Test

**Luminary:**

i. Visual and Dimension Check

ii. Over voltage protection: As per IS standard

iii. Insulation Resistance and Electric Strength

iv. Measurement of Leakage Current

v. Creepage Distances and Clearances

vi. ES-LM-80 Report for LED Chip

vii. Report of 60 W Luminary LM-79 Certificate approved by NABL/NISE/MNRE accredited Laboratory.

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### **Control Driver Testing:**

- i. Visual Check
- ii. Efficiency Test
- iii. R test
- iv. MS Monitoring Data Validation and Data Verification for the selected sample

### **Pole:**

- i. Visual, Dimension & Safety
- ii. Raw Material Visual Specification
- iii. Thickness check
- iv. GI Coating Check >80 microns
- v. Wind Tolerance test (minimum 180km/hr)
- vi. Wire rope of Grade AISI 316 grade certificates.
- vii. Structural Drawing signed by structural Engineer.

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

**Note: - 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 galvanized metallic frame structure should 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.

The pole should be a hot-deep Galvanized Iron 20-sided polygonal pole in single length for 9.0 mtr. Height as per specification as under:

- The 20-sided polygonal poles shall be Hot-deep galvanized to a minimum of 80 microns. The material of the pole shall be as per the specification of BS EN 100025, ISO 1461.
- The size of the pole shall be min 150 mm (A/F) at the Top side, and 410 mm (A/F) at the bottom side with a thickness of 3 mm minimum.
- Diameter of base plate (mm)= 580mm; Thickness of base plate (mm)=20mm.

- The pole should have the arrangement at the top for mounting of the Solar panel of design capacity with mounting structure at an angle of latitude  $\pm 2$  degree.
- The battery either two or four shall also be mounted on this pole at a suitable height hence provision should be made accordingly.
- The pole shall be mounted on a suitable RCC foundation at least 1.5 meters deep and 500 mm above ground with 6 bolts of min 24 mm size
- The Nut -Bolts in battery box and panel structures should be proper riveted to ensure the theft.
- The design and foundation details of the pole shall be got approved from JREDA before execution of work.
- Test certificate, Galvanized Certificate etc. of the mounting hardware /Pole should be submitted from approve NABL Lab.
- The pole manufacturer has to provide the proper Installation Manual for the proper installation of the High mast poles.
- **Bidder must provide a General Arrangement (GA) drawing of the structure along with all the components of High Mast light including the civil foundation drawing as per the Jharkhand climate duly approved by the structural/chartered engineer.**
- **Bidder must provide STAAD Pro. Report including foundation work approved by chartered engineer along with registration no.**

## Mandatory Feature of SHMLs.

1. The following proposal outlines the design specifications for a supporting mounting frame for solar modules, battery & Luminary focusing on structural integrity, solar energy utilization, and component arrangements.
2. Supporting Panel Mounting Frame:
  - The frame must support the full frame of the solar module to ensure stability and longevity.
3. Module Supporting Angle:
  - The supporting angle should be inclined to optimize sun energy utilization.
4. Structural Support:
  - The frame should provide proper structural support for holding SHML solar modules securely.
5. Docking Provision:
  - Provision for docking, with a recommended length of 100mm, to lock the head of the pole for lantern carriage arrangement.
6. Battery Arrangement:
  - **Hanging type battery arrangements are not acceptable.** The battery box size (**L X W X H**) should exceed 50mm, and the battery box should rest within a 30x3mm cage with appropriate mounting provisions.
7. Luminary Installation:

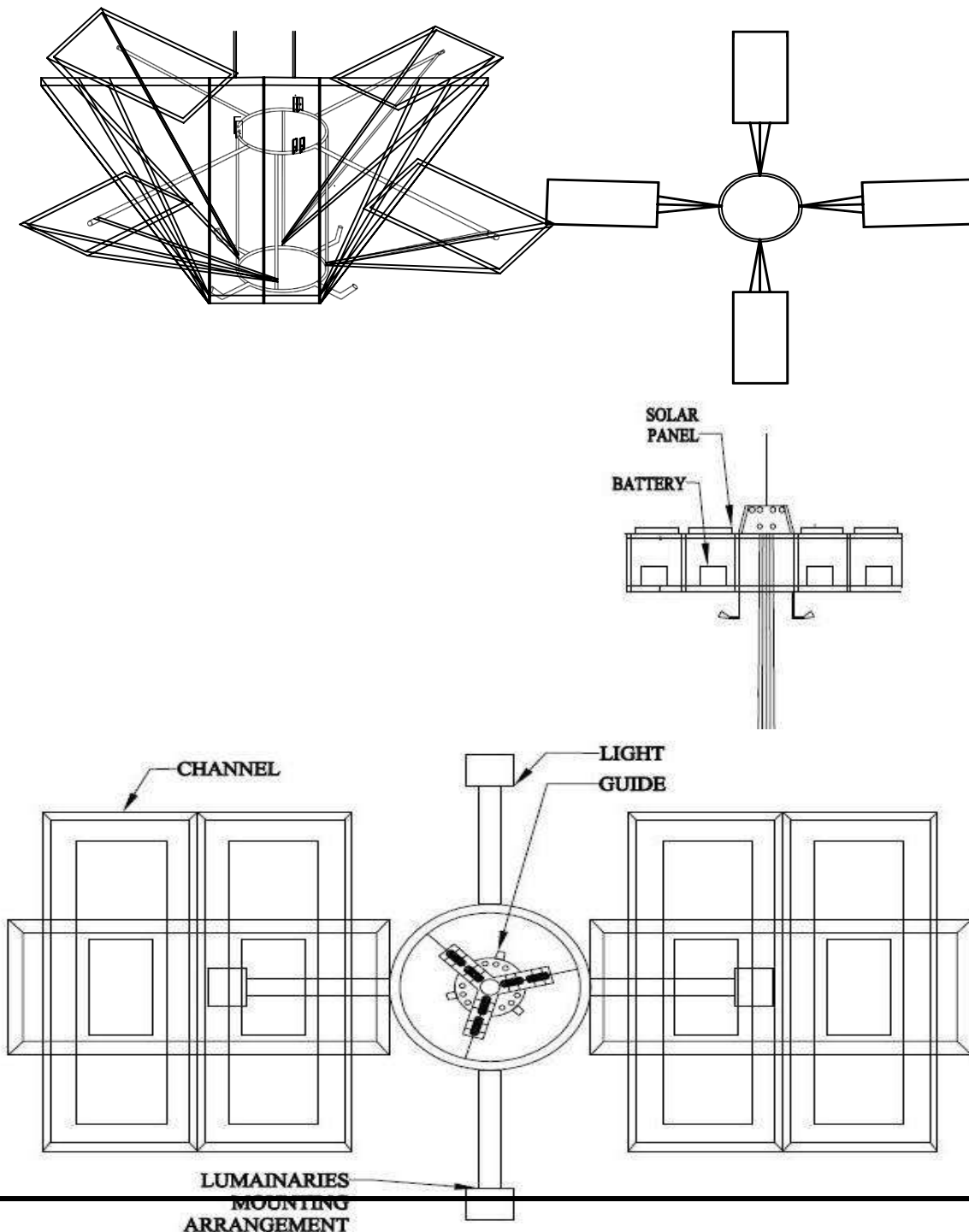
- Provision for installing both street light and flood type luminaries.

8. Street Luminary Angle:

- The street type luminary should be installed at a proper angle of 30 degrees for optimal illumination.

9. Arm Carriage:

- Double arm carriage ring including three cross bracing and structural support for the module structure frame.



**Note: Above given drawing is only for your reference.**

**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. 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 a 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.

\*\* Battery Mounting should be proper. For Holding the Battery box proper Cage using GI plate should be Available.

**A. 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.

**B. Earthing Arrangement**

- i.** preferably Marconite earthing shall be provided for Solar Mast System.
- ii.** For safety purposes, 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.

**C. Lightning Arrestor**

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

- i.** EC 62561–1– Lightning Protection System Component (LPSC) – Part 1 – Requirement for connection components.
- ii.** EC 62561– 2– Lightning Protection System Component (LPSC) – Part 2 – Requirement for

conductors and earth electrodes.

iii.

EC 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 warranty 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 Mono-crystalline 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 1000 mm x 1000 mm x 1500 mm deep and 300 mm above the ground level. must have 6 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.

Cable Dressing should be proper laying in Flexible **Conduit pipe (UPVC)** with proper cable Tie.

**Note: Name Plate of aluminum/UPVC sheet should be provided at every pole having following details:**

- **EDA Logo & Contact Details** **JR**
- **taller Name & permanent contact number** **Ins**
- **ial Number of Poles.** **Ser**
- **ailed Site Location as per Dispatch Instruction.** **Det**

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

W

T



## **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.

**Annexure-1**

**Format for Covering Letter**

**NIB No: 01/JREDA/SHMLS/24-25**

(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 - 834002.

Sub: Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive  
Maintenance Contract (CMC) of LED based solar High Mast Lighting systems (SHMLS)  
including Remote Monitoring System ( RMS ) 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 conditions of the above  
NIB No.....

We have submitted the requisite amount of EMD (Refundable/adjustable) & Tender  
Fee(Non-Refundable) through Online Via SBI Payment Gateway of Jharkhand Tenders  
. Validation of EMD valid for twelve months.

The tender is uploaded on [www.jharkhandtenders.gov.in](http://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.***

## Annexure-1a

### Undertaking by MSMEs of Jharkhand for availing preferential treatment NIB No: 01/JREDA/SHMLS/24-25

(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, Gol 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-2

### Check List for Technical bid NIB No:01/JREDA/SHMLS/24-25

Sr. No.	Particulars	Uploaded Yes / No	Page No.
1.	Scan Copy of Challan / Receipt of Tender Fee and EMD submission through Online Via SBI Payment gateway of Jharkhand Tender.		
2.	Firm's registration certificate company /Pvt. Ltd. / Proprietorship firm/Partnership/corporation/ LLP		
3.	Registration certificate of MSMEs of Jharkhand (Certificate issued by GM DIC Industry Dept. for system/components manufacturing)		
4.	To indicate the functionality of the firm, attach the Audited Account of last three years ending 31.03.2024 of the firm duly certified by Statuary Auditor with ITR.		
5.	ITR for the assessment year AY 2021-22, 2022-23 & 2023-24.		
6.	Financial Statements (i.e., Balance sheet & Statement of Profit or Loss) for the last 3 financial years FY 2020-21, 2021-22 & 2022-23 as certified by Chartered Accountant		
7.	Annual Turnover (FY-2020-21 ,2021-2022 & 2022-23) as certified by Chartered Accountant		
8.	Net Worth certificate (FY-2020-21 ,2021-2022 & 2022-23) as certified by Chartered Accountant		
9.	GST certificate.		
10.	PAN Card.		
11.	List of current litigant cases in which the bidder is involved (in format given in ITB).		
12.	An affidavit for non-engagement of related persons.		
13.	Authorized address & contact numbers of the bidder as per instruction in the Notice Inviting Bid duly digitally signed.		
14.	Bid Capacity Declaration.		
15.	Covering Letter as per Annexure-1.		
16.	Covering Letter as per Annexure-1a		
17.	Checklist for Technical Bid as Per Annexure-2.		
18.	Information about the Bidder as per Annexure-3.		
19.	Declaration by Bidder as per Annexure-4.		
20.	Covering Letter as per Annexure-5		
21.	Annexure 6 – Format for Net worth Certificate		
22.	Annexure 7 – Format for Power of Attorney		
23.	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 and Corresponding Performance certificate /completion certificate.		
24.	Technical Details/ Price Bid as per Annexure-9.		
25.	Contact Person for the NIB. Annexure-10		
26.	Covering letter as per Annexure 11		
27.	Covering letter as per Annexure 12		

28.	Covering letter as per Annexure 13		
29.	Covering letter as per Annexure 14		
30.	Warranty Card as per Annexure-15		
31.	JREDA Contractor Registration Certificate.		
32.	Attachment of Solar PV Mono-crystalline Module Manufacturers will be enlisted under ALMM, which comply with the BIS Standards and are having the following minimum 19 % Mono-crystalline Module efficiency:		
33.	Attachments of Lithium Ferro Phosphate Battery (120 AH,12.8 VV) which comply with the BIS Standards to be used in Solar High Mast Lighting System.		
34.	<b>Attachments of Luminary Test Certificate LM-79 &amp; LM -80 Certificate approved by NABL/NISE/MNRE approved test labs.</b>		

*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

NIB No: 01/JREDA/SHMLS/24-25

#### Information About the Bidding Firm

(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 (Mandatory)	
17.	Scan Copy of Challan / Receipt of Tender Fee and EMD submission through Online Via SBI Payment gateway of Jharkhand Tender.	
18.	Place where Materials will be Manufactured	
19.	Place where Materials will be Available for Inspection	
20.	<b>Other details and remarks, if any</b>	

Yours faithfully,

(Signature of Authorized Signatory)

Name:

Designation:

Company

seal:

## Annexure-4

### Declaration by the Bidder NIB No:01/JREDA/SHMLS/24-25

(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: 01/JREDA/SHMLS/24-25**

[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 -834002

Sub: Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLS) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand

Dear Sir,

We certify that the Bidding Company had an average Annual Turnover of Rs. -----  
based on audited annual accounts of the last three years ending 31.03.2023.

Sl.No.	Financial Year	Turn over (in Rupees)
1.	2020-21	
2.	2021-22	
3.	2022-23	
	<b>Average Annual Turnover</b>	

UID No. ....

Authorized Signatory  
(Power of Attorney holder)

Statutory Auditor  
(Stamp & Signature)



**Annexure-6**

**Format For Financial Requirement - Net Worth Certificate**

**NIB No: 01/JREDA/SHMLS/24-25**

[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 - 834002

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 2023 is Rs \_\_\_\_\_. The details are appended below.

<b>Particulars</b>	<b>Amount (In Rs.)</b>
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 31 <sup>st</sup> March 2023	

**UID No.:** .....

Authorized Signatory  
(Power of Attorney holder)

Statutory Auditor  
(Stamp & Signature)

**Annexure -7**

**Format of Power of Attorney for Signing Bid  
NIB:01 /JREDA/SHMLS/24-25**

**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 SS 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: 01/JREDA/SHMLS/24-25**, 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 years

NIB No: 01/JREDA/SHMLS/24-24

Only Submit the Details of Orders Received & Executed by the Bidder for Design, Supply, Installation, Testing & Commissioning LED Solar High Mast Lighting Systems/Solar Street Light including 5 years Comprehensive Maintenance Contract (CMC) to SNA/ Govt.OrganiZation during Last Seven Years.

SL. No.	Name of Agency/ Organization	Details of Work Order / Purchase Order	Technical Specification	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.

S

## Annexure-9

### Price Bid

(To be Online submitted in.pdf file with price bid)

NIB No:01 /JREDA/SHMLS/24-25

**Sub: Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System (RMS) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand**

S. No.	Description	Max. Quantity	Quoted Quantity (Excluding GST)	Unit Rate in Figures (Excluding GST in Rs.)	Total Amount in Text
1	2	3	4	5	7
1	Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLs) including Remote Monitoring System ( RMS ) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.	80			

- 1 **Incise price Bid is submitted with the technical part; the bidder will be disqualified by JREDA.**
- 2 It is mandatory for all bidders to submit their Price-Bid only through online (e-tendering).
- 3 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.
- 4 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)

**Annexure-10**

**Contact Person for the NIB  
NIB No: 01/JREDA/SHMLS/24-25**

[On the letterhead of Bidding Company]

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

(Signature of Authorized Signatory)

Name:

Designation: Company Seal:

**Annexure-11**

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

**NIB No: 01JREDA/SHMLS/24-25**

[On the letterhead of Bidding Company]

M/s ..... has successfully dispatched material of ..... Nos. of LED-based Solar High Mast Lighting Systems on ..... and during physical verification and checking of parts of SHMLS found in good condition.

Name of District:

Name of Block:

Name of Location:

**Solar High Mast Lighting Systems:**

Sl. No.	Equipment's	Make	Wattage	Qty.	Serial Number of equipment
1	Solar PV Modules				
2	Battery				
3	LED Luminaries				
4	High Mast Pole				
5	Other Material				

**Note: Geo-Tag Photograph must be enclosed**

**Signature of Supplier along with Seal**

Date.....

## Annexure-12

### Certificate of Installation of RMS Based LED Based Solar High Mast Lighting Systems Compliance by the Supplier

NIB No: 01/JREDA/SHMLS/24-25

[On the letterhead of Bidding Company]

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

Details of the installed site is given below.

Sr. No.	Name of District:	Name of Block	Name of Location	Latitude	Longitude	Attachment of Geo-tag Photographs
1.						
2.						
3.						
4.						

<b>Serial Number of equipment</b>					
Sr. No.	Name of Location	Solar PV Modules200 Wp	Battery 12.8 V ,120 AH	RMS-based LED Luminaries (60 W)	High Mast Pole 9 Mtr.
1.					
2.					
3.					

**Note: Geo-Tag Photograph must be enclosed**

**Signature of Supplier along with seals**

**Annexure-13**

**Format for Quarterly O&M and CMC Report**

**NIB No: 01/JREDA/SHMLS/24-25**

[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-834002.

Dear Sir,

**Sub: Design, Supply, Installation, Testing & Commissioning including 5 years Comprehensive Maintenance Contract (CMC) of LED based solar High Mast Lightning systems (SHMLS) including Remote Monitoring System ( RMS ) with Lithium Ferro Phosphate Battery on Turnkey basis across the state of Jharkhand.**

Date of Installation. ....  
Name of District.....  
Name of Block.....  
Name of Location .....  
JREDA Work Orde No.....  
Name of Technicians: .....

Sr. No.	System Details	Date of Site Visit/CMC	Fault observation	Fault repaired	Status of the system
1	Mono-crystalline Module No.				
2	Battery No.				
3	Charge Controller No.				
4	Luminaries				
5	RMS System status				

**Data Availability & Connectivity Status:**

**Note: Geo-tag photograph & Quarterly RMS data must be enclosed.**

Period of CMC.....

(Signature of Consignee)  
Name: Designation:  
Signature of Agency with Seal



## Annexure-14

### Warrantee Card

**NIB No: 01/JREDA/SHMLS/24-25**

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 Luminary	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Guarantee Valid Up To	
7.	Details of High Mast Pole	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Guarantee Valid Up To	
8.	Designation & Address of the Person to be Contacted for Claiming Warrantee Obligations	

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

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

**Filling Instructions:**

1. The RMS 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-15

### Undertaking NIB No:01 /JREDA/SHMLS/24-25

(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 -833672			
2.	Name of the Manufacturer with Address	M/s			
3.	Name of the Installer with Address	M/s			
4.	Warrantee Duration of Product (Years )	As per NIB			
5.	Details of the product and Quantity and Model No. offer for Inspection and Supply	<b>Product Name</b>	<b>Capacity</b>	<b>Quantity</b>	<b>Sr. Nos.</b>

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/equipment's as defined in **NIB-01/JREDA/SHMLS/24-25 and Work Order no: - \_\_\_\_\_ Date: \_\_\_\_\_**.

In case of any deviation in the technical specifications of the items/equipment's as defined in **NIB-01/JREDA/SHMLS/24-25 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.

**\*\* For Mono Crystalline Mono-crystalline Module Warrantee should be minimum 25 Years.**

**\*\* For Solar Highmast Pole Warrantee should be minimum 25 Years.**

**\*\* For Luminary Warrantee Certificate should be minimum 5 Years.**

**\*\* For Lithium Phosphate Battery Warrantee Certificate should be minimum 5 Years.**

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