



GOVERNMENT OF JHARKHAND

ENERGY DEPARTMENT

JHARKHAND RENEWABLE ENERGY DEVELOPMENT AGENCY (JREDA)

[State Nodal Agency for Renewable Energy Development]

REQUEST FOR PROPOSAL (RFP)

Notice Inviting Bid (NIB) for

Request for Proposal (RFP) for Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

Tender Reference No.: 18/JREDA/GCRT/IT/26-27

Document Version: 1.2

Issuing Authority:

The Director,

Jharkhand Renewable Energy Development Agency (JREDA),
3rd Floor, S.L.D.C. Building, Kusai Colony, Doranda, Ranchi - 834002 (Jharkhand).

Phone: 0651-2491161 | Fax: 0651-2491165

E-mail: info@jreda.com | Website: www.jreda.com

Bidding to be conducted through the e-Procurement Portal:

<https://jharkhandtenders.gov.in>

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Govt. of Jharkhand

Energy Department

Jharkhand Renewable Energy Development Agency (JREDA)

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

Ph.: 0651-2491161, Fax: 0651-2491165,

E-mail: info@jreda.com; Website: www.jreda.com

e-Procurement Notice

Tender Reference No.: 18/JREDA/GCRT/IT/26-27

Dated: 02.09.2026

1	Name of the work	Request for Proposal (RFP) for Selection of Agency for Design, Development, Implementation, Hosting and Operationalisation of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring and Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand.
2	Period of contract	03 (Three) Years
3	Time of completion	06 (Six) Months
4	Date of publication of NIT on website: http://jharkhandtenders.gov.in	03.09.2026 (Thursday)
5	Date & time of Pre-bid meeting	11.09.2026 (Friday) at 1.00 P.M.
6	Last date & time for receipt of online bids	28.09.2026 (Monday) upto 05:00 PM
7	Submission of original copies of Bid fee & EMD through Online via SBI Payment Gateway of Jharkhand Tenders	28.09.2026 (Monday) upto 05:00 PM
8	Technical Bid Opening Date	30.09.2026 (Wednesday) at 3.00 P.M.
9	Name & address of office inviting tender	Director, Jharkhand Renewable Energy Development Agency (JREDA) 3 rd Floor, SLDC Building, Kusai, Doranda, Ranchi- 834002 (Jharkhand)
10	Contact no. of procurement officer	9570086777
11	Helpline no. of e-procurement	0651-3502645

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

Sd/-
Director
JREDA, Ranchi

PREAMBLE

Jharkhand Renewable Energy Development Agency (JREDA), the State Nodal Agency for renewable energy development in the State of Jharkhand functioning under the administrative control of the Energy Department, Government of Jharkhand, has been entrusted with the responsibility of planning, promoting, implementing and monitoring renewable energy programmes across the State.

With financial assistance from the Government of Jharkhand, JREDA proposes to engage a competent, experienced and financially sound Agency for the design, development, installation, commissioning, implementation, integration and hosting of an IoT-enabled Vendor Empanelment, Asset and Inventory Management System and an IT-based Performance Monitoring and Evaluation Framework, together with Three (03) Years of Comprehensive Annual Maintenance Contract (AMC), for solar power projects implemented across the State of Jharkhand.

Current State of Solar Installations in Jharkhand

- More than 3300 (Three Thousands Three Hundred) Grid-Connected Rooftop (GCRT) Solar Power Plants of varying capacities have been installed and commissioned across all 24 (twenty-four) districts of the State.
- Solar Photovoltaic (PV) Power Plants of varying capacities have been installed and commissioned on Government Buildings on a turnkey basis, with Three (05) Years of Comprehensive Maintenance Contract (CMC) including Remote Monitoring System (RMS) coverage.
- At present, no centralised software platform or unified mechanism exists for the integrated monitoring, evaluation and management of these solar power plants.
- Rural electrification through solar mini-grid and micro-grid systems of varying capacities, along with other solar installations including solar pumps, street lights and high-mast lights, has been implemented by JREDA across rural Jharkhand.
- The Government of Jharkhand has further sanctioned a scheme of approximately 7 (seven) MW for installation of GCRT Solar Power Plants on various Government buildings.

Rationale and Purpose of this Notice Inviting Bid

The principal objective of this Notice Inviting Bid (NIB) is the Design, Development, Implementation and Hosting of a centralised, IoT-integrated digital platform for the comprehensive monitoring, evaluation and asset management of solar power projects across the State of Jharkhand, together with Three (03) Years of Comprehensive Annual Maintenance Contract. The platform shall integrate seamlessly with the existing Remote Monitoring System (RMS) and shall provide a unified, real-time, data-driven view of solar generation and asset performance across the State.

The proposed framework shall ensure an effective, accurate and cost-efficient mechanism for the collection, transmission and storage of solar generation data and associated performance parameters in a centralised database, followed by analysis and presentation of actionable insights in prescribed formats. The IT solution shall enable continuous remote monitoring, net-metering integration, maintenance tracking and asset management — leading to measurable improvement in productivity and profitability of installed plants — and shall support analytics on historical data to identify performance bottlenecks at the plant and device levels.

Best practices for Operation and Maintenance (O&M) of solar power plants, codified through newly developed model Standard Operating Procedures (SOPs), shall be adopted to ensure that all O&M activities are executed efficiently, consistently and in a measurable manner.

SECTION-1: LIST OF IMPORTANT DATES AND DETAILS OF BIDS**NIB No.: 18/JREDA/GCRT/IT/26-27**

Sl. No.	Particulars	Details
1	Name of Work	Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand
2	Tender Reference No.	18/JREDA/GCRT/IT/26-27
3	Estimated project cost	Rs. 4.20 Crores.
4	Mode of Submission of Tender	Online only, through the Government of Jharkhand e-Procurement Portal: https://jharkhandtenders.gov.in
5	Tender Fee (Non-refundable)	For General Bidder Rs. 10,000.00 (Rupees Ten Thousand only) — Online Mode through Portal. For Jharkhand MSEs: Nil
6	Earnest Money Deposit (EMD) / Bid Security	For General Bidder Rs. 8,40,000.00 (Rupees Eight Lakhs Forty Thousands only) — Online Mode through Portal. For Jharkhand MSEs: Nil
7	Date of Publication of Bid on Portal	03.09.2026 (Thursday)
8	Period of Downloading of Bid Documents	04.09.2026 (Friday) from 10.00 AM.
9	Last date & time for receipt of online bids	28.09.2026 (Monday) upto 05:00 PM
8	Technical Bid Opening Date	30.09.2026 (Wednesday) at 3.00 P.M.
9	Authority Inviting Bids	The Director, Jharkhand Renewable Energy Development Agency (JREDA)
10	Address	Jharkhand Renewable Energy Development Agency (JREDA), 3rd Floor, S.L.D.C. Building, Kusai Colony, Doranda, Ranchi - 834002. Phone: 0651-2491161 Fax: 0651-2491165 E-mail: info@jreda.com Website: www.jreda.com

SECTION-2: GENERAL INSTRUCTIONS FOR BID SUBMISSION

NIB No.: 18/JREDA/GCRT/IT/26-27

2.1 Detailed Instructions and Documents to be Furnished for Online Bidding

2.1.1 The detailed guidelines for online submission of bids may be downloaded from the Government of Jharkhand e-Procurement Portal: <https://jharkhandtenders.gov.in>.

2.1.2 Interested Agency may download the bid documents from the said portal.

2.1.3 To participate in the bidding process, the Agency shall obtain a valid Digital Signature Certificate (DSC) issued in compliance with the Information Technology Act, 2000, from any Certifying Authority licensed by the Controller of Certifying Authorities (CCA), Government of India. The DSC shall be used for digitally signing the bid. Agency already in possession of a valid DSC need not procure a fresh certificate.

2.1.4 Bids shall be submitted only in electronic form, duly digitally signed. Bids without a valid digital signature shall not be entertained. No bid shall be accepted in physical form.

2.1.5 Bids shall be opened online in accordance with the schedule notified in Section-1.

2.1.6 Agency shall keep ready scanned copies of the Demand Drafts towards Tender Fee and EMD as specified in this Bid Document. Prior to online submission, Agency shall ensure that scanned copies of all required documents have been uploaded with the bid.

2.1.7 The Agency shall produce the original Demand Draft towards Tender Fee and the Demand Draft / Bank Guarantee towards EMD, in approved form, in favour of the Director, Jharkhand Renewable Energy Development Agency, Ranchi, on or before the date and time stipulated in this NIB; failing which the Agency shall be disqualified. The particulars of Tender Fee and EMD specified in the bid document and submitted online (scanned copies) shall be identical to the originals; any discrepancy shall result in summary rejection of the bid.

2.1.8 Documents uploaded by valid successful Agency shall be verified against the originals before signing of the agreement. The successful Agency shall produce the originals before the concerned authority on demand. JREDA shall not be responsible for any delay in online submission attributable to causes beyond its control.

2.1.9 All required information for the bid shall be filled and submitted online; further details are available in the bid documents.

2.2 Documents to be Furnished for Online Bidding

Scanned copies (in PDF format, duly digitally signed) of the following documents shall be uploaded by the Agency on the e-Procurement Portal:

- Demand Draft towards Tender Fee.
- Demand Draft / Bank Guarantee towards Earnest Money Deposit (EMD), in the prescribed format (Annexure-9).
- Valid Goods and Services Tax (GST) Registration Certificate.
- Permanent Account Number (PAN) of the Agency.
- Certificate of Incorporation / Firm's Registration Certificate.
- Audited Balance Sheets for the last three (03) financial years, namely FY 2022-23, FY 2023-24 and FY 2024-25.

2.2.1 Annexures to be Submitted in Prescribed Formats

The following Annexures, in the formats prescribed in this RFP, shall be submitted in PDF format duly digitally signed:

- Annexure-1: Covering Letter.
- Annexure-2: Information about the Bidding Firm.
- Annexure-3: Declaration by the Agency.

- Annexure-4: Annual Turnover Certificate.
- Annexure-5: Net Worth Certificate.
- Annexure-6: Power of Attorney for Signing of Bid.
- Annexure-7: Proof of execution of similar nature of work in any Government / Semi-Government / State Government / Central Government / Public Sector Undertaking (PSU) during the last three (03) years, supported by copies of work orders and corresponding satisfactory completion certificates.
- Annexure-8: Format for Price Bid (duly filled and digitally signed).
- Annexure-9: Bank Guarantee Format for Earnest Money Deposit.
- Annexure-10: Contact Person for the NIB.

2.2.2 Verification of Originals

Documents uploaded by valid successful Agency shall be verified against the originals before signing of the agreement. The successful Agency shall produce the originals before the concerned authority upon receipt of intimation, which shall be sent through registered post.

2.2.3 Standard Bidding Document

The Standard Bidding Document (SBD) / Tender Document need not be uploaded by the Agency . The Agency shall, however, submit an affidavit confirming acceptance of the conditions set forth in the SBD. Agency disagreeing with the conditions of the SBD shall not be eligible to participate in the tender.

SECTION-3: NOTICE INVITING BID

NIB No.: 18/JREDA/GCRT/IT/26-27

3.1 Subject

Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

3.2 Project Description — IoT-Enabled Vendor Empanelment, Asset and Inventory Management System

Jharkhand Renewable Energy Development Agency (JREDA), with financial assistance from the Government of Jharkhand, invites bids from competent, experienced and financially sound Agency for the design, development, installation, commissioning, implementation, integration and hosting of an IoT-enabled Vendor empanelment, Asset and Inventory Management System and an IT-based Performance Monitoring and Evaluation Framework for solar power projects across the State of Jharkhand, along with Three (03) Years of Comprehensive Annual Maintenance Contract (AMC).

The scope of work includes the establishment of an integrated platform encompassing an IoT-enabled Vendor Empanelment, Asset and Inventory Management System and an IT-based Performance Monitoring and Evaluation Framework. The selected agency shall be responsible for the entire lifecycle of the project, including system design, development, deployment, installation and commissioning of IoT-enabled devices, and seamless integration with the existing Remote Monitoring System (RMS).

The principal objective of this engagement is to design, develop and operationalize a centralized monitoring and management framework that facilitates real-time data acquisition, processing and analysis for solar power projects across the State. The proposed system shall enable continuous remote monitoring of solar generation and system performance through IoT-enabled devices, while also supporting efficient vendor lifecycle management, asset tracking and inventory management across multiple project locations. The platform shall further integrate with net-metering systems and other relevant infrastructure to ensure comprehensive monitoring and operational control.

The solution shall ensure an effective, accurate and cost-efficient mechanism for the collection, transmission and storage of solar generation data and associated performance parameters in a centralized database. It shall further provide advanced analytics, reporting capabilities and dashboard-based visualisation for the presentation of actionable insights in prescribed formats to support informed decision-making.

The system shall additionally facilitate historical data analysis to identify performance bottlenecks, enhance system efficiency and improve the overall productivity and profitability of solar power plants. The agency shall also adopt and implement best practices for Operations and Maintenance (O&M) in alignment with newly developed Standard Operating Procedures (SOPs), ensuring that all O&M activities are executed efficiently and consistently.

Overall, the project aims to establish a robust, scalable and intelligent digital ecosystem for the monitoring, management and optimisation of solar power assets across the State of Jharkhand.

3.3 Minimum Eligibility Criteria

3.3.1 Constitution and Legal Status

In order to qualify for the Technical Bid, the Agency shall be one of the following:

- A Company registered under the Companies Act, 1956 or 2013; OR
- A Partnership firm registered under the Partnership Act, 1932; OR
- A Proprietorship Firm; OR
- A Limited Liability Partnership registered under the Limited Liability Partnership Act, 2008.

A Certificate of Incorporation, together with all relevant documents evidencing statutory permission to operate in India, shall be submitted along with the bid.

The Agency shall have a minimum existence of 03 years from the date of bid submission; valid documentary proof (CIN) must be attached in technical part-1.

3.3.2 Domain and Experience Requirements

The Agency shall fulfil the prescribed technical and financial eligibility criteria specified under this RFP and shall be actively engaged in the business of software development and website / web-portal development, with demonstrable experience in the successful execution of similar assignments.

"Similar Work" shall mean work pertaining to the development of web portals, web applications or software and IT/ITES System Integration work in any State Government, Central Government, Public Sector Undertaking (PSU) or other Government body.

3.3.3 Past Project Experience

The Agency shall have executed projects for Website Development / Web Application / Software / Web Portal in any Government Sector / Public Sector Undertaking (PSU)/ Power Sector Company during the last three (03) financial years, namely FY 2023-24, FY 2024-25 and FY 2025-26. The Agency shall furnish a Certificate of Completion or a Certificate of Performance issued by the competent authority.

3.3.4 Statutory Registrations

- The Agency shall hold a valid Permanent Account Number (PAN) issued by the Income Tax Department.
- The Agency shall hold a valid Goods and Services Tax (GST) Registration Number.

3.3.5 Affidavit of Non-Conviction and Non-Blacklisting

The Agency shall submit, along with the Part-I Technical Bid, an Affidavit on a Non-Judicial Stamp Paper of Rs. 100/- duly notarized by a Notary Public, declaring that the Agency and any of its Directors / Office Bearers / Authorized Agents:

- Has not been convicted by any court of law;
- Has not been blacklisted by any Government / Semi-Government concern;
- Does not have any named FIR or Criminal Case regarding misappropriation or defalcation of Government funds pending against it or its sister concerns by any authority.

The format of the said Affidavit is provided at Annexure-3 of this RFP.

3.3.6 Financial Requisites — Annual Turnover

The Agency shall have achieved a minimum average annual turnover of INR 4 (Four) Crore during the last three (03) audited financial years. The Agency shall furnish a Certificate of Annual Turnover issued by a Chartered Accountant carrying a valid UDIN, in the format prescribed at Annexure-4.

3.3.7 Certification

The Agency should have a valid ISO/IEC 9001:2015, ISO/IEC 20001:2018, ISO/IEC 27001:2022 certification as on the date of bid submission.

3.3.8 Participation For Joint Venture/Consortium

The Bid may be submitted by a Joint Venture (JV) or Consortium comprising not more than two (2) partners, with one partner designated as the Lead Partner. The Lead Partner shall independently fulfil all technical eligibility criteria, experience, specifications, and other technical requirements prescribed in the RFP, while the Consortium Partner may be considered solely for fulfilling the financial eligibility/financial capacity requirements. The Lead Partner shall have primary responsibility for technical execution and overall performance of the contract, and the roles and responsibilities of both partners shall be clearly defined in the JV/Consortium Agreement submitted with the Bid.

3.4 Exemptions for Micro and Small Enterprises (MSEs)

Jharkhand Procurement Policy 2014 shall be applicable to such Micro and Small Units (MSEs as defined under MSME Act 2006 of Govt of India and JIP-2012) of the State and other units/ enterprises of the state which fulfill all the following criteria:

- (i) The manufacturing or Service unit is located within the State of Jharkhand.

(ii) The Head Office or Corporate Office of such registered unit/company/enterprise is within the territorial jurisdiction of Jharkhand.

(iii) "MSE 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 any other body specified by Directorate of Industries, Jharkhand Govt from time to time and other industrial units/enterprises which have submitted IBM and been issued Date of Production (DOP) certificate by GM, DIC/MD, Industrial Area Development Authorities/ Director, Industries, GoJ or MSEs having Udyog Aadhar Number issued by Ministry of Micro, Small and Medium Enterprises, GoI to be duly verified, whether unit is existing/ 3 Jharkhand Procurement Policy 2014 functional and doing regular production at what capacity by GM, DIC/MD, Industrial Area Development Authorities/Director, Industries, GoJ".

(iv) The MSEs /other Enterprises and units must be registered under Jharkhand Goods and Services Tax (JGST) Act-2017 or The Central Goods & Services Tax (CGST) Act 2017.

(v) The MSE /other enterprise and unit must have encouraged local people in employment.

(vi) The MSE /other enterprise and unit must have complied with all statutory and legal formalities of concerned regulators/Act.

(vii) The MSE Unit availing preferential treatment will give an undertaking with respect to (i) to (vi) above including a categorical statement that the product/services being supplied to Govt. Deptt. or its agencies has been manufactured/created by the unit located in Jharkhand only, giving details of batch no./date or any other identifiable tag (GSI etc) as per prevalent established practice and will have to submit compulsorily duly signed copy of Form GSTR9C (For units having aggregate yearly turnover of more than 2 crores) as prescribed under JGST Act-2017". However, in case of VAT products/services, Form JVAT-409 (For units having of gross yearly turnover more than 60 lacs) issued by deptt. of Commercial taxes, Govt. of Jharkhand.

3.5 Evaluation of the Technical Bid

Technical evaluation shall be carried out on a 100-mark scale on the parameters set out in the table below. Each scoring item shall be substantiated by appropriate documentary evidence (work orders, completion / ongoing certificates, audited turnover certificates with UDIN, ISO and empanelment certificates, deployment letters etc.), failing which the relevant marks shall not be awarded.

Sl. No.	Short-Listing Criteria	Maximum Marks
1.1	General Bidder Average Annual Turnover of the Agency during the last three (03) financial years (FY 2022-23, 2023-24, 2024-25): • Up to INR 2 Crore: 2 marks • > INR 2 Cr and ≤ INR 3 Cr: 4 marks • > INR 4 Cr: 6 marks	08
1.2	In case of a Consortium, the Lead Bidder shall have proven experience in Software/Web Application Development and Deployment, while the Consortium Partner shall have proven experience in SITC of IT/ITES System Integration project at least one project of 2 Cr. Such experience shall be demonstrated through relevant Work Orders/Contracts along with Completion/Performance Certificates for projects executed during the last three (03) financial years (FY 2023-24 to FY 2025-26) for Government Departments, PSUs, or other Government Organizations. (Each project carries 5 marks; maximum 20 marks.)	20
1.3	The Bidder shall submit a valid Security Audit Certificate issued by a CERT-In Empanelled Agency for Software Development, Maintenance, and Support Services pertaining to Power Sector Web Portals, Web Applications, or Software Solutions executed for any State Government Department, Central Government Department, Public Sector Undertaking (PSU), or other Government Organization during the last three (03) financial years (FY 2023-24, FY 2024-25, and FY 2025-26). (Each project carries 2.5 marks; maximum 10 marks.) Marks Evaluation Criteria – The Bidder shall be awarded 2.25 (Two and two-five) marks for each successfully completed CERT-In Empanelled Information Security Audit assignment, supported by relevant documentary evidence, subject to a maximum of Nine (9) marks.	10
1.4	The bidder must submit ink signed/digital signed bid-specific Manufacturer Authorization Certificate(MAF).	5

Sl. No.	Short-Listing Criteria	Maximum Marks
1.6	Certifications held by the Agency • ISO 9001:2015 (Quality Management System – QMS)- 2 Mark • ISO 27001:2022 (Information Security Management System – ISMS)- 2 Mark • ISO 20000-1 (IT Service Management System – ITSM)- 2	6
1.7	The bidder is an MSE of Jharkhand, duly verified by GMDIC as per Jharkhand Procurement Policy 2014 and amendment thereon involved in similar work as per the requirement of NIB.	10
1.8	The Bidder should have experience in deployment of qualified technical software professionals for software development, maintenance, and support services in any power sector project for any State Government Department, Central Government Department, during the last three (03) financial years (FY 2023-24, FY 2024-25, and FY 2025-26). Documentary evidence — Completion/performance/Ongoing work order. (Each project carries two (2) marks; maximum 8 marks.)	10
1.9	The Bidder should have prior experience in providing, implementing, and maintaining Departmental Official Email IDs for any State Government Department, Central Government Department, Public Sector Undertaking (PSU) during the last three (3) financial years (2023-24, 2024-25, 2025-26). Between 5 to 10 mail IDs – 2 mark Between 10 to 15 mail IDs – 4 marks Above 15 Mail IDs – 6 marks Relevant documentary evidence such as Work Orders, Agreements, Completion Certificates, or Client Certificates, shall be submitted in support of the claimed experience.	06
1.10	Approach, Methodology, Solution Architecture and Presentation:	25
TOTAL MARKS		100

Only those Agency who have scored at least 70% marks in the Technical Bid evaluation shall be declared as 'Technically Qualified Bidders/Agencies/consortium ' and shall be considered for opening of the Financial Bid.

The Commercial Bids of only the 'Technically Qualified Agency ' shall be opened. The decision of JREDA in this regard shall be final and binding.

Agency shall quote rates for all items mentioned in the Price Schedule (Annexure-8). Any bid that fails to quote for all items shall be treated as non-responsive and shall be liable for rejection.

3.6 Evaluation of the Financial Bid (QCBS Methodology)

Bids of the Technically Qualified Agency shall be evaluated under the Quality cum Cost Based Selection (QCBS) method. The weightage assigned to the Technical Score and the Financial Score shall be ninety percent (80%) and ten percent (20%), respectively.

The lowest Financial Proposal (FP) shall be assigned a Financial Score (FS) of 100 points. The Financial Scores of other proposals shall be computed using the following formula:

$$FS = 100 \times (FP / F)$$

Where: FP is the lowest Financial Proposal, and F is the amount of the Financial Proposal under evaluation.

3.6.1 Final Evaluation

Proposals shall finally be ranked according to their combined Technical (TS) and Financial (FS) scores using the following formula:

$$S = (TS \times Tw) + (FS \times Fw)$$

Where Tw and Fw are the weights assigned to the Technical Proposal and the Financial Proposal respectively, namely 0.80 and 0.20.

The Selected Applicant shall be the Applicant having the highest combined score (H1). In the event of a tie at the Final Evaluation stage, the Agency securing the higher Technical Score shall be declared the Successful Agency. In case of a tie at both Technical and Commercial levels, both Agency shall be invited for negotiation by the tender-inviting authority, and the Agency offering the higher rebate shall be awarded the Letter of Acceptance (LOA).

SECTION-4: INSTRUCTIONS TO AGENCY

NIB No.: 18/JREDA/GCRT/IT/26-27

4.1 General

4.1.1 Scope of Bid

4.1.1.1 JREDA invites bids for the work described in this Bid Document, hereinafter referred to as "the Works". The name and identification number of the Works are set out in the Notice Inviting Bid (NIB).

4.1.1.2 The successful Agency shall be required to complete the Works by the Intended Completion Date specified in Part-I (General Conditions of Contract).

4.1.1.3 Throughout this Bid Document, the terms "bid" and "tender" — and their derivatives (Agency/tenderer, bid/tender, bidding/tendering) — are synonymous.

4.1.2 Source of Funds

JREDA has decided to undertake the Works of "Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring and Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand" through funds provided by the Government of Jharkhand to be implemented through JREDA.

4.1.3 Eligible Agency

4.1.3.1 This Invitation for Bids is open to all Agency meeting the eligibility criteria set out in Section-3.

4.1.3.2 Agency shall not be under any declaration of ineligibility for corrupt or fraudulent practices issued by the Central Government, any State Government, or any public undertaking, autonomous body or authority by whatever name called.

4.1.4 Qualification of the Agency

4.1.4.1 Agency shall furnish, in their bid, a preliminary description of the proposed work method and schedule, as necessary.

4.1.4.2 Agency shall include with their bid the following information and documents (unless otherwise stated in the NIB / ITB):

- Copies of original documents defining the constitution or legal status, place of registration and principal place of business of the Agency.
- Copy of the written Power of Attorney of the signatory of the Bid for purposes of bidding (Annexure-6).
- Total monetary value of similar nature of works performed.
- Experience in works of a similar nature and size during each of the last three (03) years, supported by certificates from the concerned officer or competent authority.
- Chartered Accountant certificate for the last three (03) years preceding bid submission, along with corresponding Income Tax Returns (ITRs).
- Details of any disputes during the last three (03) years (or year of incorporation, whichever is applicable) involving the Agency, the parties concerned, the disputed amount and the matter.

Financial Eligibility

- The Agency shall meet the Turnover Requirement specified in Section-3 of this NIB.
- The Agency shall meet the Net-Worth Requirement specified in Section-3 of this NIB.

To be eligible to participate in this tender, the consulting firm shall be registered under the Companies Act, 1956 or 2013.

Disqualification Notwithstanding Eligibility

Even though the Agency may meet the qualifying criteria, the Agency shall be liable for disqualification if it has:

- Made misleading or false representations in the forms, statements, affidavits or attachments submitted in proof of qualification requirements;
- A record of poor performance, such as abandonment of works, failure to complete contracts properly, inordinate delays in completion, an adverse litigation history or financial failures;
- Participated in earlier bidding for the same work and quoted unreasonably high or low bid prices, without rational justification acceptable to JREDA.

4.1.5 One Bid per Agency

Each Agency shall submit only one Bid for the Work. A Agency submitting more than one Bid shall be disqualified.

4.1.6 Cost of Bidding

The Agency shall bear all costs associated with the preparation and submission of the Bid. JREDA shall in no event be responsible or liable for such costs, regardless of the conduct or outcome of the bidding process.

4.1.7 Site Visit

Site visit, if any, shall be undertaken in accordance with the requirement set out in Section-6 (Scope of Work) of this NIB.

4.2 Bidding Document and Evaluation

4.2.1 Content of Bidding Documents

The set of bidding documents comprises the documents listed below, together with any addenda issued in accordance with Clause 4.2.3 below:

- Notice Inviting Tender.
- Instructions to Agency.
- Qualification Information.
- Conditions of Contract.
- Specifications.
- Bill of Quantities.
- Form of Bid.
- Form of Bank Guarantee.

The Agency is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms and specifications, and Bill of Quantities in the Bid Document. Failure to comply with the requirements of the Bid Documents shall be at the Agency's own risk. Bids that are not substantially responsive to the requirements of the Bid Documents shall be rejected.

4.2.2 Clarification on Bid Documents and Pre-Bid Meeting

4.2.2.1 A prospective Agency requiring clarification on the bid documents may inform JREDA in writing at the address indicated in the NIB. JREDA's response shall be uploaded as a corrigendum on www.jreda.com and on the e-Procurement Portal.

4.2.2.2 A pre-bid meeting for clarification of any doubts or queries of prospective Agency shall be held on the date specified in the e-Procurement Notice via Google Meet / Microsoft Teams / Zoom or any equivalent platform. Agency are requested to provide the e-mail IDs of their authorised personnel to JREDA at info@jreda.com at least three (03) days prior to the date of the pre-bid meeting.

4.2.2.3 Agency shall submit any questions in writing or by e-mail so as to reach JREDA not later than two (02) days before the meeting.

4.2.2.4 Any modification to the bid document arising from the pre-bid meeting shall be made by JREDA exclusively through the issue of an Addendum / Corrigendum on the e-Procurement Portal.

4.2.3 Amendment of Bidding Documents

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

4.2.3.2 To allow prospective Agency reasonable time to take an addendum into account in preparing their bids, JREDA may, where necessary, extend the deadline for submission of bids.

4.3 Preparation of Bids

4.3.1 Language of Bid

All documents relating to the Bid shall be in the language specified in the Notice Inviting Bid, namely English.

4.3.2 Documents Comprising the Bid

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

(i) EMD and Tender Fee — Scanned copy of the Demand Draft drawn in favour of "Director, JREDA", payable at Ranchi, towards the Tender Fee; and a scanned copy of the Demand Draft / Bank Guarantee towards Earnest Money Deposit, in the amount specified in the NIB.

(ii) Technical Details and Declarations

- Proposed work programme, including work method, time schedule and financial flow, together with descriptions and charts as necessary, all duly digitally signed, in compliance with the requirements of the Bid Document.
- Scanned copy of an Affidavit by the Agency confirming acceptance of the Standard Bidding Document (SBD).

(iii) Other Documents to be Uploaded

Scanned copies / prescribed formats of the following documents shall be attached in "My Document" section of the e-Procurement Portal in PDF format, duly digitally signed by the Agency:

- PAN Card.
- GST Registration Certificate.
- Proof of completion of similar works during the last three (03) years, and list of similar works in hand, in the prescribed formats, duly signed by the competent authority of the issuing Department.
- List of works for which bids have already been submitted.
- Audited Account Statements / Balance Sheets for the last three (03) financial years (FY 2022-23, 2023-24, 2024-25), certified by a Chartered Accountant.
- Turnover details certified by a Chartered Accountant (Annexure-4).
- Net Worth Certificate certified by a Chartered Accountant (Annexure-5).
- List of current litigation cases involving the Agency, if any.
- Affidavit for non-engagement of related persons.
- Authorised address and contact numbers of the Agency, as required by the NIB, duly digitally signed.
- Undertaking confirming validity of bid for 180 days.

B. Financial Bid (Finance Cover)

- Duly quoted and digitally signed Bill of Quantities (BoQ) / Price Bid in the file supplied by JREDA.
- Declaration by the Agency in the prescribed format (Annexure-3) in PDF, duly digitally signed.

4.3.3 Documents Deemed Part of the Bid

The following documents, although not separately uploaded by the Agency, shall be deemed to form part of the bid:

- Notice Inviting Bid.
- Instructions to Agency .
- Conditions of Contract.
- Contract Data.
- Specifications.

4.3.4 Bid Prices

4.3.4.1 The Contract shall cover the entire Works as described in Clause 4.1.1.1 above.

4.3.4.2 The Agency shall adopt the Item Rate Method specified in the NIB; the same option shall apply to all Agency .

4.3.4.3 All duties, taxes, royalties and other levies payable by the Agency under the Contract, or for any other cause, shall be deemed to be included in the rates, prices and total Bid price quoted by the Agency.

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

4.3.4.5 Annual Maintenance Contract (AMC): The AMC shall initially be awarded for a period of three (03) years commencing from the date of successful commissioning and acceptance of the respective phase of the work. Upon completion of the initial AMC period, the AMC may be extended for a further period of up to two (02) years by mutual consent between the Department and the Agency, based on the satisfactory performance of the Agency and the continued requirement of the Department. During such extended period, the rates quoted and accepted under the BoQ/Price Schedule of this RFP shall remain firm, fixed and unchanged, and no price escalation or increase in the accepted rates shall be admissible to the Agency. The extension shall be subject to mutual written consent of both parties, approval of the Competent Authority, satisfactory performance of the Agency, and compliance with the applicable terms and conditions of the Contract.

4.3.4.6 Agency shall quote rates with due consideration for site-condition variations, variations in component prices and the volume and quality of work involved. Where JREDA forms the view that any rate is abnormally low or abnormally high, the bid may be cancelled.

4.3.5 Currency of Bid

All unit rates and prices shall be quoted in Indian Rupees (INR) only.

4.3.6 Bid Validity

4.3.6.1 Bids shall remain valid for a period of 180 (One Hundred Eighty) days from the deadline for bid submission specified in this Bid Document. A bid valid for a shorter period shall be rejected by JREDA as non-responsive.

4.3.6.2 In exceptional circumstances, prior to expiry of the original validity period, JREDA may request Agency, in writing or by e-mail, to extend the validity for a specified additional period. A Agency may decline the request without forfeiture of Earnest Money. A Agency accepting the request shall not be required or permitted to modify its bid, but shall extend the validity of its EMD for the period of extension and shall otherwise comply with the relevant provisions of this ITB.

4.3.7 Earnest Money / Bid Security

4.3.7.1 The Agency shall furnish, as part of its Bid, Earnest Money in the amount specified in the NIB.

4.3.7.2 The Earnest Money shall, at the Agency's option, be in the form of Bank Guarantee or Demand Draft drawn on a Scheduled Commercial Bank in favour of "Director, JREDA". The Bank Guarantee shall be valid for a period of twelve (12) months or more after the last date of receipt of bids.

4.3.7.3 Any bid not accompanied by an acceptable EMD, save for exemptions provided in the NIB, shall be rejected by JREDA as non-responsive.

4.3.7.4 EMD of unsuccessful Agency shall be returned within thirty (30) days from the end of the bid validity period.

4.3.7.5 The EMD of the successful Agency shall be discharged upon execution of the Agreement and submission of the required Security Deposit.

4.3.7.6 The Earnest Money shall be liable for forfeiture if:

- The Agency withdraws its Bid after bid opening during the period of bid validity; OR
- In the case of a successful Agency, the Agency fails, within the specified time, to (a) sign the Agreement; and/or (b) furnish the required Performance Security and Security Deposit.

4.3.8 Alternative Proposals by Agency

Agency 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 shall be rejected as non-responsive.

4.4 Submission of Bids

4.4.1 Sealing and Marking of Bids

4.4.1.1 The Agency shall upload two separate files: "Technical Bid" (File-I) and "Financial Bid" (File-II), with appropriate markings.

4.4.1.2 The Technical Bid shall be marked: "To be opened on (date and time of Technical Bid opening as per Clause 4.5.1.1)". The contents of the Technical and Financial Bids shall be as specified in Clause 4.3.2 above. All documents shall be digitally signed by the Agency.

4.4.1.3 The Technical and Financial Bid files shall (a) be addressed to JREDA at the address provided in the NIB; (b) bear the name and identification number of the Contract; and (c) carry a clear warning not to open before the specified date and time of Bid opening.

4.4.2 Deadline for Submission of Bids

Complete bids (including Technical and Financial Bids) shall be received by JREDA at the address and within the deadline notified in the e-Procurement Notice.

4.5 Bid Opening

4.5.1 Bid Opening

4.5.1.1 JREDA shall open the bids in the presence of the Agency ' authorised representatives who choose to attend, at the time, date and place specified in the NIB. Agency ' representatives attending the opening shall sign a register evidencing their attendance.

4.5.1.2 The Agency's name, the Bid prices, any modifications, bid withdrawals, the presence or absence of EMD and any other relevant details shall be announced by JREDA at the opening.

4.5.2 Process to be Confidential

Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of the Contract shall not be disclosed to Agency or any other persons not officially concerned with such process until the award of the Contract to the successful Agency has been announced. Any attempt by a Agency to influence JREDA's processing of bids or award decisions may result in rejection of the Agency's bid.

4.5.3 Clarification of Bids

To assist in the examination, evaluation and comparison of bids, JREDA may, at its discretion, request any Agency for clarification of its bid, including break-ups of unit rates. Such request and the response shall be in writing. No change in the price or substance of the bid shall be sought, offered or permitted, except as required to confirm the correction of arithmetical errors discovered by JREDA in the evaluation of the bid.

4.5.4 Examination of Bids and Determination of Responsiveness

4.5.4.1 Prior to detailed evaluation, JREDA shall determine whether each bid (a) meets the eligibility criteria; (b) has been properly signed; (c) is accompanied by the required EMD; and (d) is substantially responsive to the requirements of the Bid Document.

4.5.4.2 A substantially responsive bid is one which conforms to all the terms, conditions and specifications of the Bid Document without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality or performance of the Works, or which limits in any substantial way (inconsistent with the Bid Document) JREDA's rights or the Agency's obligations under the Contract, or whose rectification would unfairly affect the competitive position of other Agency submitting substantially responsive bids.

4.5.4.3 If a bid is not substantially responsive, it shall be rejected by JREDA, and the deficiency shall not subsequently be made responsive by the Agency by correction or withdrawal of the non-conforming deviation or reservation.

4.5.5 Correction of Errors

4.5.5.1 Bids determined to be substantially responsive shall be checked by JREDA for any arithmetical errors. Errors shall be corrected as follows:

- Where there is a discrepancy between the unit price and the total price obtained by multiplying the unit price by the quantity, the unit price quoted shall prevail and the total price shall be corrected;
- Where there is a discrepancy between the words and figures, the amount in words shall prevail.

4.5.5.2 The bid amount stated by the Agency shall be adjusted by JREDA in accordance with the above procedure for correction of errors and, with the concurrence of the Agency, shall be considered binding upon the Agency. If the Agency does not accept the corrected amount, the bid shall be rejected and the EMD shall be liable for forfeiture.

4.5.6 Evaluation and Comparison of Bids

4.5.6.1 JREDA shall evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 4.5.4 above.

4.5.6.2 In evaluating the bids, JREDA shall determine, for each bid, the evaluated bid price by adjusting the bid price for arithmetical errors as set out above.

4.5.6.3 JREDA reserves the right to accept or reject any variation, deviation or alternative offer.

4.6 Award of Contract

4.6.1 Award Criteria

Subject to Clause 4.6.2 below, JREDA shall award the Contract to the Agency whose bid has been determined to be substantially responsive to the Bid Document and which has been ranked H-1 under the QCBS evaluation methodology, provided further that the Agency is determined to be qualified to perform the Contract satisfactorily.

4.6.2 JREDA's Right to Accept Any Bid

Notwithstanding Clause 4.6.1 above, JREDA reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to the award of the Contract, without thereby incurring any liability to any affected Agency or Agency, or any obligation to inform the affected Agency or Agency of the grounds for JREDA's action.

4.6.3 Notification of Award and Signing of Agreement

4.6.3.1 The Agency whose bid has been accepted shall be notified of the award by JREDA, prior to expiration of the bid validity period, by e-mail and by registered letter. This letter (the "Letter of Acceptance") shall state the sum that JREDA shall pay to the Agency for the execution and completion of the Works (the "Contract Price").

4.6.3.2 The notification of award shall constitute the formation of the Contract, subject only to the furnishing of a Performance Security in accordance with Clause 4.6.4.

4.6.3.3 The Agreement shall incorporate the NIB document, Work Order and any subsequent amendments agreed between JREDA and the successful Agency. It shall be signed by JREDA and the successful Agency following submission of the Security Deposit.

4.6.3.4 Upon furnishing of the Performance Security by the successful Agency, JREDA shall promptly notify the other Agency that their bids have been unsuccessful.

4.6.4 Security Deposit / Performance Security:-

4.6.4.1 Security Deposit:

- Successful Agency shall submit a security deposit @10% of the allotted work order value in the form of DD/Bank Guarantee/TDR/FDR valid for one year on or before 15 days from issuing work order. If Bank Guarantee/DD/TDR/FDR will not be submitted within stipulated period from the date of issue of work order, then JREDA shall cancel the work order.
- Successful MSEs agency shall be required to deposit only 1% of security deposit the form of DD/Bank Guarantee/TDR/FDR valid for one year on or before 15 days from issuing work order. If Bank Guarantee/DD/TDR/FDR will not be submitted within stipulated period from the date of issue of work order, then JREDA shall cancel the work order.
- The Security Deposit shall be refunded /released to the bidder after 60 days from completion of the works and submission of performance guarantee.

4.6.4.2 Performance Guarantee

- Successful General bidder shall submit a performance guarantee @5% of the allotted work order value in the form of DD/Bank Guarantee/FDR/TDR valid for three years on or before release of any payment.
- Successful MSEs Bidders/New MSEs shall submit a Performance Guarantee @0.5% of the allotted work order value in the form of DD/ Bank Guarantee/FDR/TDR before release of any payment.

- The Security Deposit/Performance Guarantee shall be submitted in the form of DD/Bank Guarantee/FDR/TDR in favor of "Director, JREDA" payable at Ranchi from any Indian Nationalized bank/Scheduled bank.
- The Performance Guarantee shall be refunded /released to agencies after successful execution of contract and completion 03 years Comprehensive Maintenance Contract (CMC) period.
- The Bank shall be governed by RBI BI e-portal, the details are under. This Bank 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
- Non-submission of Security Deposit/Performance Guarantee within the time frame, shall lead to forfeiture of EMD and cancellation of LOI/W.O.

4.6.5 Advances

JREDA shall not provide any advance against the security of equipment except as specifically provided in Part-I (General Conditions of Contract).

4.6.6 Corrupt or Fraudulent Practices

JREDA requires Agency / Agency to strictly observe the laws against fraud and corruption in force in India, including in particular the Prevention of Corruption Act, 1988.

4.7 Project Timeline / Completion Period

The indicative timeline for the project is set out below:

Sr. No.	Particulars	Timeline (in Days)
1	Letter of Award	X (Day Zero)
2	Submission of Security Deposit and Signing of Agreement	Within X + 15 Days
3	Requirement Gathering	X + 30 Days
4	Fully Operational IT-based performance monitoring and evaluation web portal and all other associated software for Solar Power Projects across Jharkhand; basic version of Mobile Application for monitoring and other works as per the Scope of Work.	X + 150 Days
5	Other related work in line with the Scope of Work	Throughout the period of engagement

4.8 Litigation History

The Agency shall furnish detailed information on any litigation or arbitration arising out of contracts completed or under execution by it during the last five (05) years. A consistent history of awards involving litigation against the Agency, or any partner of a Joint Venture, may result in rejection of the bid.

4.9 Period of Engagement

The Agency shall be engaged for an initial period of one (01) year from the date of signing of the Agreement. An extension of a further one (01) year may be granted at the discretion of JREDA, subject to satisfactory performance by the Consultancy Firm. The total period of contract, including the comprehensive three-years AMC, shall be Thirty-Six (36) months.

SECTION-5: GENERAL TERMS AND CONDITIONS**NIB No.: 18/JREDA/GCRT/IT/26-27****5.1 Introduction**

The instructions and information contained in this Bid Document are intended for the guidance and compliance of intending Agency. Agency are advised to obtain clarifications from JREDA in respect of any matter prior to submission of their bids; failing which it shall be deemed that the stipulations of this Bid Document have been read, understood and accepted by the Agency.

The Agency shall bear all costs associated with preparation and submission of the bid, including journeys undertaken by it and the subsequent bidding process up to the award of the order to the successful Agency. JREDA shall in no circumstances be responsible or liable for such costs, regardless of the conduct or outcome of the bidding process.

5.2 Scope of Work

The scope of work shall be the development of an IoT-enabled Vendor Empanelment, Asset and Inventory Management System with IT-based Performance Monitoring, Evaluation and Centralized Monitoring Dashboard for Solar PV Systems installed across the State of Jharkhand, in accordance with the detailed scope set out in of this NIB.

5.3 Bid Documents

The tender documents shall comprise all documents listed in this Bid. In addition, any other documents, amendments, revisions or instructions issued by JREDA from time to time to Agency till the due date of opening of bids shall also be deemed to form an integral part of the Bid Document.

5.4 Price

The Agency shall quote prices as per the Schedule of Items of Work (Annexure-8). Contract prices and rates shall be firm and binding and shall not be subject to any variation, save for statutory variations of taxes and duties during the contractual completion period. Prices shall be inclusive of all taxes and charges applicable as on the opening date of the tender.

The price shall further include all charges towards designing, manufacturing, inspection, supply, transport, insurance, handling and any other charges. All applicable charges for obtaining necessary clearances — including commercial tax, road permits and similar — wherever required — shall be deemed to be included in the contract price.

5.5 Inspection of Factory and Tests

JREDA reserves the right to inspect the manufacturer's works / factory to ascertain the capability and availability of necessary equipment and infrastructure required for the manufacture of the items offered. JREDA shall have the right of access to inspect the works or any part thereof at any stage and to test the goods to confirm their conformity to the technical specifications. The successful Agency shall give JREDA at least fifteen (15) days' advance notice of the scheduled despatch for technical sample audit.

5.6 Payment Terms and Conditions

Subject to any deductions which JREDA may be authorised to make under the Contract, the Agency shall be entitled to payment based on milestone deliverables completed and approved by JREDA. Payments shall be released in stages on achievement of the following milestones:

S. No.	Milestone	Payment Terms
1	Development and Deployment of IT-based Performance Monitoring, Evaluation and Centralised Web Portal Software for Solar Power Projects across Jharkhand.	Milestones Basis 10% of value mentioned in sr. no. 1 of Price Bid: Upon Submission of PBG. 10% of value mentioned in sr. no. 1 of Price Bid: After freezing the

S. No.	Milestone	Payment Terms
		requirement • 30% of value mentioned in sr. no. 1 of Price Bid: After UAT Testing • 50% of value mentioned in sr. no. 1 of Price Bid: After Go-Live of System
2	Comprehensive Annual Maintenance Contract (AMC) for three (3) years.	Quarterly Payment
3	Hosting and Cloud Server (Quarterly Price) for three (03) years, (single server with backup location, without load balancer or Disaster Recovery).	Quarterly Payment
4	Procurement, Installation, Commissioning and Integration of an IoT-based Data Logger Device.	(a) 50% advance against Purchase Order for purchase and installation; (b) 50% upon successful installation.
5	Procurement of GSM SIM with monthly internet data activation recurring charge for three years,	Monthly Payment

Note: All commercial invoices raised at the time of supply shall be submitted in triplicate (1 + 2) and in the original copy.

5.7 Liquidated Damages for Delay in Completion

If the Agency fails in the due performance of the Contract — including failure to deliver any part of the equipment or to complete the Works within the time fixed under the Contract or any extension granted thereto by JREDA, or failure to fulfil its obligations within time — the Agency shall be liable to pay JREDA Liquidated Damages at the rate of 0.5% per week of the value of work delayed beyond the contracted period, subject to a maximum of 10% of the value of such delayed Works.

5.8 Risk and Cost

If the Agency fails to complete the awarded work from the scheduled date of completion, JREDA shall be at liberty to cancel the said Work Order and to get the whole or any part of the unfinished work completed by engaging an alternative Agency. The said Works shall be completed at the risk and cost of the failed Agency, and the failed Agency shall be liable to compensate JREDA for all dues arising therefrom.

5.9 Insurance

The Agency shall arrange for transit and erection insurance of materials and equipment for the setting up of the Solar Photovoltaic System. The Agency shall further arrange for insurance of materials and equipment up to completion of work and handover in all respects. In the event of theft or damage to equipment during the completion period, the Agency / Supplier shall be responsible for rectification at its own cost.

5.10 Assignment / Sub-Letting

The Agency shall not assign or sub-let — whether in whole or in part — its obligations under the Order / Contract relating to manufacture, shop testing, packing and forwarding, transportation, transit insurance or supply, to any third party.

In the event the Agency contravenes this condition, JREDA reserves the right to reject the equipment / Works under the Contract and to procure the same from elsewhere at the Agency's risk and cost. The Agency shall be solely liable for any loss or damage which JREDA may sustain as a result of such replacement of the contracted Works.

5.11 Completeness of Tender

All fittings, assemblies, accessories, hardware items and safety / protection devices required for the Works shall be deemed to be included in the tender, whether such items are specifically mentioned in the Bill of Materials (BoM) or not.

5.12 Compliance with Regulations

The Supplier / Agency shall comply with all applicable laws, ordinances, codes, approved standards, rules and regulations, and shall procure all necessary municipal and other statutory permits and licences at its own cost. The Agency shall keep the Director, JREDA harmless against any consequences arising from infraction thereof.

5.13 Agreement

The successful Agency shall enter into an Agreement, in the prescribed format, with the Director, JREDA, prior to commencement of supply, within three (03) days from the date of issue of the Work Order, accompanied by the required Security Deposit.

5.14 Income Tax

Without prejudice to the obligations of the Supplier under law, any income tax which JREDA may be required to deduct by law / statute shall be deducted at source and paid to the income-tax authorities on account of the Supplier. JREDA shall furnish a certificate to the Supplier evidencing such deduction.

5.15 Force Majeure

In the event either party is rendered unable, by force majeure, to perform any obligation required under this Agreement, the corresponding obligation of the affected party shall be treated as suspended for the duration of the force majeure condition.

The term "force majeure" shall include riots (other than among the Agency's employees), civil commotion, war (whether declared or not), invasion, acts of foreign enemies, hostilities, rebellion, insurrection, military coup d'état, acts of God such as earthquake, lightning, floods, fires (not caused by the Agency's negligence) and any other cause beyond the reasonable control of the Agency, as accepted by the Director, JREDA, whose decision in the matter shall be final and binding.

If the work remains suspended on account of force majeure conditions for a period exceeding forty-five (45) days, the Purchaser shall, at its discretion, have the option of cancelling the Contract in whole or in part. The Agency shall not be entitled to claim any compensation for such force majeure conditions.

5.16 Warranty and Support

The successful Agency shall provide a comprehensive warranty for all supplied hardware for a period of twelve (12) months from the date of successful installation, commissioning and acceptance by the Purchaser. During the warranty period, any defect or failure in hardware components shall be rectified or replaced by the Agency at no additional cost to the Purchaser. Any replacement of hardware after expiry of the warranty period shall be carried out on chargeable basis with the prior written approval of the Purchaser.

The Agency shall provide software support and bug-fix services for a period of Thirty Six (36) months from the date of commissioning. Such support shall include corrective maintenance, issue resolution and updates required for proper functioning of the system.

The warranty shall not extend to damages arising from physical damage, mishandling, unauthorised intervention, electrical fluctuation, power surge or any other cause attributable to improper usage by the Purchaser. Failures caused by telecom or network-service interruptions, and force-majeure events, shall not be covered under the warranty.

5.17 Data Security and Ownership

The Agency shall ensure that all data is hosted on secure cloud infrastructure with appropriate security controls, access restrictions and backup mechanisms. Periodic automated backups shall be maintained to safeguard against data loss and to ensure service continuity.

All data generated and maintained under the project shall remain the property of the Purchaser during the currency of the Contract. The Agency shall maintain confidentiality of such data and shall not use or disclose the same without the prior written approval of the Purchaser.

Any requirement for server migration, data export or handover of data upon completion or termination of the Contract shall be undertaken by the Agency on terms and charges mutually agreed by both parties, unless otherwise specified in the Contract.

5.18 Limitation of Liability

The aggregate liability of the Agency under the Contract shall not exceed the total Contract value. The Agency shall not be liable for any indirect, incidental, consequential or special damages — including loss of revenue, business interruption or loss of data — arising from use of the system.

The Agency shall not be held responsible for non-performance or degradation of services arising from unstable network connectivity or failure of third-party telecom infrastructure beyond the Agency's control.

5.19 Change Management

Any change in the approved scope of work after the issuance of the Work Order shall be treated as a Change Request / Variation Order and shall be implemented only with the prior written approval of the Purchaser. Any additional functionality, enhancement or integration not included in the original scope of work shall be subject to separate technical evaluation and commercial approval by the Purchaser.

- Changes necessitated by amendments to applicable laws, government policies or regulatory requirements after award of the Contract may be considered as additional scope of work and shall be addressed on mutually agreed terms.

5.20 Source Code Policy and Intellectual Property Rights

5.20.1 Source Code Policy

- The Agency agrees to provide the source code of the developed application to the Client upon successful completion of the project and after full realisation of payment.
- The core architecture, reusable components, frameworks, APIs and proprietary libraries shall remain the intellectual property of the Agency.
- The source code shall be provided strictly for the internal operational use of the Client.
- The Client shall not resell, sub-license, transfer or commercially exploit the software or source code to any third party without the prior written consent of the Agency.
- Any unauthorised use, modification or redistribution shall be treated as a violation of intellectual property rights.

5.20.2 Intellectual Property Rights

- Project-specific customisation: Client usage rights.
- Core technology and framework: Agency ownership.
- Third-party tools / licences (if any): Governed by their respective terms.

5.20.3 Data Ownership and Security

- All operational data (vendor, plant and monitoring data) shall remain the property of the Client.
- The Agency shall ensure data confidentiality, secure storage and controlled access.

5.20.4 Hosting and System Control

- Initial hosting and deployment shall be undertaken by the Agency.
- Server architecture and security layers shall remain under the Agency's design control.
- In the event of migration, support shall be provided on chargeable basis.

5.21 Jurisdiction

All disputes arising out of or in connection with this Contract shall be settled within the territorial jurisdiction of the courts at Ranchi, Jharkhand, only.

SECTION-6: SCOPE OF WORK

NIB No.: 18/JREDA/GCRT/IT/26-27

6.1 Background and Context

The proposed Centralized Monitoring System shall be an IT-based platform for Performance Monitoring, Evaluation and centralised management of solar power projects across the State of Jharkhand. The system shall provide an effective, accurate and cost-efficient mechanism for the collection, transmission and storage of solar generation data and associated performance parameters in a centralised database, followed by analysis and presentation of insights in prescribed formats.

The IT solution shall enable continuous remote monitoring, net-metering integration, maintenance tracking and asset management — leading to measurable improvement in productivity and profitability of installed plants — and shall support analytics on historical data to identify performance bottlenecks at the plant and device levels. Best practices for Operation and Maintenance (O&M) of solar power plants, codified through newly developed model Standard Operating Procedures (SOPs), shall be adopted to ensure consistent and measurable execution.

6.2 Title of Work

The Government of Jharkhand has sanctioned a scheme of approximately 7 (seven) MW for the installation of GCRT Solar Power Plants on various Government buildings. The principal purpose of this NIB is to monitor, evaluate, and design, develop, implement and host an IoT-enabled Vendor empanelment, Asset and Inventory Management System and an IT-based Performance Monitoring and Evaluation Framework, along with Three (03) Years of Comprehensive AMC for solar power projects across the State of Jharkhand. The focus is on the design, development and operationalization of a centralized monitoring system that integrates with the existing RMS for solar power projects.

6.3 Detailed Scope of Work and Functional Modules

The project aims to establish an integrated IT-based Performance Monitoring, Evaluation and Centralised IoT-enabled Vendor empanelment empanelment, Asset and Inventory Management System, along with three (03) Years of Comprehensive AMC for solar power projects across the State. The scope further includes deployment of IoT-enabled Data Acquisition Devices (DADs) to ensure reliable, standardized and real-time availability of operational data from solar installations.

At present, approximately 3300+ solar rooftop installations are operational across the State of Jharkhand; however, a significant number of sites are non-communicating due to network connectivity constraints and other technical issues. To address the same, the selected Bidder/Agency/Consultant shall be responsible for the supply, installation, configuration, and commissioning of IoT-based monitoring devices in a phased manner.

The IoT solution shall be GSM SIM-based, and the bidder shall be responsible for provisioning, activation, and management of the GSM SIM cards, ensuring reliable connectivity for data transmission from all project sites.

Phase-I:

The deployment of IoT Devices/Data Loggers shall be carried out in a phased manner to ensure systematic implementation and successful validation. In Phase-I, the selected bidder shall undertake the supply, installation, configuration, commissioning, and integration of approximately 500 IoT Devices/Data Loggers across project sites located in around five (5) districts, or as identified by JREDA. The deployed solution shall enable automated data acquisition, seamless integration with the centralized monitoring platform, secure data transmission, and real-time performance monitoring, thereby improving operational efficiency and enabling data-driven decision-making. The bidder shall also ensure successful testing, stabilization, user acceptance, and performance validation of the deployed solution during this phase.

The deployment shall commence with an initial phase of 500 IoT Data Logger devices and shall continue progressively in subsequent phases until all eligible JREDA solar-grid sites are covered. JREDA has presently identified more than 3,300 sites for IoT installation. Each subsequent phase shall be allotted based on site availability and readiness, and the selected Agency/Bidder/Consortium shall complete the supply, installation, commissioning and integration of the IoT devices for each allotted phase within 6 months from the date of allotment of that phase, as directed by JREDA. Accordingly, the implementation approach, quality standards, and system functionalities established during Phase-I shall be consistently followed throughout all phases to ensure uniform performance and seamless integration across all installations.

The bidder shall quote a separate unit rate for each IoT Device/Data Logger in the Bill of Quantities (BoQ). The quoted rate shall be inclusive of all costs associated with supply, transportation, installation, commissioning, configuration,

GSM/Data SIM provisioning, accessories, mounting hardware, integration with the centralized monitoring system, testing, training, warranty, and all applicable taxes and duties.

6.4 Vendor Management/Empanelment and Performance Monitoring Module

The selected Agency shall design, develop, implement and operationalize a comprehensive Vendor Management/Empanelment and Performance Monitoring Module to effectively manage and monitor vendors engaged in installation, operation and maintenance of solar power systems across Jharkhand.

The Agency shall develop and maintain a centralised vendor database capturing complete details of all empanelled vendors, including their registration information, service areas, technical capabilities and historical performance records. The system shall ensure ease of access, data integrity and role-based access for authorised users.

This module shall enable tracking and evaluation of vendors responsible for installation and maintenance of solar systems.

6.4.1 Vendor Database Management

The system shall provide a centralised and structured repository for maintaining comprehensive details of all empanelled vendors. This shall include vendor registration details, organisational profile, contact information, service locations, technical capabilities, certifications, past project experience and contractual information. The module shall support creation, updation, validation and archival of vendor records, with appropriate role-based access control to ensure data security and integrity.

6.4.2 Vendor Activity Tracking

The system shall enable detailed tracking of all activities performed by vendors, including installation, commissioning, preventive maintenance, corrective maintenance and service visits. Each activity shall be logged with relevant details such as project / site location, date and time, type of activity, resources deployed and completion status. The module shall provide real-time visibility into field operations and shall maintain a historical log of all vendor activities for monitoring and audit purposes.

6.4.3 Public Portal Modules

Module A — Home Page & Information Module

Dynamic CMS-driven home page with configurable banners, sliders, and announcements.

Departmental information, message, organisational structure, and contact directory.

SOP section with downloadable documents.

Latest news ticker with archive facility.

FAQ section, Sitemap, Terms of Use, Privacy Policy, Accessibility Statement.

Grievance Redressal module with ticket-based tracking and complaint management.

6.4.4 Module B — Contractor Registration Module (New Registration)

Online self-registration with Aadhaar-based e-KYC and OTP verification.

Multi-step guided registration wizard with validation and progress indicators.

Upload facility for required documents including Photograph, Signature, PAN Card, Address Proof, Affidavit,

Incorporation Certificate, MOA/AOA, Partnership Deed, etc.

Auto-population from PAN/Aadhaar databases wherever permitted.

Digital signature support.

Draft save functionality.

Acknowledgement number generation with SMS/Email notifications.

Class-wise registration (Class 1–3) with eligibility validation.

6.4.5 Module C — Contractor Renewal Module

Online renewal with pre-filled data.

Document re-upload facility.

Renewal fee calculation and payment via payment gateway.

Renewal status tracking with SMS/Email alerts.

6.4.6 Module D — Payment Integration Module

Seamless payment gateway integration supporting Net Banking, Debit Card, Credit Card, UPI.

Auto-reconciliation with challan verification.

Offline payment recording facility.

Payment receipt generation.

Refund management for rejected or cancelled applications.

6.4.7 Module E — Applicant Dashboard

A personalised dashboard shall display application status, certificate validity, renewal alerts, and payment history. It shall provide download facility for Registration Certificate, Payment Receipts, and Acknowledgements; a notification centre; profile management; grievance submission and tracking; and work-order register access.

6.4.8 Department Admin Panel Modules

Module A — Multi-Level Dashboard & Analytics

Role-based dashboards.

Real-time data summaries with graphical analytics and KPI tracking.

Date-range filters and export functionality.

6.4.9 Module B — Application Processing Workflow

Features shall include:

Segregation of New and Renewal cases.

Advanced Inbox with search and filters.

Application view with document viewer (zoom, rotate, download).

Verification checklist and bilingual process interface.

Bulk action capability.

Auto-escalation for SLA breaches.

Complete action audit trail.

6.4.10 Module C — Certificate Management Module

Digital certificate generation with auto-population.

QR Code-based verification for authenticity.

Certificate pending queue with challan verification and OTP-based approval.

Send Reminder functionality.

Certificate revocation and cancellation workflow.

6.4.11 Module D — Comprehensive Reporting Module

Application reports with multi-criteria search.

Revenue reports displaying total revenue.

Pendency reports with role-wise distribution.

Disposal reports with date-range filters.

Custom report builder for ad-hoc reports.

Scheduled report generation with automated email delivery.

6.4.12 Additional Modules

SMS & Email Notification Engine with automated alerts at every stage.

Audit Trail & Logging covering all user actions, file movements, and system events.

Document Management System (DMS) with centralised repository, version control, and search capability.

Grievance Redressal Module with SLA-based resolution and escalation matrix.

Blacklist Management module with public display capability.

Master Data Management module for managing dropdown values, fee structures, classifications, and configurable parameters.

User Management module for creation, modification, and deactivation of departmental users with role-based permissions.

API Gateway providing a secure RESTful API layer for future integration with departmental systems and third-party platforms.

6.6 Asset Management System

This module shall constitute the master record of every physical asset owned or managed by JREDA on solar power plants, including Grid-Connected Rooftop (GCRT) plants, Government-building plants, mini-grid and micro-grid assets, and IoT Data Acquisition Devices. It shall not be implemented as a standalone spreadsheet or unstructured document

repository. It shall operate as the system of record for vendor works, IoT telemetry mapping, inventory and spare consumption, tickets, warranty administration and MIS.

The Agency shall design the module for not less than 3300+ existing rooftop sites, more than 3,300 identified IoT sites, the sanctioned approximately 7 MW additional GCRT scheme, and future growth across all twenty-four (24) districts of Jharkhand. Every asset record shall be usable at State, District, Block/Panchayat, Plant, Block/Array and Device levels. The Agency shall be responsible for design of the data model, hierarchy, coding scheme, workflows, role-based access and APIs; development of the web portal, administration screens and field capture on the mobile application; digitisation and migration of existing plant and equipment records into the master database; integration with IoT loggers (Clauses 6.9 and 6.26), inventory (Clause 6.7), vendor and work-order management (Clause 6.4), CRM and ticketing (Clauses 6.12 to 6.15 and 6.27), GIS (Clause 6.11) and dashboards and MIS (Clauses 6.10, 6.16 and 6.28); user training; and data quality during the AMC period. All asset data shall remain the property of JREDA.

6.6.1 Asset Registry

The Agency shall create and maintain a centralised, structured asset master covering every plant asset so that no equipment remains known only to a field vendor or trapped in paper files.

Asset Classes

The registry shall, at a minimum, support the following asset classes:

Plant / site — rooftop plant, mini-grid, pump cluster or equivalent parent record, with GIS coordinates, sanctioned and installed capacity, and net-meter linkage.

Generation equipment — PV modules (individual or batch/string/array), inverters, ACDB/DCDB and transformers.

Metering equipment — net meter, generation meter and energy meter, for integration with Clause 6.17.

Sensing and communications — irradiance and temperature sensors, weather stations, and IoT Data Acquisition Devices / data loggers.

Balance of system — module mounting structures, cables, protection devices, earthing and lightning arrestors.

Support assets — spare kits assigned to a site and any tagged display or ancillary equipment.

Each asset shall carry a unique, system-generated Asset ID that shall never be reused, an optional barcode or QR code for field scanning, and a controlled status selected from Proposed, Installed, Commissioned, Under Maintenance, Isolated, Replaced, Retired and Missing.

Minimum Data Elements per Asset

Each asset record shall store, at a minimum:

Identity — Asset ID, name or tag, serial number, make, model, rating (kW / kWp / kVA / A / V) and quantity where a batch is recorded.

Ownership and contract — scheme name, work order, empanelled installer, CMC/AMC vendor, purchase date and commissioning date.

Location — district, block, panchayat, site name, geo-coordinates consistent with the GIS module, and plant code.

Hierarchy parent — Plant → Block / Array / Inverter cluster → Device.

Technical interface — communication address where IoT or Modbus applies (slave ID, protocol) and nameplate photograph.

Warranty — start date, end date, type (manufacturer or installer) and claim contact.

Documents — datasheet, factory/site acceptance records, commissioning report and photographs.

Audit fields — created and updated by, with timestamps, subject to role-based access and the audit trail required under Clause 6.20.

PV modules may be registered individually or as a validated batch of the same make, model and wattage with a serial list or range, so that large sites can be loaded without forcing one-by-one entry where only batch data exists. Serial-level registration shall remain available and shall be mandatory wherever serial numbers are known.

Asset Hierarchy (Plant → Block → Device)

The system shall enforce a hierarchical tree and shall not permit a flat, unparented device list. The indicative hierarchy shall be:

State (Jharkhand) → District → Block or Urban Local Body → Site / Plant → optional Block, Array or Roof segment → String and PV modules; Inverter(s); AC/DC panels and meters; IoT data logger and sensors.

The following rules shall apply:

No orphan devices — every inverter, module, meter or sensor shall hang under a plant.

Roll-up — plant capacity shall equal the sum of child generation assets; plant communicating status shall be derived from the child logger and related devices.

Move and split — if a plant is re-tagged or an inverter is shifted, history shall be retained. The Agency shall not hard-delete records; the parent shall be changed and an event logged.

Same interface on web and mobile — a field technician shall be able to scan or add a device on site through the mobile application specified in Clause 6.14.

Registry Functions

The software shall provide creation, edit and archival (soft delete only); bulk upload through Excel or CSV with validation for duplicate serials, missing plant and invalid district; search and filter by district, vendor, make and model, warranty-expiry window, absence of an IoT device, and non-communicating status; export for MIS; role-based edit under which field staff may propose records and JREDA officers approve them; linkage to the Vendor Database (Clause 6.4.1) so that OEM, installer and O&M vendor are distinct parties; and linkage to the Master Database of Solar Installations (Clause 6.8) so that the plant header exists once and assets are its children.

Deliverables under this sub-clause shall include the asset data model and code lists, bulk-upload templates, administration and field-capture screens, migration of existing JREDA plant lists into the hierarchy, and a sample QR or label format if labels are applied to loggers and inverters.

6.6.2 Asset Lifecycle Tracking

The system shall follow each asset from first installation to retirement or scrap so that JREDA can determine when the asset was installed, who maintains it, whether warranty is live, what was repaired, and what should be replaced next.

Lifecycle Events

Every change shall be recorded as an immutable event against the Asset ID. The asset header (status, current serial, current warranty end-date) shall always reflect the latest event; a history tab shall display the full chain. Minimum event types shall be:

Installed / commissioned — date, vendor, work order, photographs and commissioning report.

Warranty activated — start, end, terms and claim process, from commissioning or OEM certificate.

Preventive maintenance — date, checklist, readings and technician, sourced from the Maintenance Management System (Clauses 6.13 and 6.27).

Corrective maintenance — fault code, downtime and spare used, sourced from the ticket (Clause 6.15) and inventory (Clause 6.7.2).

Firmware or configuration change — version from and to, including IoT over-the-air updates under Clause 6.26.8.

Performance alert — linked alarm identifier from IoT or dashboard.

Warranty claim — claim number, status and outcome.

Replacement or swap — old asset set to Retired; new serial attached to the same hierarchy node.

Relocation — new site and reason.

Retirement or write-off — reason and disposal note.

Installation, Warranty, Service History and Replacement

Installation. The commissioning date shall be a controlled field used for AMC and CMC clocks and for IoT Phase-I and subsequent-phase reporting. The record shall store the installer vendor and work order from Clause 6.4.3 and the as-built comparison of inverter capacity against sanctioned kWp and net-meter status (feeding Clause 6.24.2).

Warranty. The system shall allow multiple warranties on one asset (for example module performance warranty, inverter product warranty, and the twelve-month hardware warranty on supplied loggers under Clause 5.16). Dashboards and alerts shall flag warranties expiring in ninety (90) and thirty (30) days. Ticket closure shall distinguish chargeable replacement from replacement under warranty. After hardware warranty expiry, replacements shall be chargeable only with the prior written approval of JREDA, consistent with Clause 5.16.

Service history. The asset record shall automatically pull jobs from Maintenance Management, Ticketing and the mobile application, including photograph, GPS and timestamp. The asset and plant views shall display last preventive-maintenance date and next due date. Consumables and spares used on the asset shall update inventory under Clause 6.7.2 and the cost roll-up.

Replacement. Parent-child continuity shall be forced: a new inverter or logger shall inherit plant, GIS, open tickets and IoT mapping. The old serial shall remain searchable. Replacement reason shall be coded (burnt, low yield, theft, upgrade or equivalent).

Decision Support on Performance and Replacement

The module shall not stop at data entry. It shall present officer decision views, including assets past warranty with a configurable number of failures in twelve months as replace candidates; make-or-model failure rate above the fleet average as a vendor-performance flag for Clause 6.4.4; inverter age versus generation gap from Clause 6.28.4 as a capital-versus-repair recommendation; and logger non-communication days versus site connectivity to distinguish device replacement from SIM or network failure under Clause 6.26. These views may be rendered inside Clauses 6.16 and 6.28 but shall be queryable from the asset record.

Deliverables under this sub-clause shall include the lifecycle state machine and event types, the warranty register and expiry alerts through Clause 6.18, the integration map Ticket ID–Asset ID–Spare issue note, the replacement workflow with approval, and reports for warranty expiry, mean time between failures by make and model, and the replacement register for a selected period.

6.6.3 Performance Tracking

The Agency shall use IoT, existing RMS and meter data, together with tickets, to judge each device and not only the plant total.

Performance Trends of Individual Assets

For assets that produce or condition power (inverters, meters, strings where data exist, and loggers) the system shall store and display energy (kWh) and power (kW) from the IoT logger or inverter Modbus as specified in Clause 6.26.3; availability and uptime from device status and communications heartbeat, distinguishing plant-down from logger-down; electrical parameters (voltage, current, power factor and faults); specific yield (kWh/kWp) and performance ratio where irradiance is available, using weather inputs under Clause 6.25.1; and expected versus actual generation using the forecast in Clause 6.25.1 for gap analysis under Clause 6.28.4.

The user interface shall provide, on the asset page, charts for seven-day, thirty-day and twelve-month windows using the visualisation stack in Clause 6.34; comparison of two assets of the same rating; plant roll-up with drill-down to the underperforming inverter; and export of the series in PDF and Excel. Where a site has no IoT device yet, or is non-communicating, the asset shall still exist. The performance tab shall display that no live data is available, show the last

manual reading if any, and allow manual Daily Generation Report entry until the logger is commissioned. Silent absence of data shall not be scored as healthy operation.

Recurring Failures and Underperforming Components

The Agency shall implement configurable rules and worklists, not charts alone.

Recurring failures. The system shall detect the same Asset ID generating a configurable number of tickets or the same fault code within a configurable number of days; the same make or model failing above the fleet rate across plants; and clustered failures in a vendor's installed batch. Where a rule fires, the system shall create or suggest a ticket under Clause 6.27.5 with the applicable SLA.

Underperformance. JREDA-editable thresholds shall include, by way of illustration, daily yield below a stated percentage of expected generation for a stated number of consecutive days; inverter availability below a stated percentage in a month; a string or inverter contribution far below sibling devices on the same plant; and performance ratio or specific yield below the district peer group.

Outputs shall include a worklist of underperforming assets for the week with district filter; a tag on the vendor dashboard under Clause 6.4.6; an input to corrective-action recommendations under Clause 6.28.5; and a GIS indication so that clusters of bad devices are visible on the map under Clauses 6.11 and 6.25.2.

Deliverables under this sub-clause shall include the KPI dictionary (definitions of availability, performance ratio, specific yield and expected generation), the threshold configuration screen for JREDA, the asset-level analytics user interface and scheduled exception report, UAT evidence that a simulated inverter fault or low generation marks the asset and creates a ticket or recommendation, and a written rule for treatment of non-communicating sites.

Integration and Acceptance for Clause 6.6

The Asset Management System shall integrate with Vendor and Work Order (Clause 6.4), IoT Data Acquisition Devices (Clauses 6.9 and 6.26), Inventory (Clause 6.7), CRM, tickets and mobile (Clauses 6.12 to 6.15 and 6.27), the plant master (Clause 6.8), GIS (Clause 6.11), dashboards, MIS and LED display (Clauses 6.10, 6.16, 6.19 and 6.28), net-meter and billing (Clause 6.17), alerts (Clause 6.18) and security (Clause 6.20). Replacement of an IoT logger shall update the Asset Registry, lifecycle log and IoT mapping in one workflow so that history is not lost.

At User Acceptance Testing and Go-Live the Agency shall demonstrate, at a minimum: upload of Phase-I sites with plant, inverter and logger records and module batches; hierarchy drill-down from district dashboard to device; warranty-expiry alert for a test asset; appearance of a ticket and spare consumption on that asset's history; simulated low generation marking an inverter as underperforming in MIS; replacement of a logger with continuity of the plant and archival of the old serial; and role control under which a field user cannot delete a plant and an auditor can only view.

6.7 Inventory and Spare Management

This module shall be JREDA's stores and spare-parts ledger for solar operation and maintenance across the State. It shall answer, at any time, what spare is held where, who drew it, which plant, asset and ticket consumed it, what it cost, and what must be reordered before sites are constrained.

It shall not be implemented as standalone stores software. It shall share identifiers with Asset Management (Clause 6.6), Vendor and Work Order (Clause 6.4), Maintenance, Ticketing and Mobile (Clauses 6.13 to 6.15 and 6.27) and MIS (Clauses 6.16 and 6.28). The design shall support a central JREDA store and district or field holdings, Phase-I deployment of 500 IoT sites growing to more than 3,300 sites, and mixed items including inverter boards, modules, fuses, MCBs, surge protection devices, cables, logger units, GSM SIMs, mounting hardware and consumables.

The Agency shall design the item master, units of measure, locations, batch and serial rules, valuation method and role-based access; build the web stores desk, officer approval and field issue or return on the mobile application; load opening stock and maintain live inward and outward postings; tie every consumption to a ticket or preventive-maintenance job, asset and vendor; generate minimum, reorder and maximum-level alerts; and prove the cycle at UAT from goods receipt through issue, asset history, cost and reorder alert. JREDA shall own stock and cost data. The Agency shall not write off stock except through a JREDA approval workflow.

Master Data Required before Transactions

Item master. Each SKU shall carry item code, description, category (Module, Inverter spare, Balance-of-system electrical, IoT logger and accessories, SIM, Consumable, Tool), make-model compatibility for issue against an asset, unit of measure, an indicator whether the item is serialised (inverter, logger, module) or quantity-based (fuse, grease), warranty period on the spare itself, a single documented valuation method (standard, last purchase or weighted average) applied consistently for Clause 6.7.2, GST flags for vendor bills, and status (Active, Obsolete, or superseded by another item code).

Locations. The system shall support a central store, district or cluster stores, optional site lockers or vehicle van stock, and system bins for In Transit and With Vendor for Repair.

Parties. Suppliers shall be drawn from the vendor master in Clause 6.4. Issuing officers and receiving technicians shall be drawn from the user master in Clause 6.5.

6.7.1 Inventory Tracking

The Agency shall maintain a live quantity-and-location picture of every spare and consumable held by JREDA or by the AMC agency for JREDA plants.

Real-time Stock Levels

Stock displayed on screen and exposed by API shall equal opening stock plus inward minus outward minus adjustments, analysed by item, store or bin, batch or serial where applicable, and status selected from Available, Reserved against an open ticket, Quarantine, Under Repair, Issued but not yet consumed, and Scrapped.

Real-time shall mean updated when the transaction is saved (goods receipt, issue, return or transfer), and not a nightly spreadsheet load. Issues captured offline on the mobile application under Clause 6.14 shall synchronise and then lock quantity so that two technicians cannot draw the last piece twice.

JREDA views shall include stock on hand by item and by store; stock by district; a serial register answering where a given logger or inverter serial is located; valuation as quantity multiplied by the approved rate; and ageing of unused items.

Inward and Outward Movement

Every movement shall be a numbered document with user, timestamp and from/to location. Minimum document types shall be:

Goods Receipt Note / Receipt — purchase, AMC supply, Phase-I or subsequent-phase logger delivery, or warranty replacement inward; capturing purchase or work order, vendor, invoice, quantity, rate, tax, serials and packing photographs where required.

Return to store — unused material coming back from site, with original issue number and condition (good or damaged).

Repair return — vendor-repaired card or logger, with repair work order, cost and new warranty date.

Issue / indent — material given to a technician or site for a job, with ticket or preventive-maintenance identifier, plant, asset where known, quantity and serial.

Transfer — central store to district store to van, with acknowledgement.

Return to vendor / warranty despatch — defective item sent to the OEM, with serial, RMA number and linked ticket.

Adjustment — physical-count variance, theft or damage, with reason code, JREDA approver and remark.

Opening stock — Go-Live migration against a count-sheet reference.

The following rules shall apply: quantity shall not be edited silently and shall change only through documents; a serialised inverter or logger shall not exist as Available in two stores; quantity may be reserved when a ticket is approved for a spare; field receipt on the mobile application (quantity, photograph and GPS) shall close the outward leg; GRN, issue slip and transfer note shall be printable as PDF; and every document shall carry the audit trail required under Clause 6.20.

The software shall provide item search by code, make and compatible inverter model; a store-wise ledger showing running balance after each document; a physical verification or cycle-count screen that posts variances only through Adjustment; barcode or QR scan of item or asset using the same labels as Clause 6.6; a filter comparing loggers in stock with loggers deployed as assets for Phase planning; and a scheduled monthly stock statement.

Deliverables under this sub-clause shall include item and location masters and upload templates, the full document cycle, the store ledger and serial tracker, the opening-stock migration method, and UAT evidence that receipt, transfer and issue of a mixed serialised and quantity lot leave a reconciling stock position.

6.7.2 Spare Consumption Mapping

A spare that has left the store shall be visible against the maintenance job and the asset that consumed it, together with its cost.

Link to Maintenance Activities and Tickets

An issue line or consumption confirmation shall carry Ticket ID or preventive-maintenance schedule ID (Clauses 6.13, 6.15 and 6.27), Plant ID (Clause 6.8), Asset ID (Clause 6.6), vendor or technician, and failure or activity code (preventive maintenance, breakdown, IoT replacement, theft or equivalent).

The required flow shall be: a ticket or preventive-maintenance job is created on a plant or asset; the technician requests a spare from the ticket or mobile job card; the store issues the item and stock falls while the line remains in Issued status; on job close the technician confirms consumption including quantity used, serial fitted and photographs of old and new items; unused quantity is returned to store; Asset Lifecycle under Clause 6.6.2 receives a Replacement or Service event automatically; and Vendor Activity under Clause 6.4.2 shows material used on that vendor's job.

Where material is issued without a ticket (emergency van stock), the system shall require a ticket to be opened or linked within a configurable time so that mapping is not skipped.

Traceability. IoT data loggers, inverters, modules and meters shall be serial-out of store and serial-on to the asset, with the old serial retired. Cards, power supplies and boards shall carry serial or batch plus asset. Fuses, terminals, grease and cable shall carry quantity plus ticket plus plant, and batch where warranty or quality so requires. JREDA shall be able to answer which store issued a replacement against which ticket, how many units of a given brand were used in a named district in a named quarter, and on which plant a logger serial issued from headquarters now sits.

Cost Tracking

Every consumed line shall store quantity, the rate drawn from the approved valuation method, line value and GST where applicable, and a cost centre (scheme, plant, district, or vendor; recoverable or JREDA-borne). Roll-ups shall include cost per ticket and per plant for Clauses 6.16 and 6.28; cost per asset over life for repair-versus-replace decisions under Clause 6.6.2; cost by vendor for performance and claims under Clause 6.4.4; a warranty versus chargeable flag linked to the warranty claim under Clause 6.6.2; and material cost versus service cost for quarterly AMC bills under Clause 5.6. Rate shall not be optional. A zero-rate issue shall require a reason such as free-of-cost warranty, sample or opening stock.

Deliverables under this sub-clause shall include the mandatory ticket and asset link on issue with a configurable approved exception, consumption versus return at ticket close, automatic posting to asset history and vendor activity, cost reports (plant-wise consumption, ticket-wise material, warranty free-of-cost register), and UAT evidence that closing a breakdown ticket with one serialised logger and quantity consumables updates stock, asset, ticket cost and MIS consistently.

6.7.3 Reorder Management

The system shall propose replenishment before stock-out so that sites do not wait for a fuse, board or logger because a bin was not watched.

Configurable Minimum Stock Levels

JREDA, and not a hard-coded bidder default, shall set, per item and preferably per store, minimum or safety stock, reorder level, reorder quantity, maximum stock, optional lead time in days, and optional coverage period (for example ninety days of average consumption). For IoT loggers, headquarters minimum stock shall consider devices allotted but not yet installed plus a buffer for failures under the hardware warranty in Clause 5.16.

The configuration interface shall allow bulk upload of minimum, reorder and maximum levels, copy of a headquarters template to districts, and marking of an item as non-stock or indent-only so that no minimum alert is raised.

Automated Alerts for Replenishment

When available quantity plus inbound purchase orders minus reserved quantity is less than or equal to the reorder level, the system shall raise an in-application alert on stores and officer dashboards; send e-mail and SMS under Clause 6.18 to the roles named by JREDA; optionally draft an indent or purchase requisition to the preferred vendor under Clause 6.4, leaving approval with JREDA; keep the alert open until stock is raised or the alert is closed with reason, without repeating every minute; and escalate if quantity remains below minimum for a configurable number of days.

The module shall also present fast-moving versus dead stock (no issue in a configurable period such as one hundred and eighty days), expiry or shelf-life where consumables are dated, a list of open tickets waiting for a spare, and an advisory forecast based on recent consumption times remaining AMC period. The forecast shall be decision support and shall not constitute a binding materials plan.

Deliverables under this sub-clause shall include per-item per-store level maintenance, the alert engine and notification templates, the reorder shortlist and optional purchase-requisition draft, a dashboard widget of items below minimum and of zero-stock items with open tickets, and UAT evidence that an issue taking stock through the minimum generates an alert and a reorder line.

Integration and Acceptance for Clause 6.7

Inventory shall integrate with Vendor and Work Order (Clause 6.4), Users and RBAC (Clause 6.5), Assets (Clause 6.6), the plant master (Clause 6.8), IoT supply and installation (Clauses 6.9 and 6.26), tickets, preventive maintenance and mobile (Clauses 6.13 to 6.15 and 6.27), MIS (Clauses 6.16 and 6.28), alerts (Clause 6.18), security (Clause 6.20), AMC billing (Clause 5.6) and warranty (Clause 5.16). A logger in its packing shall be inventory. After installation and commissioning under Clause 6.26.10 it shall become an asset under Clause 6.6 and shall leave Available stock through an Issue linked to the installation ticket or work order. Failure replacement shall reverse that path (defective inward under RMA, good unit outward).

At User Acceptance Testing and Go-Live the Agency shall demonstrate opening-stock load reconciling to a count sheet; goods receipt of mixed serialised and quantity items updating stock and value; issue against a live ticket reducing stock and appearing on the ticket and the asset; partial return restoring stock and reducing ticket material cost; transfer from headquarters to district requiring receipt without double-counting; adjustment requiring an approver and writing an audit log; a minimum-level breach creating an alert and a reorder line; a district-wise monthly consumption report and a list of open tickets blocked on spare; role separation under which a technician cannot post a GRN, stores cannot close tickets and an auditor is read-only; and blocking of negative stock, or allowance only under a documented emergency flag.

The Agency shall not treat stock as limited to Ranchi headquarters, shall not leave AMC material on a vendor-owned spreadsheet as the system of record, shall not omit serial traceability for loggers and inverters, shall not confine reorder alerts to the stores screen, and shall not leave cost blank.

6.8 Master Database of Solar Installations

This module shall maintain a centralized and structured repository of all solar installations across Jharkhand. Key features shall include:

- Creation and maintenance of a master database of solar installations.
- Storage of key parameters such as capacity, generation data, equipment details and net-metering information.
- Data update and modification functionality.
- Data backup and archival capabilities.
- Integration with monitoring dashboards and reporting modules.

6.9 IoT Device Deployment and Data Acquisition Module

The Agency shall design, supply, install, configure and commission IoT-enabled Data Acquisition Devices (DADs) at solar plant sites to enable real-time monitoring and automated data transmission to the centralised monitoring platform. Key features shall include:

- Supply, installation and integration of IoT-based Data Acquisition Devices (DADs) for automated data capture.

- Collection of key parameters such as energy generation, inverter status, electrical parameters and fault alerts, with secure transmission to the centralised monitoring platform.
- Support for local data buffering, remote monitoring, configuration and firmware upgrades to ensure reliable device performance.
- Integration with monitoring dashboards and analytics systems, including testing, commissioning, maintenance and technical support of IoT devices.

6.10 Solar PV Monitoring Dashboard

This module shall provide a centralised digital dashboard for real-time monitoring of solar energy generation across all installed solar sites. Key features shall include:

- Real-time visualisation of solar generation data.
- Plant-wise and district-wise performance monitoring.
- Graphical representation of generation trends and system performance.
- Dashboard widgets displaying key operational indicators.
- Facility for monitoring alerts and system anomalies.

6.11 Solar Plant GIS Mapping Module

This module shall provide geographic visualisation of solar installations across the State. Key features shall include:

- GIS-based mapping of solar installations.
- Location-based visualisation of plants at Panchayat, Block and District levels.
- Integration with satellite maps and geographic data layers.
- Identification of plant clusters and regional performance trends.
- Support for location-based analytics.

6.12 Customer Relationship Management (CRM) System

This module shall enable efficient management of interactions and service requests related to solar installations. Key features shall include:

- Registration and tracking of customer complaints and service requests.
- Centralised management of maintenance records.
- Tracking of issue-resolution timelines.
- Integration with the maintenance management system.
- Generation of CRM-related reports and analytics.

6.13 Maintenance Management System

This module shall facilitate the planning, scheduling and monitoring of maintenance activities for solar installations. Key features shall include:

- Scheduling of preventive maintenance activities.
- Tracking of corrective maintenance tasks.
- Assignment of maintenance jobs to field technicians.
- Maintenance history tracking for each solar installation.
- Monitoring of maintenance performance indicators.

6.14 Mobile Application for Field Maintenance

This module shall provide a mobile-based interface to support field engineers and maintenance personnel. Key features shall include:

- Mobile access to maintenance tasks and service requests.
- Field data entry and inspection-report submission.
- Upload of photographs and site documentation.
- GPS-based location tracking of maintenance activities.
- Offline data capture with synchronisation capabilities.

6.15 Complaint and Ticket Management System

This module shall provide a structured system for handling complaints and service tickets related to solar installations. Key features shall include:

- Online complaint registration.
- Automated ticket generation and assignment.
- Tracking of ticket status and resolution progress.
- Escalation mechanism for unresolved issues.
- Historical records of complaints and resolutions.

6.16 Reporting and MIS Analytics Module

This module shall provide comprehensive reporting capabilities to support decision-making and performance monitoring. Key features shall include:

- Generation of monthly, quarterly and annual reports.
- Panchayat, Block, Sub-Division and District-level analytics.
- Customisable MIS reports.
- Export of reports in multiple formats.
- Data visualisation through charts and graphs.
- Daily / Monthly / Weekly Generation Reports.
- Corrective Maintenance / Preventive Maintenance Breakdown Reports.
- Daily Generation Report (DGR) Summary Reports.

6.17 Billing and Net-Meter Data Analysis Module

This module shall analyse solar generation data in comparison with electricity consumption and billing patterns. Key features shall include:

- Integration with Net-Meter data.
- Analysis of electricity consumption against solar generation.
- Identification of discrepancies between generation and billing.
- Monitoring of energy savings and grid-dependency reduction.
- Generation of analytical reports.

6.18 Notification and Alert Management System

This module shall provide automated notifications and alerts for operational and maintenance events. Key features shall include:

- E-mail and SMS alert system.
- Notifications for maintenance schedules and system faults.
- Alerts for abnormal generation patterns.
- Escalation alerts for unresolved service requests.
- Customisable notification settings.

6.19 LED Display Dashboard Visualisation Module

This module shall enable real-time visualisation of solar performance data on LED display screens at the JREDA office (the LED screen shall be provided as per a separate arrangement to be intimated by JREDA). Key features shall include:

- Integration with the centralised monitoring dashboard.
- Display of real-time solar generation statistics.
- District-wise performance visualisation.
- Energy savings and environmental-impact indicators.
- Interactive graphical dashboards.

6.20 Security and Access Control Module

This module shall ensure the security, integrity and confidentiality of system data and operations. Key features shall include:

- Role-Based Access Control (RBAC) mechanisms.
- Data encryption and secure communication protocols.
- System activity logging and audit trails.
- User authentication and password policies.
- Compliance with prevailing IT security standards.

6.21 Process Management and SOP Documentation Module

This module shall support the documentation and standardisation of operational procedures for solar monitoring and maintenance. Key features shall include:

- Documentation of Standard Operating Procedures (SOPs).
- Workflow management for operational processes.
- Version control for SOP documents.
- Process monitoring and compliance tracking.
- Repository for operational guidelines and documentation.

6.24.1 Creation of Solar Master Database

Development of a centralised master database containing the complete list of solar installations, installed capacity, energy-generation data, net-meter details, billing information, Data Acquisition Device (DAD) details, site infrastructure details and operational status.

6.24.2 Data Validation and Status Assessment

- Identification of solar plants where energy-generation data is unavailable or incomplete.
- Preparation of a detailed status report on Net-Metering implementation across existing and upcoming solar projects.

6.24.3 Process Review and SOP Development

- Study and analysis of the existing procedure for the inter-connection of rooftop SPV systems with the distribution network.
- Identification of process inefficiencies and bottlenecks.
- Development of Standard Operating Procedures (SOPs) to improve data collection, monitoring processes, system integration and operational efficiency.

6.24.4 Periodic Reporting

Submission of monthly, quarterly and annual reports to JREDA, including operational updates and analysis.

6.25 Centralized Solar Monitoring Dashboard and Analytics Platform

This module shall provide a centralised digital platform for monitoring solar power generation across Jharkhand.

6.25.1 Centralized Solar Monitoring Dashboard

Development of a web-based monitoring dashboard to track:

- Overview Dashboard — providing consolidated State-level information and performance tracking, with notifications and alarms.
- Plant-Level Dashboard — providing a consolidated view of generation, availability and KPIs across all plants, enabling quick identification of underperforming sites and system-wide trends.
- Device-Level Monitoring — real-time monitoring of inverters, meters and weather stations, displaying electrical parameters such as voltage, current, power, energy and status.

- Weather Monitoring Integration — integration with weather sensors (Global Horizontal Irradiance, Plane of Array irradiance, temperature, wind speed) to enable correlation between environmental conditions and plant performance.
- Weather Forecast Service - location-specific weather forecasts by integrating with reliable weather data sources. Parameters to be integrated like Solar Irradiance (GHI/DNI/DHI), Ambient and Module Temperature, Wind Speed and Direction, Relative Humidity, Cloud Cover and Rainfall, Weather Alerts and Forecast Reports
- Expected Solar Generation - AI/ML-based expected generation forecast using historical generation data, weather forecasts, and plant operational parameters incl Plant-wise, District-Level, State-Level Forecast, Analysis of Forecast and Actual.

6.25.2 Solar Plant Mapping

- Mapping of all Solar PV systems installed by JREDA on a single centralised platform.
- GIS-based mapping of solar installations with real-time statistics.

6.25.3 Data Migration and Digitization

Digitisation and migration of existing manual records and online registries to the new system.

6.25.4 Business Requirement Documentation

Preparation of a detailed Business Requirement Document (BRD) covering functional requirements, data flows, integration requirements and user interfaces.

6.25.5 Process Mapping

Documentation of existing and proposed workflows for solar monitoring, data reporting and maintenance tracking.

6.25.6 Unified Data Visualisation

Single-platform access to all solar plant data across the State.

6.25.7 Security Framework

Implementation of enterprise-grade security features including Role-Based Access Control, data encryption and secure authentication.

6.26 IoT Device Deployment — Detailed Scope

The IoT solution shall be GSM SIM-based, and the bidder shall be responsible for provisioning, activation, and management of the GSM SIM cards, ensuring reliable connectivity for data transmission from all project sites.

Phase-I:

The bidder shall undertake the deployment of 500 IoT devices across identified project sites. The solution shall enable automated data acquisition, seamless system integration, and real-time performance monitoring, thereby enhancing operational efficiency and enabling data-driven decision-making.

Phases:

The deployment shall commence with an initial phase of 500 IoT Data Logger devices and shall continue progressively in subsequent phases until all eligible JREDA solar-grid sites are covered. JREDA has presently identified more than 3,300 sites for IoT installation. Each subsequent phase shall be allotted based on site availability and readiness, and the selected Agency/Bidder/Consortium shall complete the supply, installation, commissioning and integration of the IoT devices for each allotted phase within 6 months from the date of allotment of that phase, as directed by JREDA. The implementation approach, quality standards, and system functionalities established during Phase-I shall be consistently followed throughout all phases to ensure uniform performance and seamless integration across all installations.

The bidder shall quote the unit rate of IoT devices separately in the Bill of Quantities (BoQ), inclusive of all taxes related to supply, installation, configuration, commissioning, GSM SIM provisioning, and system integration.

6.26.1 Supply and Installation of IoT Devices

The Agency shall supply and install IoT-based Data Acquisition Devices at solar plant locations to enable automated data capture from plant equipment.

IoT Device Technical Specification

Parameter	Specification
Device Type	Industrial 4G IoT Data Logger (Stick Type)
Communication	4G LTE (Fallback: 3G/2G)
SIM Type	Nano SIM
Ethernet	1 × RJ45 (10/100 Mbps)
Serial Port	2 × RS485 (Modbus RTU Master)
Supported Protocol	Modbus RTU, Modbus TCP
Baud Rate	1200–115200 bps
Max Devices	Up to 32 Modbus devices
Data Upload	MQTT / HTTP / HTTPS
Cloud Support	Custom Server / SCADA / MQTT Broker
Supply Voltage	9–36 VDC
Power Consumption	<3 W
Operating Temperature	-20°C to +70°C
Protection	Reverse Polarity & Surge Protection

6.26.2 Integration with Solar Plant Equipment

The IoT devices shall be capable of directly interfacing with solar-plant components, including:

- Solar inverters.
- Net-energy meters.
- Plant monitoring systems.
- Other compatible monitoring equipment.

6.26.3 Operational Data Acquisition

The IoT devices shall capture key operational parameters, including (but not limited to):

- Solar energy generation (kWh).
- Inverter operational status.
- System uptime and downtime.
- Voltage, current and power parameters.
- Equipment fault alerts and alarm signals.

6.26.4 Communication and Data Transmission

The IoT devices shall transmit collected data to the centralised monitoring platform through secure communication networks such as:

- GPRS.
- 4G / LTE.
- Ethernet / Wi-Fi.
- Any other suitable communication medium depending on site feasibility.

6.26.5 Secure Data Transfer

All data transmitted from field devices to the central server shall be encrypted and shall follow secure communication protocols to ensure data integrity and cybersecurity compliance.

6.26.6 Local Data Storage and Buffering

The IoT devices shall support local data buffering and storage to prevent data loss during communication or network outages. Stored data shall automatically synchronise with the central server upon restoration of connectivity.

6.26.7 Remote Device Management

The solution shall include capabilities for remote monitoring and management of IoT devices, including device-health monitoring, remote configuration and connectivity-status tracking.

6.26.8 Firmware Upgrade Capability

The deployed IoT devices shall support remote firmware upgrades and patch management to ensure continuous performance improvements and security updates.

6.26.9 Integration with Centralised Monitoring System

IoT data shall be seamlessly integrated with the following modules of the system:

- Solar PV Monitoring Dashboard.
- Analytics and Reporting modules.
- Maintenance Management System.
- Alert and Notification System.

6.26.10 Testing and Commissioning

The Agency shall be responsible for the testing, commissioning and validation of IoT-device functionality, including verification of data accuracy and communication reliability.

6.26.11 Maintenance and Support

The Agency shall provide ongoing maintenance and technical support for the IoT infrastructure, including troubleshooting, device replacement in case of failure, and periodic health monitoring.

6.27 CRM and Maintenance Management System — Key Functionalities

6.27.1 Maintenance Management System

The system shall manage both scheduled preventive maintenance and unscheduled corrective maintenance.

6.27.2 Mobile Application for Field Operations

Development of a mobile application connected to the CRM system for maintenance request tracking, field-technician updates, site inspection reports and photo uploads.

6.27.3 Complaint Management

Registration and tracking of complaints relating to system failures, inverter issues and low generation.

6.27.4 Maintenance Scheduling

Automated scheduling of preventive maintenance tasks.

6.27.5 Ticketing System

- Incident / Ticket Creation: Automatic ticket generation based on alarms or manual creation by users, ensuring structured tracking from identification to closure.
- Ticket Lifecycle Management: Stages including Open, Assigned, In Progress, Resolved and Closed; complete audit trail maintained for each issue.
- SLA and Escalation Matrix: Configurable Service Level Agreements for response and resolution times, with automated escalation in case of SLA breaches.
- Maintenance Scheduling: Preventive and predictive maintenance planning based on equipment usage and performance, reducing downtime and improving asset life.
- Live Tracking: Location-based live tracking of any tickets.

6.27.6 Standard Operating Procedure for O&M

Development of a Model SOP for Operation and Maintenance of Solar Plants, based on industry best practices.

6.27.7 Notifications and Alerts

SMS and e-mail alerts for fault alerts, maintenance reminders and generation alerts.

6.27.8 MIS Reporting System

Generation of MIS reports and performance dashboards for management.

6.27.9 Security Compliance

Secure system architecture with role-based access, secure communication and data-protection measures.

6.28 Advanced Reporting and Analytics Module

This module shall provide data-driven insights for decision-making and monitoring of solar performance.

6.28.1 Multi-Level Reporting

Reports shall be generated for administrative levels including Panchayat, Block, Sub-Division and District.

6.28.2 Energy Generation Analytics

- Daily solar-generation data from all installations.
- Comparative analysis of solar energy versus grid-electricity usage.

6.28.3 Billing Analysis

- Monitoring of billing patterns of buildings with rooftop solar.
- Comparison of billing data with Net-Meter readings.

6.28.4 Performance Gap Analysis

Identification of causes of low or inconsistent solar generation.

6.28.5 Corrective Action Recommendations

Suggestion of corrective measures based on site-specific parameters, equipment issues and maintenance requirements.

6.29 LED Display Visualisation System

A large electronic LED display system shall be installed at the JREDA office to showcase real-time information. Some of the display features shall include:

- Real-time solar-generation data.
- Plant performance metrics.
- District-wise solar production.
- Energy savings and carbon-reduction indicators.
- System alerts and notifications.
- Interactive analytics dashboards.

6.30 System Architecture Overview

- Field Level: IoT Data Logger installed at each location.
- Communication Layer: 4G / GPRS secured data transmission.
- Cloud Layer: Dedicated secure server with database cluster.
- Application Layer: Centralised Web Dashboard plus device-level / pump-level dashboards.
- Reporting Layer: Automated PDF / Excel reports.
- Analytics Layer: Fault-detection engine and performance analysis.

6.31 Consolidated Scope of Work — Indicative Summary

Software Development	Hardware	Services
State-Level Dashboard Device-Level / Pump-Level Dashboard Admin and User Role Management Fault and Alert Engine Real-Time Data Visualisation Generation / Performance Analytics Downloadable Reports (PDF / Excel) White-Label Branding	Industrial IoT Data Logger Remote Configuration and Integration	Cloud Hosting Cybersecurity and Backup Annual Maintenance and Technical Support

6.32 Annual Maintenance Contract (AMC) — Five (05) Years

- System maintenance and support.
- Bug fixing and updates.
- Performance monitoring.
- Technical support.

6.33 Software Architecture Approach

The system shall be developed using a modular and scalable architecture, ensuring high performance and security, API-based integration with IoT and RMS systems, cloud-ready deployment, scalable database structure and future-upgrade compatibility.

6.34 Technology Stack and Technical Requirements

The Agency shall use a modern, scalable, secure and well-supported technology stack across all modules of the proposed solution. The minimum technical requirements set out below shall be adhered to. The Agency may propose superior alternatives, subject to written approval of JREDA.

Layer / Component	Minimum Specification
Frontend (Web Portal & Dashboard)	React (LTS) / Angular with TypeScript, Tailwind CSS / Bootstrap, mobile-first responsive design, Progressive Web App (PWA) ready.
Backend (Application Server)	Node.js LTS (Express / NestJS) OR Python OR Laravel (PHP) — open-source frameworks with no proprietary licensing cost; modular MVC or API-driven architecture and OpenAPI contracts; OR .NET / .NET Core (MVC or API-first) as a permitted alternative subject to written approval of JREDA.
Mobile Application (Field Maintenance & CRM)	React Native — single codebase for Android and iOS, with offline data capture, photo upload, GPS tagging and synchronisation on connectivity restoration.
Database (Operational)	PostgreSQL (primary), with MariaDB as a permitted alternative — including normalisation, indexing, query optimisation, stored procedures, transaction safety and audit tables.
Time-Series Data Store (IoT)	TimescaleDB (PostgreSQL extension) OR InfluxDB for high-volume IoT sensor data, energy generation readings and historical analytics.
IoT Communication Protocols	MQTT (primary, with TLS), HTTPS REST and Modbus TCP/RTU for inverter and net-meter integration; OPC UA / FTP supported where required by inverter manufacturer specifications.
IoT Device Firmware	Embedded C / Embedded Linux on the IoT Data Logger, with OTA (Over-The-Air) firmware upgrade capability, local buffering and secure GSM SIM-based 4G LTE / Wi-Fi / Ethernet connectivity.
Application Server	Nginx (reverse proxy with SSL termination) with PM2 (Node.js) / Gunicorn (Python) / PHP-FPM as application runtimes; Apache as a permitted alternative.
Operating System	Ubuntu LTS for all server workloads.
Caching & Search	Redis for caching and message queueing; OpenSearch or Meili search for full-text search, log analytics and asset/vendor lookups.
Message Broker / Queue (IoT Ingestion)	MQTT broker (Mosquitto / EMQX) for device-to-cloud messaging; Redis Streams or RabbitMQ for inter-service queueing and worker pipelines.
GIS & Mapping	OpenStreetMap / Leaflet.js / MapLibre GL (open-source, no licensing cost), with PostGIS extension on PostgreSQL for geo-spatial queries; Google Maps API may be used where licensed and approved.
Visualisation & Charting	Apache ECharts / Chart.js / Recharts for dashboards and analytics; Grafana for IoT and infrastructure monitoring.
Reporting Engine	JasperReports / Apache POI / pdfmake / ExcelJS for PDF and Excel report generation; server-side rendering for scheduled and on-demand exports.
Security	TLS 1.3 (in-transit), AES-256 (at-rest), WAF, OWASP Top 10

Layer / Component	Minimum Specification
	compliance, MFA, RBAC, secure secrets vault (HashiCorp Vault or equivalent), and CERT-In or STQC empaneled VAPT before Go-Live and annually thereafter.
Notification & Alerts	DLT-compliant SMS gateway (JAPIT / CDAC / Government-approved); SMTP with DKIM/SPF/DMARC; push notifications via Firebase Cloud Messaging (FCM) for the mobile application.
LED Display Integration	HTML5/Web-based digital signage rendering (auto-refresh dashboard) compatible with standard LED video-wall controllers; hardware to be provided by JREDA under a separate arrangement.
CDN & Optimisation	Lazy loading, asynchronous API rendering, GZIP/Brotli compression and CDN-ready static assets, including Cloud flare or Bunny CDN (or any equivalent Government-approved CDN).
Hosting	NIC / Jharkhand State Data Centre (JH-SDC) / JAPIT / MeitY-empanelled cloud or equivalent dedicated cloud infrastructure as directed by JREDA, with appropriate availability and backup arrangements.
Version Control & DevOps	Git (self-hosted Gitea / GitLab CE, or Government-approved equivalent) with a defined branching strategy and CI/CD pipelines (GitHub Actions / GitLab CI or equivalent); containerisation using Docker where appropriate.

Note: Open-source and royalty-free components shall be preferred wherever they meet the functional and security requirements of the project. Any proprietary tool, licence or third-party API (including but not limited to Google Maps, premium SMS providers or paid analytics services) shall be procured by the Agency and the cost shall be deemed to be included in the financial bid; no additional claim on this account shall be entertained.

6.35 Server Specification

Component	Specification
Web and API Server	OS: Ubuntu CPU: 8 vCPU, 32 GB RAM Disk: 250 GB SSD (primary disk)
Database Server	OS: Ubuntu CPU: 16 vCPU, 64 GB RAM Disk: 1 TB SSD (primary disk) — Scalable Database: PostgreSQL
FTP and Processing Server	OS: Ubuntu CPU: 16 vCPU, 64 GB RAM Disk: 2 TB EBS — Scalable
Storage	EBS — 500 GB
Bandwidth	500 GB per month
Static IP	2 (Two) Numbers
Backup	2 TB — Scalable

6.36 Centralised Dashboard Preview and Reporting

The Centralised Dashboard shall include:

- Central dashboard for all solar plants.
- District-wise / project-wise monitoring.
- Daily / Monthly / Yearly reports.
- Performance comparison analytics.
- Mobile Application (basic version) for monitoring and O&M, with monitoring-dashboard access, alerts and notifications and a vendor-interaction interface.

6.37 Hosting and Deployment

- Cloud / server-based deployment.
- Database management.

- Data security implementation.
- Backup and disaster-recovery system.

Annexure-1: Format for Covering Letter

NIB No.: 18/JREDA/GCRT/IT/26-27

(To be submitted on the official letterhead of the Company)

To,

The Director,

Jharkhand Renewable Energy Development Agency (JREDA),

3rd Floor, S.L.D.C. Building, Kusai Colony,

Doranda, Ranchi - 834002 (Jharkhand).

Subject: Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

Sir,

We hereby submit our offer in full compliance with the terms and conditions stipulated in the captioned NIB, Reference No. ___/JREDA/SPV/IT/25-26.

We have furnished the requisite Tender Fee in the form of Demand Draft and the Earnest Money Deposit (EMD) in the form of Demand Draft / Bank Guarantee, valid for twelve (12) months from the last date of bid receipt.

The bid has been uploaded on <https://jharkhandtenders.gov.in> in accordance with the requirements of the e-Procurement Portal, with the Technical Bid and Financial Bid submitted as separate covers.

Yours faithfully,

(Signature of Authorised Signatory)

Name: _____

Designation: _____

Company Seal:

Annexure-2: Information about the Bidding Firm
NIB No.: 18/JREDA/GCRT/IT/26-27

(To be submitted on the official letterhead of the Company)

Sl. No.	Particulars	Details
1	Name of the Agency	
2	Address of the Agency, with Telephone, Fax and E-mail	
3	Address of the Registered Office	
4	Address of the Works	
5	GPS Co-ordinates of Registered Office	
6	GPS Co-ordinates of Factory / Works Campus	
7	Name and Designation of Authorised Signatory for Correspondence (Power of Attorney to be enclosed as per Annexure-6)	
8	Nature of Firm (Proprietorship / Partnership / Pvt. Ltd. / Public Ltd. Co. / Public Sector)	
9	Permanent Account Number (PAN) — Proof to be enclosed	
10	Firm's Registration Number — Proof to be enclosed	
11	GST Registration Number — Proof to be enclosed	
12	Details of in-house testing facility — Proof to be enclosed	
13	Office / Dealer / Service Network in Jharkhand — Details to be furnished	
14	Particulars of Earnest Money Deposit and Tender Fee	
15	Place where Materials shall be Manufactured	
16	Place where Materials shall be Available for Inspection	
17	Other details and remarks, if any	

(Separate sheets may be used to provide detailed information, duly signed by the Authorised Signatory.)

Yours faithfully,

(Signature of Authorized Signatory with Company Seal)

Name & Designation:

Annexure-3: Declaration by the Agency
NIB No.: 18/JREDA/GCRT/IT/26-27

(To be submitted on the official letterhead of the Company)

I/We _____ (hereinafter referred to as the "Agency"), being desirous of tendering for the rate contract for the work referred to in the captioned tender, having fully understood the nature of the work and having carefully noted all the terms, conditions and specifications set out in the tender document, do hereby solemnly declare as follows:

1. The Agency is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document.
2. The Agency is capable of executing and completing the work as required in the tender.
3. The Agency accepts all risks and responsibilities, directly or indirectly, connected with the performance of the tender.
4. The Agency has had no collusion with any employee of JREDA or with any other person or firm in the preparation of the bid.
5. The Agency has not been influenced by any statement or promise of JREDA or any of its employees, but has been guided solely by the tender document.
6. The Agency is financially solvent and sound to execute the work.
7. The Agency is sufficiently experienced and competent to perform the contract to the satisfaction of JREDA.
8. The information and statements submitted with the tender are true and correct.
9. The Agency is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Governments that may affect the work, its performance or the personnel employed therein.
10. The Agency has not been debarred or blacklisted by any State Nodal Agency, Government Department or PSU.
11. This offer shall remain valid for six (06) months from the date of opening of the tender.
12. The Agency gives an assurance to execute the tendered work as per specifications, terms and conditions.
13. The Agency confirms its capability to supply and install the required number of systems per month.
14. The Agency accepts that the Earnest Money shall be absolutely forfeited by JREDA in the event the Agency fails to undertake the work or sign the contract within the stipulated period.

(Signature of Authorised Signatory)

Name: _____

Designation: _____

Company Seal:

Annexure-4: Format for Financial Requirement — Annual Turnover
NIB No.: 18/JREDA/GCRT/IT/26-27

[On the letterhead of the Bidding Company]

To,
 The Director,
 Jharkhand Renewable Energy Development Agency (JREDA),
 3rd Floor, S.L.D.C. Building, Kusai Colony,
 Doranda, Ranchi - 834002 (Jharkhand).

Subject: Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

Dear Sir,

We certify that the Bidding Company has had an average Annual Turnover of Rs. _____ during the last three (03) financial years, as per the Chartered Accountant's certificate furnished prior to submission of the bid. The financial-year-wise turnover is set out below:

Sr. No.	Financial Year	Turnover (in Rupees)
1	FY 2022-23	
2	FY 2023-24	
3	FY 2024-25	
	Average Turnover	

UDIN No.: _____

Authorised Signatory (Power of Attorney holder)	Statutory Auditor (Stamp & Signature)

Date: _____

Annexure-5: Format for Financial Requirement — Net Worth Certificate**NIB No.: 18/JREDA/GCRT/IT/26-27***[On the letterhead of the Bidding Company]*

To,
 The Director,
 Jharkhand Renewable Energy Development Agency (JREDA),
 3rd Floor, S.L.D.C. Building, Kusai Colony,
 Doranda, Ranchi - 834002 (Jharkhand).

Subject: Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

Dear Sir,

This is to certify that the Net Worth of M/s _____ (insert the name of the Bidding Company), as on _____, is Rs. _____. The details are appended below:

Particulars	Amount (in Rs.)
Equity Share Capital	
Add: Reserves	
Subtract: Revaluation Reserve	
Subtract: Intangible Assets	
Subtract: Miscellaneous Expenditure to the extent not written off and carried forward losses	
Net Worth	

UDIN No.: _____

Authorised Signatory (Power of Attorney holder)	Statutory Auditor (Stamp & Signature)

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Annexure-6: Format of Power of Attorney for Signing of Bid

NIB No.: 18/JREDA/GCRT/IT/26-27

A. Power of Attorney (Individual Firm)

(To be executed on a Non-Judicial Stamp Paper of appropriate value as per the Stamp Act applicable at the place of execution.)

Know all men by these presents, we, _____ (name and address of the registered office), do hereby constitute, appoint and authorise 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 as are necessary in connection with or incidental to our bid for any tender notified by Jharkhand Renewable Energy Development Agency during 2025-26, including signing and submission of all documents, providing information / bids to JREDA, representing us in all matters before JREDA, and generally dealing with JREDA in all matters in connection with our bid for the captioned project.

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

For _____

_____ (Signature)

Accepted by:

_____ (Signature)

(Name, Title and Address of the Attorney)

Note: The mode of execution of the Power of Attorney shall be in accordance with the procedure (if any) prescribed by the applicable law and the charter documents of the executant(s); where so required, the same shall be under common seal affixed in accordance with the prescribed procedure.

B. Power of Attorney (Joint Venture)

(On Non-Judicial Stamp Paper of appropriate value, to be purchased in the name of the Joint Venture.)

Know all men by these presents, we, the Partners whose details are given hereunder, have formed a Joint Venture under the laws of _____, having our Registered Office(s) / Head Office(s) at _____ (hereinafter called the "Joint Venture", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators and assigns), acting through M/s _____, being the Partner-in-Charge, do hereby constitute, nominate and appoint M/s _____ — a Company incorporated under the laws of _____ and having its Registered / Head Office at _____ — as our duly constituted lawful Attorney (hereinafter called the "Attorney" / "Authorised Representative" / "Partner-in-Charge"), to exercise all or any of the powers for and on behalf of the Joint Venture in regard to the bid for the captioned NIB invited by JREDA (the "Employer"), and in particular:

- To submit the proposal and participate in the aforesaid bid on behalf of the Joint Venture;
- To negotiate with the Employer the terms and conditions for award of the Contract pursuant to the aforesaid bid, and to sign the Contract for and on behalf of the Joint Venture;
- To do any other act or to submit any other document related to the foregoing;
- To receive, accept and execute the Contract for and on behalf of the Joint Venture.

It is clearly understood that the Partner-in-Charge (Lead Partner) shall ensure performance of the Contract; and if any other Partner fails to perform its respective portion of the Contract, the same shall be deemed to be a default by all the Partners. It is expressly understood that this Power of Attorney shall remain valid, binding and irrevocable until

completion of the Defect Liability Period in terms of the Contract. The Joint Venture hereby agrees and undertakes to ratify and confirm all acts, deeds and things done by the said Attorney / Authorised Representative / Partner-in-Charge in pursuance hereof, and the same shall bind the Joint Venture as if done by the Joint Venture itself.

IN WITNESS WHEREOF, the Partners constituting the Joint Venture have executed these presents on this ____ day of _____, under the Common Seal(s) of their respective Companies.

For and on behalf of the Partners of the Joint Venture

(Common Seal of the above Partners affixed in the presence of:)

Witnesses:

15. Signature: _____ Name: _____ Designation: _____
Occupation: _____
16. Signature: _____ Name: _____ Designation: _____
Occupation: _____

Annexure-7: Assignments of Similar Nature**NIB No.: 18/JREDA/GCRT/IT/26-27**

Subject: Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

S. No.	Project Type	Name of Assignment & Brief Scope	Assignment Awarded by	Date of Commencement	Date of Completion	Work Completion Proof / Running Project Proof from Client
1						
2						
3						
4						
5						

(Signature of Authorised Signatory)

Name: _____

Designation: _____

Company

Seal:

Annexure-8: Format for Price Bid**NIB No.: 18/JREDA/GCRT/IT/26-27**

Subject: Selection of Agency for Design, Development, Implementation, Hosting and Operationalization of an IoT-Enabled Vendor Empanelment, Asset and Inventory Management System and IT-Based Performance Monitoring & Evaluation Framework, along with Three (03) Years of Comprehensive Annual Maintenance Contract for Solar Power Projects across the State of Jharkhand

Sl. No.	Description	Qty.	Unit	Rate (incl. all taxes) (Rs.)	Amount (Rs.)
1	Development of IT-based Performance Monitoring, Evaluation and Centralized Web Portal Software and all other associated system software for Solar Power Projects across the State of Jharkhand.	1	Nos.		
2	Comprehensive Annual Maintenance Contract (Quarterly Price) for Three years	12	Quarter		
3	Hosting and Cloud Server (Quarterly Price) for — single server with backup location, without load balancer or Disaster Recovery.	12	Quarter		
4	Procurement of an IoT-based Data Logger Device.	500	Nos.		
5	Installation, Commissioning and Integration of an IoT-based Data Logger Device	500	Nos		
6	Procurement of GSM SIM with monthly internet data activation recurring charge for three years,	500	Months		
	TOTAL (Figures)				
	TOTAL (in words)				

17. The above-quoted price shall be **complete and inclusive in all respects** and shall be in accordance with the approved Technical Specifications and Scope of Work. The quoted price shall include **all applicable Central, State and Local taxes, duties, levies and cess**, as applicable, along with the cost of **packing, forwarding, transit insurance, loading and unloading, transportation and all other incidental charges**, on **FOR destination basis anywhere in the State of Jharkhand**. The quoted price shall also include all costs associated with **supply, installation, testing, commissioning, integration, operation and maintenance** of the system/equipment for a period of **three (03) years** from the date of successful commissioning. The contract may, subject to satisfactory performance of the Agency, **be extended for up to an additional four (02) years**, on mutually agreed terms and conditions and as approved by the Competent Authority. It is certified that the rates quoted for all components above are in accordance with the specifications, terms and conditions set out in the bid document.

18. Prices shall be quoted in complete numeric figures and in words.

(Signature of Authorised Signatory)

Name: _____

Designation: _____

Company Seal:

Annexure-9: Format for Submitting Bank Guarantee for Earnest Money Deposit

NIB No.: 18/JREDA/GCRT/IT/26-27

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

To,

The Director,

Jharkhand Renewable Energy Development Agency (JREDA),

3rd Floor, S.L.D.C. Building, Kusai Colony,

Doranda, Ranchi - 834002 (Jharkhand).

WHEREAS _____ (Supplier's name) (hereinafter referred to as the "Supplier"), a Company registered under the Companies Act, 1956 / 2013, having its registered office at _____, is required to deposit with the Purchaser, by way of Earnest Money, the sum of Rs. _____ (Rupees _____ only) in connection with its tender for the work referred to in NIB No. _____ dated _____, as per the specifications, terms and conditions set out therein.

AND WHEREAS the Supplier has, in accordance with the said NIB, agreed to establish a Bank Guarantee in favour of the Purchaser, valid up to _____ (date), in lieu of deposit of Earnest Money in cash.

AND WHEREAS the Purchaser has agreed to accept a Bank Guarantee from us in lieu of Earnest Money in cash from the Supplier.

19. We, _____ (the "Bank"), hereby agree and undertake to pay to the Purchaser, on demand, the said amount of Rs. _____ (Rupees _____ only), without any protest or demur, in the event the Supplier / Tenderer, after submission of its tender, resiles from or withdraws its offer, or modifies the terms and conditions thereof in a manner not acceptable to the Purchaser, or expresses unwillingness to accept the order placed and/or the Letter of Intent issued for the work under the said NIB.
20. The decision of the Purchaser as to whether the Supplier / Tenderer has resiled from or withdrawn its offer, or has modified the terms and conditions thereof in a manner not acceptable to the Purchaser, or has expressed unwillingness to accept the order placed and/or Letter of Intent issued, shall be final and binding on the Bank, and the Bank shall not be entitled to question the same.
21. Notwithstanding anything contained in the foregoing, the liability of the Bank under this Guarantee shall be restricted to Rs. _____ (Rupees _____ only).
22. This Guarantee shall remain valid and in full force and effect up to _____ (Date) and shall expire thereafter, unless intimation is given to the Bank by the Purchaser earlier in writing discharging the Bank from its obligations hereunder.
23. The Bank shall not revoke this Guarantee during its currency except with the consent of the Purchaser in writing.
24. This Guarantee shall not be affected by any change in the constitution of the Supplier / Tenderer or of the Purchaser or of the Bank, but shall enure to the benefit of the Purchaser and shall be enforceable against the Bank's legal successors or assignees by the Purchaser or its legal successors.
25. Notwithstanding anything contained hereinabove, unless a demand or claim under this Guarantee is made on the Bank in writing within six (06) months from the date of expiry of this Guarantee, the Bank shall be discharged from all liabilities under this Guarantee thereafter.
26. The Bank has the power to issue this Guarantee under its Memorandum and Articles of Association, and the undersigned executing this Guarantee has the necessary power to do so under a duly executed Power of Attorney granted by the Bank.

Signed and delivered for and on behalf of _____ Bank.

(Banker's Name): _____

Name of Bank Manager: _____

Address: _____

Annexure-10: Contact Person for the NIB

NIB No.: 18/JREDA/GCRT/IT/26-27

[On the letterhead of the Bidding Company]

Sl. No.	Particulars	Details
1	Contact Person Name for the NIB	
2	Designation	
3	Contact Number (Phone & Mobile)	
4	Fax Number	
5	E-mail ID	
6	Corresponding Address with PIN code	
7	Remarks	

(Signature of Authorised Signatory)

Name: _____

Designation: _____

Company Seal:

--- END OF DOCUMENT ---