North Bihar Power Distribution Company Limited
(Regd. Office: Vidyut Bhawan, Bailey Road, Patna)
CIN No.U40109BR2012SGC018920
Website: www.nbpdcl.co.in E-mail- rdssit.bihar@gmail.com

NIT NO: 83/PR/NBPDCL/2025

Request for Proposal

For

Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years

TABLE OF CONTENTS

1. Request for Proposal Notice

NIT NO: - 83/PR/NBPDCL/2025

North Bihar Power Distribution Company Limited (NBPDCL), a Government of Bihar Undertaking, invites Request for Proposal for "Request for Proposals (RFP) for Selection of SI for Preparation of Fixed Asset Register (FAR) and Enterprise Asset Management (EAM) for BSPHCL and its subsidiary companies & Maintenance Management for 5 years". Online bids from eligible and experienced firms, companies, partnership firms, government owned or private registered companies who have necessary experience are welcome.

S. No.	Particulars	Estimated Value (INR) including GST	E.M.D. (INR)	Cost of RfP Document (INR)
1.	Request for Proposals (RFP) for Selection of SI for Preparation of Fixed Asset Register (FAR) and Enterprise Asset Management (EAM) for BSPHCL and its subsidiary companies & Maintenance Management for 5 years	Rs. 216 Crore/-	2.26 Crore	29,500 including GST

Period of Sale / Download of RFP document	From 08/08/2025 to 29/08/2025 (up to 17:00 Hrs.) through the website https://eproc2.bihar.gov.in
Cost of Tender document	On payment of Rs 25,000/- (Rupees twenty five thousand only) + 18% GST through Online mode at the e-procument portal https://eproc2.bihar.gov.in
Last Date of Submission of bid in soft-copy on e-procurement portal https://eproc2.bihar.gov.in	Up to 29/08/2025 (up to 17:00 Hrs)
Bid Security (Earnest Money Deposit)	Rs. 2.26 Crore only in the form of Bank Guarantee in favour of "Senior Manager (F&A), North Bihar Power Distribution Company Limited"
Date of Pre-Bid Meeting	18/08/2025 at 12:30 Hrs. at Conference Hall, 4th Floor, Vidyut Bhawan-3, Bailey Road, Patna, Bihar-800021. Contact person/Meeting coordinator: Chief Engineer (P&E). Pre-Bid query submission type through e-mail (in xls format only) on rdssit.bihar@gmail.com by 18-08-2025 upto 23:59 hrs.
Date of Pre-qualification & Technical Bid Opening	02/09/2025 after 11:30 Hrs.
Date of opening of Price Part:	To be notified on https://eproc2.bihar.gov.in after Evaluation of Pre-qualification & Technical Bids

The RFP documents can be downloaded from website https://eproc2.bihar.gov.in . Submission of RFP documents must be accompanied with receipt of payment towards cost of Tender document and Bank Guarantee for EMD in favor of "Senior Manager (F&A), North Bihar Power Distribution Company Limited", failing which the bid shall be summarily rejected. Original Bank Guarantee is required to be submitted in the office of Chief Engineer (P&E), NBPDCL, Vidyut Bhawan, Patna, Bihar on or before 17:30 hrs. on 01/09/2025.

Chief Engineer (P&E)

North Bihar Power Distribution Company Limited

1. Request for Proposals (RFP) for Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years.
2. Single Stage Two-Envelope Least Cost Selection (L1) Bidding Process with e-Procurement
3. OPEN COMPETITIVE PROCUREMENT
4. Contract Title: "Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years"
5. North Bihar Power Distribution Company Limited (NBPDCL) invites online Proposals for "**Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years**". Bidders are advised to note the clauses on Eligibility and Qualification Requirements and Evaluation Criteria in the RFP Document for evaluation of Proposals.
6. Bidding for selection of System Integrator (SI) will be conducted through Domestic competitive bidding on turnkey basis.
7. The RFP Document is available online on [**https://eproc2.bihar.gov.in**] as per NIT Notice on payment of cost of document (Tender Fee). The prospective Bidders would be responsible for downloading the RFP Document and ensuring that any addenda/ corrigendum/ amendment/ clarification thereto available on the [**https://eproc2.bihar.gov.in**] is also downloaded and incorporated.
8. The bidding shall be conducted **under Single Stage Two-Envelope Least Cost Selection (L1) Bidding process with e-Procurement** as specified in "Instructions to Bidders and Bid Data Sheet".
9. Under the Single Stage Two-Envelope Bidding process, the Bidder shall not quote, disclose, or submit its price in the Technical Proposal (First Envelope) or in any other manner, whatsoever, except as part of the Financial Proposal (Second Envelope). In case of any non-compliance in this regard, the Proposal shall be outrightly / summarily rejected.
10. An incomplete and/or ambiguous and/or conditional Proposal and/or Proposal submitted late is liable to be ignored/ summarily rejected.

11. Proposal must be submitted online through the e-Procurement/ e-Tendering process specified in RFP. Any Proposal or modifications to Proposal received outside the e-Procurement system will not be considered, unless otherwise specified in RFP. NBPDCL shall not be held liable for any delays due to e-Procurement/ e-Tendering system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, NBPDCL shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to this RFP.

12. The Bidder should provide detailed information on any litigation or arbitration arising out of its completed contracts or contract under execution during the last five years with *NBPDCL*. A history of awards involving litigations against the Bidder, or any part or JV may result in rejection of bid. The Bidder should furnish the self-declaration stating the above and upload the same along with the other documents in the relevant field in the e-procurement portal, failing which the offer is liable to be rejected

13. If the information furnished by the Bidder is found to be false at any stage of tendering / execution, then the *NBPDCL*, at its discretion may act against such Bidder. If false information is found at the Tendering stage *the NBPDCL* may forfeit the EMD paid, disqualify the offer of such Bidder, blacklist the Firm etc. If false information is found at execution stage, then *the NBPDCL* may cancel the works awarded, forfeit the Bank Guarantee furnished against the performance of the contract, blacklist the Firm, besides initiating action for recovery of excess money paid by *NBPDCL*, if any after getting the works executed from other contractors, levy liquidated damages etc.
14. Important dates, amounts and other details pertaining to this RFP Notice including submission and opening of proposal, cost of documents/ Tender Fee, address for communication, etc., are given in the NIT Notice.

15. If NBPDCL office happens to be closed on the specified date of opening of the Proposals, the Proposals/ bids will be opened on the next working day at the same time and venue or as may be notified by NBPDCL.

16. Other details can be seen in the RFP document.

2. Instructions to Bidders and Bid Data Sheet

a. General Provisions

1. Definitions	**1.1. Definitions** (a) **"System Integrator (SI) Contract" or "SI Contract" or "Contract"** shall mean the Contract to be entered into between the Selected Bidder in the event the Selected Bidder is an individual entity, Lead Bidder in the event the Selected Bidder is a Consortium [1] and the NBPDCL, for undertaking the Project; (b) **"Bid"** shall mean the bid submitted by a Bidder(s) in response to this RFP and shall include the Technical Bid and the Financial Bid; (c) **"Bidder(s)"** shall mean individual entity or Consortium of entities bidding in response to this RFP. The Bidder can either be a company incorporated under the applicable laws of their relevant jurisdiction; (d) **"Bidding Consortium"** shall mean the Consortium of entities bidding for Project after executing Consortium Agreement as per the terms and conditions of this RFP; (e) **"Bid Data Sheet (BDS)"** means an integral part of the **Instructions to Bidders (ITB)**, that is used to reflect issues, details, and conditions specific to the procurement, to supplement and/or modify the provisions of ITB. (f) **"Bid Submission Deadline"** shall have the meaning as ascribed thereto in **ITB**; (g) **"Conflict of Interest"** shall have the meaning as ascribed thereto in **ITB 3**; (h) **"SI 2nd"** shall mean the Member of the Bidding Consortium other than the SI-Lead; (i) **"Contractor"** shall mean the same as "SI"; (j) **"Contract Price"** shall have the meaning as ascribed thereto in Section "Conditions of Contract"; (k) **"Financial Bid"** shall have the meaning as ascribed thereto in **ITB 17**; (l) **"Financially Evaluated Entity"** shall mean the company which has been evaluated for the satisfaction of the financial requirement set forth in RFP; (m) "**Financial Proposal"** shall mean the same as Financial Bid; (n) **"Financial Year" or "FY"** shall mean the period starting from 1st April of a calendar year to 31st March of the consecutive calendar year; (o) **"ITB"** (this Section of the RFP) means the Instructions to Bidders that, along with other Sections, provides the Bidders with all information needed to prepare their Proposals. (p) **"SI-Lead" or "Lead Bidder"** shall mean the Member of the Bidding Consortium, designated as such by the other members of the Consortium, having authority to represent all the members before the NBPDCL; (q) "**Month**" shall mean calendar months unless otherwise specified. (r) **"Operational Go-live" or "Operational"** shall have the meaning " Phase-2: Roll Out & completion of stabilization period" as ascribed thereto in Clause "Timelines & Milestones" of the RFP Document; (s) **"Project"** shall mean the NBPDCL's proposed Project defined in the RFP Document and in clause "Overview of the scope of work"; (t) **"Project Completion" or "Completion"** shall signify the end of the Implementation and FMS phase of the Project; (u) **"Proposal"** shall mean the same as Bid and shall include the Technical Proposal and the Financial Proposal; (v) **"Request for Proposal" or "RFP"** means this Tender of which the number, name and details have been mentioned in NIT notice, including all its Volumes/ Sections/ Forms/ Annexures/ Appendices etc., for Selection of System Integrator (SI) (including all clarification/ addendum/ amendment/ corrigendum/ etc. issued from time to time); (w) "**RFP Document**" shall have the same meaning as ascribed thereto in ITB 2.

[1] SI-Lead in the event the Selected Bidder is a Consortium

	(x) **"Service(s)" or "Related Service(s)"** shall mean any Service(s) performed or to be performed as a part of the Project by the SI; (y) **"Sub-Contractor"** shall mean any person, natural or legal, including manufacturers, to whom execution of any part of the SI Contract, including preparation of any design or supply of the proposed project OEM Product, is sub-contracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns; (z) **"Technical Bid"** shall have the meaning as ascribed thereto in **ITB** ; (aa) **"Technical Proposal"** shall mean the same as Technical Bid; (bb) **"Technically Evaluated Entity"** shall mean the company which has been evaluated for the satisfaction of the technical requirement set forth in RFP; (cc) **"Tender"** shall mean the same as "RFP"; (dd) **"Tender Fee"** shall mean the fees submitted with the RFP; (ee) **"NBPDCL"** means the entity, named that has issued the Request for Bids for Appointment of System Integrator for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years , to enter into a Contract for the implementation of the proposed project system in the Project area as per the RFP Document. 1.2. Capitalised terms used herein but not defined specifically shall have the meaning as ascribed to them in elsewhere in RFP Document. 1.3. **Headings and Marginal Notes**: Headings and marginal notes to the terms and conditions of the Contract are not deemed to form part thereof nor are to be taken into consideration in the interpretation or construction thereof or of the Contract.
2. Introduction (a) About this Request for Proposal (b) Bidding Process and Electronic- Procurement System (c) Study of NBPDCL's Existing Systems	2.1. This Request for Proposal (RFP) is issued by the NBPDCL for selecting the System Integrator (SI) for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years . This RFP Document provides the overall structure of the document, requirements and general terms and conditions applicable to each Bidder. 2.2. Bidding against the Request for Proposal shall be under Two Envelope Single Stage Bidding Process. The bidding process will be conducted online with Electronic – Procurement System (e-Procurement/ e- Tendering/ e- Bidding System) as specified in the BDS (2.2). 2.2.1. The Bidders who wish to participate in online Tenders will have to procure/ should have legally valid digital signature as per Information Technology Act, 2000 using which they can sign their electronic Bids. 2.2.2. All Bids should be digitally signed. For details regarding digital signature certificate and related training, the Bidder should contact at the address mentioned in the BDS (2.2.2). 2.3. The Bidders are invited to submit their Proposal comprising a Technical Proposal and a Financial Proposal for award of Contract named in the BDS (2.3). The Proposal will be the basis for evaluation and holding discussions, if required, and ultimately signing the Contract with the Selected Bidder. 2.4. A standard brief regarding detail of existing systems relevant to the proposed Project has been provided in BDS (2.4). However, notwithstanding the same, all Bidders are advised to visit and examine the site and existing facilities, and obtain for itself, on its own responsibility and cost, all information that may be necessary for preparing the Bid. The cost of visiting the site shall be at the Bidder's own expense. 2.5. The Bidder and any of its personnel or agents shall be granted

(d) Pre-Bid Meeting	permission, through the assistance of the NBPDCL, by the NBPDCL to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, its personnel and agents will release and indemnify the NBPDCL and its personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of/or damage to property and any other loss, damage, costs and expenses incurred as a result of the inspection. 2.6. The Bidder's designated representative(s) is/are invited to attend a pre-bid meeting at Bidder's expense, which shall take place at the time and venue specified in the BDS(2.6) 2.7. The purpose of the meeting will be to clarify any issues regarding this RFP in general and the scope of work in particular. 2.8. The Bidder may submit any question or query to NBPDCL in writing, to reach NBPDCL before the pre-bid meeting as per the format given in BDS (2.8). It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted as indicated hereafter. 2.9. Clarifications to the queries received together with any responses prepared after the meeting, will be transmitted through the e-Procurement System mentioned in ITB 2.2 without delay. 2.10. Non-attendance at the pre-bid meeting (at the NBPDCL specified venue) will not be a cause for disqualification of a Bidder
3. Conflict of Interest	3.1. A Bidder shall not have a conflict of interest that affects the Bidding process (the "**Conflict of Interest")**. In the event a Bidder is found to have a Conflict of Interest, the NBPDCL may choose to reject the Bid, terminate the SI Contract (in the event it has been awarded) as per termination clause in the SI Contract. Any Bidder found to have a Conflict of Interest shall be disqualified. 3.2. A Bidder shall be deemed to have a Conflict of Interest affecting the bidding process, if: (a) a constituent of such Bidder is also a constituent of another Bidder; or (b) such Bidder or its Member thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder or its Member, has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder or its Member; or (c) such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or (d) such Bidder, has a relationship with another Bidder, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Bid of either or each other; or (e) such Bidder has participated as a consultant to the Authority in the preparation of any documents, design, or technical specifications of the Project. *Explanation: In case a Bidder is a Consortium, then the term Bidder as used in this Clause shall include each Member of such Consortium*.
4. Bidders to Inform Itself Fully	4.1. The Bidder shall make independent enquiry and satisfy itself with respect to all the required information, inputs, conditions (including site conditions) and circumstances and factors that may have any effect on its Bid. Once the Bidder has submitted the Bid, the Bidder shall be deemed to have examined the laws and regulations in force and fixed its price taking into account all such relevant conditions and also the risks, contingencies and other circumstances which may influence or

		affect the Services performed within the scope of work, as provided in this RFP. Accordingly, the Bidder acknowledges that, on being selected, it shall not be relieved from any of its obligations under the RFP Documents nor shall be entitled to any extension of time for commencement of Services or financial compensation for any reasons whatsoever attributable to SI. 4.2. The Bidders should particularly acquaint themselves with the technical requirements of NBPDCL's all the existing business processes, systems, operations, assets, equipment, statutory codes, and standards. 4.3. The Bidder shall familiarize itself with the procedures and time frames required to obtain all consents, clearances and permits required for implementation of the Project
5.	Fraud and Corruption	*5.1.* NBPDCL requires compliance with the Anti-Corruption Guidelines/ Laws in force of the relevant Government/ its instrumentalities/ NBPDCL.
6.	Eligibility and Qualification Requirements	6.1. The eligibility and qualification requirements for submission of Proposals against the RFP are given in RFP particularly in clause "Eligibility and Qualification Requirements" of the RFP. Proposals, if any, from Bidders not complying with the same shall be rejected outright and shall not be considered for evaluation.

b. Preparation of Proposals

7.	General Considerations and Instructions	7.1 In preparing the Proposal, the Bidder is expected to examine the RFP Document in detail. Material deficiencies in providing the information or documentation requested in the RFP Document may result in rejection of the Proposal. 7.2 All Bidders shall comply with the dates and amounts indicated in **NIT notice** of this RFP. 7.3 The Bidders shall comply with and agree to all the provisions of this RFP for various bidding considerations including but not limited to eligibility, costs, payments, information regarding NBPDCL's systems, bid formats, Bid submission and other considerations. 7.4 The Bidders shall be evaluated based on the requirements, criteria, norms, and procedures laid out or included by reference of the RFP Document. 7.5 The Bidders shall be required to undertake the scope of work for the Project indicated in the RFP Document. 7.6 The Bidders must conform to the requirements and provide a list of equipment (including any special equipment) necessary to meet the technical specifications, functional & performance requirements as specified in the RFP Document. The equipment supplied shall confirm to all the requirements under all applicable laws including any order issued by the central government including Order No No.9/16/2016-Trans-Part (2) dated 18 November 2020 and Order No. 11/05/2018-Coord. dated 17 September 2020 issued by Ministry of Power and Order No. F/No.6/18/2019-PPD by Ministry of Finance, Department of Expenditure, Public Procurement Division dated 23 July 2020 including any amendments or modifications to the same from time to time. 7.7 Bidder shall submit 'Clause by Clause' compliance to the RFP document including the SI Contract and the technical specifications and functional requirements (with amendments, if any). 7.8 Bidder's Proposal shall include sufficient information and supporting documentation in order to determine compliance without further necessity for inquiries. 7.9 The Bidder's Proposal shall clearly identify all features described in the specifications along with any supporting reference material in accordance with ITB as per the format prescribed in Form 6 given in RFP. 7.10 An analysis of the technical specifications, functional and performance requirements of the proposed system as provided in RFP may lead the

		Bidders to conclude that additional items of hardware, software and/or services (for example communication repeater, router etc.) are required that are not specifically mentioned in this specification. The Bidders shall be responsible for installing such items (at no additional cost to the NBPDCL) such that a reliable and fully functional proposed system is implemented that meets or exceed the capacity and performance requirements. Such materials shall be deemed to be within the scope of the SI Contract. To the extent possible, the Bidder shall identify and include all such additional items in their proposal.
	7.11	The Bidders are advised to visit sites (at their own expense), prior to the submission of the proposal, and make surveys and assessments as deemed necessary for proposal submission.
	7.12	Failure by NBPDCL to request information from a Bidder that has not been properly provided shall not be construed as waiver on the part of NBPDCL of the obligation of the Bidder to furnish the said data / information unless the waiver is in writing.
	7.13	Bid submitted by the Bidders before the Bid Submission Deadline, shall become the property of the NBPDCL, and shall not be returned to the Bidders.
	7.14	The cost of all stamp duties payable for executing the RFP, Bid Documents or Project shall be borne by the Bidders.
	7.15	No interest shall be paid to the Bidder on any amount submitted to NBPDCL, whether to be returned or not.
8. Cost of Bidding / Preparation of Proposal	8.1	The Bidder shall bear all costs associated with the preparation and submission of its Proposal, including post-bid discussions, technical and other presentations etc., and NBPDCL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the selection process. NBPDCL is not bound to accept any proposal and reserves the right to annul the selection process at any time prior to Contract award, without thereby incurring any liability to the Bidder.
9. Language	9.1	Bid/Proposal prepared by the Bidders and all correspondence and documents relating to the Bid exchanged by the Bidder and NBPDCL and its associates shall be written in the English language.
	9.2	In case the correspondence or documents are in different language, the Bidder must submit certified translations along with the original document. These translations can be certified by a Certified Translator or the same can be submitted with an undertaking on a non-judicial stamp paper for translation.
10. Documents Comprising the Proposal and List of Forms	10.1	The Proposal shall comprise the documents and forms mentioned in this RFP in general. A Document Checklist for the same as well as the list of forms referred to in this RFP Document is provided in BDS (10.1).
11. Only One Proposal	11.1	A Bidder shall submit only one Bid in the same bidding process, either individually as a Sole Bidder or as a Member of a Bidding Consortium (including the SI-Lead). It is further clarified that any of the Parent/ Affiliate/Ultimate Parent of the Bidder/ Member in a Bidding Consortium shall not separately participate directly or indirectly in the same bidding process.
12. Proposal / Bid Validity & Bid Security	12.1	The Bid/ Proposal submitted by the Bidder(s) shall be valid for a period of specified in **BDS (12.1)** reckoned from the Bid Submission Deadline specified in ITB 18 & NIT Notice as may be extended from time to time.
	12.1.1	All such offers, and terms and conditions set forth in this RFP shall be valid for the SI till the successful completion of the Project.
	12.1.2	In exceptional circumstance, NBPDCL may solicit the Bidder's consent to an extension of the Bid validity period. The request and responses thereto shall be made in writing or by email. If a Bidder accepts to extend the validity, the Bid Security shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request will not be required or permitted to modify its Bid.
	12.2	The Bidder shall furnish as part of its Technical Bid, a Bid security in original form, and in the amount specified in the **BDS (12.2)**.

	12.3 Pursuant to **ITB 12.2**, the Bid Security shall be a demand guarantee, and in any of the following forms, at the Bidder's option: (a) an unconditional bank guarantee issued by any of the banks mentioned in **BDS (12.3(a))**; (b) Bid Security in other forms, if specified in the **BDS.** In the case of a bank guarantee, the Bank Guarantee for Bid Security shall be provided by the Lead Consortium Member/ Sole Bidder in the format prescribed in Form 5 of RFP, Bidding Forms - Technical Proposal. The bid security shall be valid for 90 (ninety) Days beyond the end of validity period of the Bid specified in ITB 12.1. This shall also apply if the period of the Bid validity is extended. 12.4 Any Bid not accompanied by a substantially responsive Bid Security a specified, shall be rejected by the NBPDCL as non-responsive. 12.5 If the Bid Security from any Bidder is forfeited or lapsed either partly or wholly during the Bid process, then such Bidders and Consortium are liable for rejection. 12.6 Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful bidder's signing the contract and furnishing the Performance Security pursuant to **ITB 29**. 12.7 The Bid Security of the Selected Bidder shall be returned as promptly as possible once the SI has signed the Contract with the NBPDCL and furnished the required Performance Security. 12.8 The Bid Security may be forfeited if 1. the Bidder withdraws/ modifies/ substitutes its Bid during the period of Bid validity as specified in ITB 12.1 or any extension thereto provided by the Bidder; 2. bid is rejected for existence of conflict of interest, or more than one bid being submitted by a Bidder; 3. bid submitted by a Consortium is not accompanied by Consortium Agreement in the form provided in this RFP. 4. The Selected Bidder: ○ fails to sign the SI Contract; or ○ fails to furnish a Performance Security in accordance with ITB 29; or is found to have submitted false particulars/ fake documents; or ○ refuses to execute the work at its agreed scope/quoted rates, after NBPDCL issues the Letter of Award; ○ is involved in incidents of manipulation of rates either by cartelization or otherwise.
13. Extension of Proposal Validity	13.1 NBPDCL will make its best effort to complete the bidding process and award the contract prior to the date of expiry of the Bid/ Proposal validity. However, should the need arise, NBPDCL may request, in writing, all Bidders who submitted Bids/Proposals prior to the Bid Submission Deadline to extend the Proposals' validity. 13.2 If the Bidder agrees to extend the validity of its Proposal, it shall be done without any change in the original Proposal. 13.3 The Bidder has the right to refuse to extend the validity of its Proposal in which case such Proposal will not be further evaluated.
14. Clarification and Amendment of RFP	14.1 Bidders may seek clarifications on this RFP in writing, through a letter, fax, or email to reach NBPDCL no later than the period specified in **BDS**. 14.2 NBPDCL may issue clarification only, at its sole discretion, which is considered reasonable by it. 14.3 Any such clarifications issued shall be issued on e-tender portal. 14.4 NBPDCL is not under any obligation to entertain/ respond to suggestions made or to incorporate modifications sought for. 14.5 For the avoidance of any doubt, it is hereby clarified that the NBPDCL is not obliged to extend the Bid Submission Deadline on account of clarifications sought. 14.6 During the bidding process, NBPDCL, for any reason may modify the RFP, including the timelines, by issuance of addendum / modification / errata and / or a revised document. 14.7 Revisions or amendments in the bidding guidelines may cause

		NBPDCL to modify amend or supplement the RFP to be in conformance with any applicable Law. Such document shall be notified in writing through the e-Procurement System mentioned in ITB or letter or fax or e-mail to all the entities who have downloaded the RFP, and the same shall be binding on them.
	14.8	NBPDCL shall not be responsible for any delay in receipt of the addendum/ modification/ errata and/ or revised document and receipt of the same by the Bidders shall be presumed by NBPDCL upon taking all reasonable steps to notify the Bidders. Late receipt of any addendum/ modification/ errata and/ or revised document will not relieve the Bidder from being bound by that modification or the Bid Submission Deadline. All such amendments/modifications shall be issued at least 7(seven) working days prior to the Bid Submission Deadline.
	14.9	In order to provide reasonable time to the Bidders to take the modification into account in preparing their Bid, or for any other reasons, NBPDCL may, at its discretion, extend the deadline/ timeline for Bid submission.
15. Preparation of Bid/ Proposal and Bid Formats	15.1	The Bidder shall prepare its Bid and furnish required information and documents as per the guidelines, formats, forms, schedules, fees, and other specification in this Section, as well as the RFP Document in general.
	15.2	Strict adherence to the formats/ forms, wherever specified, is required. Wherever information has been sought in specified formats, the Bidder shall refrain from referring to brochures or pamphlets. Non-adherence to formats and/ or submission of incomplete information may be a ground for declaring the Bid as non-responsive. Each format must be duly signed and stamped by the authorized signatory of the Bidder.
16. Technical Bid/ Proposal Format and Content	16.1	The Technical Bid/Proposal shall be prepared using the Forms provided in the RFP and shall comprise the information, details and documents listed in subsequent clauses herein The Technical Bid/ Proposal shall not include any financial information. A Technical Proposal containing material financial information shall be declared non-responsive.
	16.2	The Technical Bid shall contain the list of all participating Consortium Members and Sub-contractor(s) (if applicable) participating in the Bid as per the format prescribed in Form 1. Furthermore, the Technical Bid shall contain a covering letter by the Lead Consortium Member/ Sole Bidder duly designated and signed by all Members of that Bidding Consortium as per the format prescribed in Form 1.
	16.3	The Technical Bid shall contain a legally enforceable Consortium Agreement (in case Bidder is a Consortium) entered amongst all Members of that Bidding Consortium, designating one of the Members to be the Lead Consortium Member as per the format prescribed in Form 1. In the absence of a duly executed Consortium Agreement, the Bid shall not be considered for evaluation and will be rejected.
	16.4	The Technical Bid shall contain Power of Attorney from each Consortium Member in favour of the Lead Consortium Member as per the format prescribed in Form 2. All submissions and representations by the Lead Member shall be deemed to be on-behalf of the entire consortium and shall be binding all the members of the Consortium.
	16.5	The Lead Consortium Member/ Sole Bidder shall designate one person to represent the Bidding Consortium/ Bidder in its dealings with NBPDCL. The person designated by the Lead Consortium Member/ Sole Bidder (registered Company) shall be authorized through a Power of Attorney as per Form 3 to perform all tasks including, but not limited to, providing information, responding to inquiries, signing of Bid on behalf of the Consortium, etc. and attach the same in the Technical Bid.
	16.6	The Technical Bid shall contain signed Letter of Consent as per Form 7 from each Consortium Member that the Bid has been reviewed and each element of the Bid is agreed to by them including but not limited to any commitment in the Project.
	16.7	The Technical Bid shall contain the Tender Fees and the Bid Security as per the format prescribed in Form 5.
	16.8	The Technical Bid shall contain all documents required to

	prove/substantiate the Eligibility and Qualification Requirements of the Bidders or the Bidding Consortium specified in ITB 6.1): a) Company profile document with evidence of fields of competence for each Consortium Member; b) Attested copy of Certificate of Registration/ Incorporation issued by the Registrar of Companies for each Consortium Member/ Bidder; c) Certificate of Commencement of Business issued by the Registrar of Companies for Lead Consortium Member/ Sole Bidder clearly indicating the number of years of operation. 16.9 The Bidder shall submit a preliminary Project implementation plan along with the Bid which shall include at least the following activities (as per the format prescribed in Form 6. 16.10 In case of Award of the SI Contract, the detailed Project implementation plan, submitted as part of the Technical Bid, shall be revised, and submitted by the SI, in consultation with the NBPDCL, to ensure smooth takeover of existing NBPDCL systems and any ongoing Services under the scope of the proposed Project. 16.11 The Technical Bid of the Bidder shall contain the indicative List of Material and Services in the format prescribed in Form 8 without any mention of costs/ prices. 16.12 The List of Material and Services shall be accompanied by the detailed specifications of the supply in the Technical Bid demonstrating responsiveness of the quoted Solution. The Bidder shall also indicate the country of origin of each equipment in Form 8. For supply of equipment / material from the country of origin other than India, the bidder shall submit performance certificate in support of satisfactory operation in India or a country other than the country of origin having climatic and operational conditions including ambient temperature similar to that of India for more than number of years, indicated in **BDS** in accordance with Order No. 11/05/2018-Coord. dated 17 September 2020 issued by the Ministry of Power including any amendments or modifications to the same from time to time. 16.13 The Technical Bid of the Bidder shall contain the names and details of the suitably qualified Bidder's representative and Key Personnel to perform the SI Contract as per the format provided in Form 9. The data on their experience should be supplied using the Form 10 for each candidate proposed. 16.14 Any removal/ change/ replacement of Key Personnel (as provided in Form 9 and 10) shall be notified to NBPDCL within 7(seven) working days along with the Curriculum Vitae (CV) of the personnel replacing the previous personnel. The personnel replacing the previous key personnel shall have equivalent or better educational qualification and relevant professional experience Note: Submission of the Technical Proposal in a materially wrong format may lead to the Proposal being deemed non-responsive to the RFP requirements.
17. Financial Bid/ Proposal Format and Content	17.1 The Financial Proposal shall be prepared using the Forms provided in the RFP and shall comprise the information, details and documents listed in subsequent clauses herein. 17.2 The Financial Bid shall only be submitted electronically as per the format prescribed in Form 1 given in clause 12. No hard copy of the Financial Bid shall be submitted. The Financial Bid shall include the cost of all items services mentioned in scope of work like different licenses that are required for installation, data centre facilities, development, implementation & maintenance of related software application, survey data collection / digitisation / migration to new platform, operational Go-Live, and maintenance of the Project etc.. Price quoted should clearly mention the basic cost/ unit price including any other taxes/ duties/ levies, Goods and Service Tax (GST). The Financial Bid will be evaluated basis the total cost of the Project as quoted by the Bidder(s) for the

		Contract Period in Form 1 & 2 given in Clause 12.
	17.3	Unit prices (exclusive of all taxes/ duties/ levies/ cess etc.) (as provided in Form 1 in Clause 12) quoted by the Bidder shall be firm and final and shall remain constant throughout the Contract Period and shall not be subject to any modifications.
	17.4	Any items or prices omitted by the Bidder, if incurred at a later stage by the Bidder, within the scope of work as provided in the SI Contract, shall be borne by the Bidder with no financial liability on NBPDCL.
	17.5	Any scope of work required for expansions during the Contract Period shall be supplied by the SI keeping the specifications and unit price same as per the List of Material and Services (as provided in Form 2 given in in Clause 12) and Financial Bid (as provided in Form 1), respectively.
	17.6	All prices in the Financial Bid shall be quoted in Indian Rupees. The Bidder shall bear the risk related to foreign exchange variations during the Contract Period. The variation in the statutory taxes will be in accordance with the SI Contract.
	17.7	Alternative (alternate technology/ architecture/ design/ functionality or proposals with multiple options) Bids shall be rejected.

c. Submission, Opening and Evaluation

18. Submission of Bids/ Proposals and Bid Submission Deadline	18.1	Both Technical Bid and Financial Bid shall be digitally signed and submitted electronically using the e-Procurement system indicated in ITB 2.2 on or before the Bid Submission Deadline following the instructions therein. All the documents shall be scanned and uploaded however, where the data is required to be entered manually, the same shall be entered accordingly by the Bidder.
(a) Submission of Bids/ Proposals	18.2	Requisite Tender Fee and Bid Security in the specified form/ instrument shall be submitted in original so as reach before the Bid Submission Deadline, failing which the Bid shall be deemed non-responsive.
	18.3	In addition to the electronic submission and submission of Tender Fee and Bid Security in the specified form/ instrument in original as per ITB 18.2, if so, specified in **BDS,** the Bidder shall also provide certain document in original/ hard copy/(ies) of the original/ revised (if any) in a sealed envelope before the Bid Submission Deadline.
(b) Bid Submission Deadline	18.4	The hard copies to be submitted as per ITB 18.3 shall be in original and/ or attested as may be specified in **BDS**.
	18.5	The hard copy of the document as per ITB 18.2 and ITB 18.4 above shall be sent in a sealed envelope to NBPDCL via Registered Post with Acknowledgement Due (RPAD), speed post or courier in the manner specified in RFP, which should reach NBPDCL before the Bid Submission Deadline.
	18.6	The sealed envelope shall be clearly marked on the top with details mentioned in **BDS**. The sealed envelope shall be addressed to the NBPDCL as specified in **BDS**. The sealed envelope shall also clearly mention the name of the Lead Consortium Member/ Sole Bidder submitting the Bid.
	18.7	The sealed envelope shall not contain the Financial Bid. The Financial Bid shall only be submitted electronically.
	18.8	In case of discrepancy between the electronically submitted documents and the physically submitted documents in the sealed envelope, the electronically submitted documents and the information contained therein shall prevail and be treated as the final submission.
	18.9	Insufficiency of the electronically submitted Bid shall not be compensated by any information, documentation or material provided additionally in the physically submitted documents in the sealed envelope.

	18.10	All Bids shall be electronically submitted and physically received, as may be specified in this Section, by NBPDCL no later than the Bid Submission Deadline indicated in **BDS** as may be extended from time to time by the NBPDCL.
	18.11	Bidders may prepare, edit, substitute, or withdraw their offers any number of times online before the Bid Submission Deadline as may be permitted by the e-Procurement system. After the Bid Submission Deadline, the Bidder shall not, or attempt to, change, or withdraw the Bid under any circumstances. No written or online request in this regard shall be entertained.
	18.12	Any Bid received by NBPDCL, either electronically or physically, after the Bid Submission Deadline prescribed by NBPDCL will not be uploaded and accordingly be rejected. In case of hard copy submissions, late Bids shall be returned unopened to the Bidder.
	18.13	NBPDCL may, at its discretion, extend this Bid Submission Deadline by amending the RFP at any time prior to opening of the Bids, in which case all rights and obligations of NBPDCL and the Bidders shall thereafter be subject to the deadline as extended.
	18.14	Any Proposal or its modification received by NBPDCL after the deadline through any means or medium, whatsoever, shall be declared late and rejected, and promptly returned unopened.
19. Confidentiality	19.1	Information relating to the examination, evaluation, comparison, and recommendation of SI Contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process.
	19.2	Any attempt by a Bidder to influence NBPDCL in the examination, evaluation, comparison, and post qualification of the Bids or SI Contract award decisions may result in the rejection of its Bid.
	19.3	If any Bidder, from the time of opening the Technical Bids to the time of SI Contract award, wishes to contact NBPDCL on any matter related to the bidding process, it should do so in writing.
20. Opening of Technical Bids/ Proposals	20.1	The Technical Bids shall be opened online or at the date and time, and the address indicated **BDS**. In case hard copy submission of Technical Bid or certain document is requested by the NBPDCL as per ITB 18 the physically submitted Technical Bids/ documents in the sealed envelope shall be opened simultaneously to check inter alia requisite submissions and for the Tender Fees and the Bid Security.
	20.2	The Bids shall be deemed to be under consideration immediately after they are opened and confirmation or receipt of the Tender Fee and Bid Security, and until an official intimation of award or rejection is made by NBPDCL to the Bidders.
	20.3	NBPDCL shall then separately evaluate the Bids with respect to the Eligibility and Qualification Requirements, sufficiency of the submission, conformation/ compliance/ responsiveness to all the mandatory requirements, terms, conditions, and specifications of the RFP Document without any deviation, reservation, or omission, and other parameters outlined in this RFP.
	20.4	The Financial Proposal shall remain unopened in the e-Procurement/ e-Tendering system securely, until they are opened in accordance with ITB 22.
	20.5	At the opening of the Technical Proposals the following shall be published on E-proc portal: (i) the name of the Bidder; (ii) any modifications to the Proposal submitted through the e-Procurement/ e-Tendering system prior to proposal submission deadline; and (iii) any other information deemed appropriate.
21. Bid/ Proposals Evaluation Overview and Verification/ Clarifications	21.1	The bidding process is designed to select the SI through a series of assessment of: (i) conformation/ compliance to all the mandatory requirements under applicable laws and this tender, terms, conditions, and specifications of the RFP Document without any material deviation, reservation, or omission; and (ii) the financial amounts quoted by the Bidder. The Bid submitted by the Bidder shall consist of a Technical Bid and a Financial Bid.

		First Stage-Fulfillment of Eligibility and Qualification Requirements and determination of substantial responsiveness to the RFP Documents: The Technical Bids shall be opened by NBPDCL and be checked to determine (i) whether the Bidders comply with the Eligibility Requirements, have offered eligible proposed system requirements and modules in their Bids, as specified in RFP; (ii)whether the Bidders meet the Qualification Requirement ; (iii) whether the Bids are substantially responsive to the RFP document 'Clause by Clause' compliance to the RFP Document including the technical specifications and functional requirements (with amendments, if any) as per the format prescribed in Form 8. **Second Stage-Opening of Financial Bid:** Financial Bids of all technically qualified Bidders would be opened, basis which the award of SI Contract shall be determined. **Third Stage-Award of Project:** The "Successful Bidder" as defined in ITB 25 shall be awarded the SI Contract.
	21.2	The Bidder is not permitted to alter or modify its Bid/ Proposal in any way after the Bid Submission Deadline.
	21.3	NBPDCL's determination of the responsiveness of a Bid/ Proposal is to be based on the contents of the Proposal itself including any response to clarifications sought by NBPDCL which does not alter the substance of the Proposal or the price.
	21.4	A substantially responsive Bid/ Proposal is one that conforms to all the mandatory requirements, terms, conditions, and specifications of the RFP Document without any material deviation, reservation, or omission, as defined in ITB 24.
	21.5	The Contract, if awarded, shall be executed in accordance with RFP document and any other conditions.
	21.6	Notwithstanding anything stated in the RFP Document, NBPDCL reserves the right to verify the authenticity of the documents submitted for meeting the eligibility, qualification and/or other specified requirements and may request for clarifications any additional information/ documents from the Bidder. However, the Bidder shall not be permitted to alter the substance of the Proposal or the price under any circumstances whatsoever
	21.7	NBPDCL reserves the right at its sole discretion to contact the Bidder's bank, lenders, financing institutions and any other persons as necessary to verify the Bidder's information/documents for the purpose of eligibility, qualification and/ or other specified requirements.
	21.8	NBPDCL may verify the Bidder's technical and financial data by checking with the Bidder's clients/ lenders/ bankers/ financing institutions/ any other person as necessary.
	21.9	To assist in the examination, evaluation, comparison and post-qualification of the Bids, NBPDCL may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by NBPDCL shall not be considered. NBPDCL's request for clarification and the response shall be in writing. No change in the prices shall be sought, offered, or permitted by NBPDCL in the evaluation of the Financial Bids.
22. Evaluation of Technical Bids/ Proposals	22.1	All Bids will first be evaluated for 'Clause by Clause' compliance to the RFP document and the SI Contract including the technical specifications and functional requirements (with amendments, if any) as per the format prescribed in Form 8. The Bidders fulfilling the Eligibility and Qualification Requirement and having submitted substantially responsive Bids conforming to and meeting all the mandatory requirements, terms, conditions, and specifications of the RFP Document without any material deviation, reservation, or omission, as defined in ITB 24, shall qualify for the opening of Financial Bid.

	22.2 In the event the Technical Bid is substantially responsive, NBPDCL may waive any deviation, reservation, or omission in the Bid as defined in ITB 24.1 22.2.1 Provided that a Technical Bid is substantially responsive, NBPDCL may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial, nonconformities or omissions in the Technical Bid related to documentation requirements. Such omission shall not be related to any aspect of the price Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
23. Opening of Financial Proposals	23.1 At the completion of the technical evaluation, NBPDCL shall intimate the technically qualified Bidders for opening of Financial Bids, along with the date, time of opening of Financial Bids at a venue intimated by the NBPDCL. 23.2 The Financial Bids shall be opened through the e-Procurement system referred to in ITB 2.2, in the presence of authorized representatives of all technically qualified Bidders who chose to attend the bid opening on the specified date and time.
24. Evaluation of Financial Bids/ Proposals	24.1 Provided that the Technical Bid is substantially responsive, NBPDCL will correct arithmetical errors during evaluation of Financial Proposals on the following basis: i. if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of NBPDCL there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; ii. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail, and the total shall be corrected; iii. if there is a discrepancy between words and figures, the amount in words shall prevail. However, where the amount expressed in words is related to an arithmetic error, the amount in figures shall prevail subject to (i) and (ii) above. Except as provided in (i) to (iii) herein above, NBPDCL shall reject the Financial Bid if the same contains any other computational or arithmetic discrepancy or error.
25. Deviations, Reservations and Omissions	25.1 During the evaluation of Bids/ Proposals, the following definitions apply: (a) "Deviation" is a departure from the requirements specified in the RFP document; (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the RFP document; and (c) "Omission" is the failure to submit part, or all of the information or documentation required in the RFP document. 25.2 A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that: (a) if accepted, would: (i.) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or (ii.) limit in any substantial way, inconsistent with the bidding document, the NBPDCL's rights, or the Bidder's obligations under the Contract; or (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
26. Successful / Selected Bidder *2.3.1.1*	26.1 The price as per the Financial Proposal/ Bid of all technically qualified Bidders, determined upon evaluation of Financial Proposals/ Bids, shall be the basis for determination of the Successful Bidder/ Selected Bidder. 26.2 The technically qualified Bidder with the lowest Financial Bid shall

		be considered as the Successful Bidder/ Selected Bidder and shall be considered for award of the SI Contract.
	26.3	If the Successful Bidder/ Selected Bidder does not accept the correction of errors as per ITB 23.1, its Bid shall be disqualified, and its Bid Security shall be forfeited.

d. Award of Contract

27. Award Criteria	27.1	Subject to ITB 25.3, the NBPDCL shall award the Contract to the Successful Bidder/ Selected Bidder.
	27.2	NBPDCL shall present the Letter of Award (as per the format prescribed in Form 2 given in Clause 13) to the Successful Bidder and invite the Performance Security in order to sign the SI Contract to implement the Project.
	27.3	The Successful Bidder shall provide an undertaking that the key staff identified for the Project (as submitted in its Technical Bid) shall be available for the respective proposed work requirement, anytime during the duration of the Project, till its successful completion
	27.4	If for any reason the Bid of the Successful Bidder is rejected or Letter of Award issued to the Successful Bidder is cancelled, NBPDCL is empowered to take decisions for any of the following:
	a)	Consider the next lowest evaluated Bid from eligible and qualified Bidder whose bid is determined substantially responsive; or
	b)	Annul the Bid process; or
	c)	Take any such measure as may be deemed fit in the sole discretion of NBPDCL, as applicable.
28. NBPDCL's Right to Vary Quantities at the time of Award	28.1	NBPDCL reserves the right to increase or decrease the number of items as per BoQ under the SI Contract subject to the limit of - 20% (twenty percent) up to +30% (thirty percent) of the existing number of items as per BoQ (as provided in Form 1 & 2 given in Clause 12), covered under the SI Contract, without any change in the unit prices or other terms and conditions of the SI Contract and the Bid.
29. Letter of Award	29.1	Prior to the expiry of the period of Bid validity, NBPDCL shall notify the successful Bidder, in writing, by issuing the Letter of Award, that its Bid has been accepted.
	29.2	Until the SI Contract is prepared and executed, the notification of award shall constitute a binding contract.
30. Signing of Contract and Contract Performance Security	30.1	Within 30 (thirty) Days of receipt of the Letter of Award, the successful Bidder shall sign the SI Contract.
	30.2	Within 21 (twenty-one) Days of the receipt of Letter of Award from NBPDCL, the Successful Bidder shall furnish the Performance Security, for an amount equivalent to three percent (3%) (or as per CVC guidelines applicable at the time) of the Contract Price (final price after the negotiation (if any)), using for that purpose the format of Performance Security given in Form 1 in Clause 13. Immediately upon furnishing of Performance Security, SI may request the NBPDCL to execute the SI Contract.
	30.3	Failure of the Successful Bidder to submit the above-mentioned Performance Security or sign the SI Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event NBPDCL may award the SI Contract to the next lowest Bidder.

e. Bid Data Sheet

ITB Reference	**A. General Provisions**

1.1

Various IT Initiatives at BSPHCL & its subsidiary companies of Bihar

- BSPHCL
  - Payroll system
- Power distribution companies (SBPDCL & NBPDCL)
  - Billing system under R-APDRP Scheme for town area
  - Billing system for rural area
  - SCADA/DMS in Patna Town under R-APDRP
  - Upgradation of DC/DR ICT infrastructure in IPDS Scheme
  - RT-DAS (Real Time Data Acquisition System) in IPDS scheme
  - Raid-FIR Management system
  - SUVIDHA
  - Network Analysis & Planning
  - Smart meter Pre-Paid Billing
- Transmission company (BSPTCL)
  - ERP (SAP) [HR and Payroll, Financial Management, Operation and Maintenance, Procurement and Material management etc]
  - SAMAST (Scheduling, Accounting, Metering and Settlement of Transactions)
  - SLDC
  - Cyber Security Operation Centre (C-SOC)
- e-Procurement

Brief details of the above mentioned IT initiatives is given below:

The implementation of billing system in the DISCOMs (SBPDCL & NBPDCL) consists of both the post-paid and pre-paid mode. Spot billing is presently being carried out for the post-paid billing system through different private agencies or internally. DISCOMs have initiated the spot billing and collection activity as part of its performance improvement and loss reduction strategy. Further, both the DISCOMs intends to convert the post-paid billing system to pre-paid mode for which prepaid meter installation work is already under progress about 40 lakhs pre-paid smart meters are installed. Detailes of various IT initiative is briefly described below:

i. R-APDRP Project

Ministry of Power, Government of India launched the Restructured Accelerated Power Development and Reforms Programme (R-APDRP) with focus on establishment of base line data, fixation of accountability, reduction of AT&C losses through strengthening of Transmission and Distribution network and adoption of Information Technology during 11th Plan in July 2008.

The R-APDRP (Part - A) IT has been implemented in Total 67 (35+32) towns of SBPDCL and NBPDCL meet the following objectives:

a) Establishing base line data for accurate measurement of losses.

b) Improving customer services which include projects for establishment of IT Infrastructure & deployment of applications like Meter Data Acquisition, GIS electrical asset mapping and consumer indexing, Meter Reading, Billing, Collections, MIS, Energy Audit, New Connection, Disconnection, Customer Care Services, Web self-service etc.

c) The R-APDRP (Part - A) IT has been implemented in 35 towns of SBPDCL and +32 towns of NBPDCL ie. Total 67 towns in Bihar. Under the RAPDRP (Part - A) IT scheme, the following IT Infrastructure has been setup in SBPDCL & NBPDCL along with the associated activities:

1. Data Center at Patna, Bihar.
2. Disaster Recovery Center at Gaya, Bihar.
3. Common Centralized Call Center for both Utilities at Patna.
4. Software for Feeder / DT / HT consumer AMR facility
5. DGPS GIS Survey for Asset mapping & consumer indexing in all towns coming under the R-APDRP scheme
6. Establishment of LAN, MPLS-VPN and other networking in all the identified towns of both the DISCOMs.

7. Solution component mapping with business functions as implemented in RAPDRP towns is given below:

Sl. No.	R-APDRP Modules	Solution Components
1.	Meter Data Acquisition System (MDAS)	Secure, Genus, Analocis, AMI-Tech
2.	Energy Audit	SAP ISU ECC 6.0 (Energy Suits)
3.	New Connection	SAP ISU ECC 6.0
4.	Disconnection and Dismantling	SAP ISU ECC 6.0
5.	Centralized Customer Care Services	Aspect Solution/Asteric
6.	Management Information System (MIS)	SAP ISU ECC 6.0
7.	GIS customer indexing and asset mapping	GE Small World
8.	GIS integrated network analysis module	Mi Power Network Solutions
9.	Web Self Service	Bespoke Solution (.Net Application)
10.	Identity and Access Management	Tivoli/iltimus/PRTG Manage Engine
11.	System Security Requirement	In-Build in Modules
12.	Development of Commercial Database of Consumers	SAP ISU ECC 6.0
13.	Metering	SAP ISU ECC 6.0
14.	Billing	SAP ISU ECC 6.0
15.	Collections	SAP ISU ECC 6.0
16.	Asset Management	SAP ISU ECC 6.0
17.	Maintenance Management	SAP ISU ECC 6.0
18.	Integration Middleware	SAP PI/XI
19.	EMS and NMS	Tivoli/iltimus/PRTG Manage Engine
20.	Consumer Database	Oracle, SQL & Sybase
21.	Document Management System	SAP ISU ECC 6.0
22.	SMS Gateway	Provided by Agency (ACL Mobile Ltd.)
	Collection counters in field offices	Customized developed .Net based application

ii. Area not covered under RAPDRP Project

For areas not covered in R-APDRP Project, SBPDCL & NBPDCL with assistance of National Informatics Centre, Govt. of India has developed the IT Solution stack to cater the business requirements at non-RAPDRP areas. A team from National Informatics Centre (NIC), Govt. of India are supporting for development & maintenance of the IT Solutions along with supporting IT Infrastructure at SBPDCL & NBPDCL for such area. The Application solution stack includes the following:

1. SIETRA – The SIETRA application is web-portal developed in Java platform for Metering, Billing, Collection and Metering Replacement activities at utility. The backend database of ORACLE is used by SIETRA solution.

2. Hargharbijli portal – In-house developed .net based web portal for providing various services to consumers such as new connection, consumer grievance redressal, net metering, civil inspection for PSS construction etc. This portal also includes various reports for SUVIDHA applications. The portal also reflects Data Inputs from various mobile apps. This portal also provides facilty to manage mobile application user base etc.
3. Suvidha application is mobile app for consumers and is used for facilating the consumers for new connection, load / category change, bill payment, grievance redressal, etc.
4. Other Mobile Applications – Discoms are using multiple mobile applications for day-to-day business operations and tasks being used by various employees / meter readers etc. for purposes such as Meter replacement, Billing, Collection and recipt generation, Application processing etc. These are generally for android mobile platforms and DISCOMs intend to be used on other mobile platforms also.
5. Stand Alone Counters – The utility is also running offline and online counters for collecting payments from consumer.
6. The applications are used by 3000 (appx.) users for day-to-day business operations and activities of SBPDCL & NBPDCL

iii. IPDS Project

Further, Ministry of Power, Government of India notified "Integrated Power Development Scheme" (IPDS) on 03rd December 2014 as a Central Sector Scheme to extend financial assistance against capital expenditure to address the gaps in Sub-Transmission and distribution network as well as metering in Urban Areas to supplement the resources of Discoms / Power Department.

Under IPDS scheme, SBPDCL and NBPDCL have upgraded the compute infrastructure at Data center and Disaster recovery Center along with end user devices in IPDS towns. Around 2200 cores and 280 TB of storage in DC and DRC along with VMware server virtualization has additionally been procured. The application software from old R-APDRP compute infra is being migrated in newly procured compute infra. Under IPDS scheme, DISCOMs have also implemented Software Defined Wide Area Network (SD-WAN) in most of the offices for providing secure connectivity in field offices.

iv. Smart Metering Project

SBPDCL & NBPDCL are in advance stage of implementing Advanced Metering Infrastructure, also referred as "Smart Metering" mainly in prepaid mode convertible to postpaid mode and vice-versa.

SBPDCL & NBPDCL has decided to implement Smart Prepaid Metering System for all the consumers across Bihar.

v. Revenue Management System(RMS) under RDSS scheme

Recently SBPDCL & NBPDCL in process of implementing a unified Revenue Management system for all prepaid / postpaid consumers for providing various services to consumers in both the DISCOMS of Bihar namely SBPDCL and NBPDCL, on a Per consumer Per Month basis. The high level scope of work & modules mentioned below:

- Pre-paid & Post Billing with Reconnection and Disconnection
- Spot Billing
- Collection/Recharge
- Disconnection, Dismantling & Reconnection
- New Connection
- Metering
- Web Self-Service (WSS/Web Portal)
- Mobile Applications
- Customer Relationship Management (CRM)
- Management Information System (MIS), Dashboards and Reports
- Contact Center Solution

	• Field Activity Management • Energy Audit • Feeder Information System • Migration of Legacy Data • System Support with Ticketing – Service Desk Portal • Identity and Access Management System – IDAMS • Document Management System • Setup of ICT (Information & Communication Technology) Infra-Structure at DC (Data Centre) & DRC(Disaster Recovery Centre) • Setting up Helpdesk • Roll-out & Training of the modules and Business Process • Facility Management Services (FMS) for 5 years post Go-live **vi. ERP Implementation in BSPTCL** ERP Modules : • HR and Payroll • Financial Management • File Life Cycle Management • Document Management System • Project and Planning • Operation and Maintenance • Procurement and Material management Technologies: SAP HANA, Fiori, Hosted in Bihar Sate Data Centre **vii.** SAMAST (Scheduling, Accounting, Metering and Settlement of Transactions) in BSPTCL This system provides various services as listed below: a. Open Access : Short-term Open Access, Registrations, Inter/Intra-state applications and approvals. b. Scheduling : Declaration /Entitlement/Requisitions/Schedules, Real-time revisions and Implemented schedules. c. Accounting : Intra-state energy accounting and Transmission loss. **d.** Settlement : Intra-state deviation settlement accounts. **viii.** SLDC (Sate Load Dispatch Centre) in BSPTCL This system provides real-time view of power flow in state. **ix.** C-SOC in BSPTCL This system provides real-time cyber security of various IT systems implemented in BSPTCL. **x. Other Miscellaneous Solutions** 1. SCADA –The SBPDCL & NBPDCL has implemented the Supervisory control and data acquisition (SCADA) system under the R-APDRP project at Patna. The SCADA Solution is implemented by Shiners electric India private limited. 2. E-procurement - The SBPDCL & NBPDCL utilize the e-procurement portal hosted by the Beltron for its procurement task https://eproc2.bihar.gov.in 3. Other Applications – Various other applications utilized by the Power Companies of Bihar include the State Load Dispatch Center (SLDC), Bihar Holding Company Portal, Urja Mirta, PFC Portal, Existing Payroll Solution of Bihar Power Sector Companies, Tele Software for Finance, RT-DAS, RAID & FIR MANAGEMENT SYSTEM (RFMS) etc. 4. Future Upcoming applications- Under RDSS scheme DISCOMS is in process of implementation of SCADA/DMS, ERP System.
2.2	Bidding against RFP shall be conducted through/ with Electronic –Procurement (e- Procurement/ e-Tendering) System. NBPDCL shall use the following Electronic-Procurement system to manage this Request for Proposal (RFP) process: **[[https://eproc2.bihar.gov.in]]** Registration with e-procurement and online bid submission, bidder(s) may contact help desk of e-Procurement system at the following address: mjunction services limited RJ Complex, 2nd Floor, Canara Bank Campus, Khajpura, Ashiana Road, P.S. - Shastri Nagar, Patna 800 014, Bihar at email-

<table>
<tr><td></td><td>eproc2support@bihar.gov.in, Toll Free Number: 1800 572 6571 website- https://eproc2.bihar.gov.in.
The electronic-procurement system shall be used to manage the following part of the RFP process:
[e.g., issuing RFP, corrigendum/ addendums, submissions of Proposals, opening of Proposals etc.]
To aid and facilitate the Bidders on e-Procurement/ e-Tendering process a detailed manual on the same titled Bidder Help Manual for e-Bidding has been provided annexed to the Bid Data Sheet as Annexure I (BDS). The same may be utilized by the Bidders.</td></tr>
<tr><td>2.2.2</td><td>address: mjunction services limited RJ Complex, 2nd Floor, Canara Bank Campus, Khajpura, Ashiana Road, P.S. - Shastri Nagar, Patna 800 014, Bihar at email- eproc2support@bihar.gov.in, Toll Free Number: 1800 572 6571 website- https://eproc2.bihar.gov.in</td></tr>
<tr><td>2.3</td><td>The name of the Contract is: Chief Engineer (P&E), NBPDCL
e-mail: rdssit.bihar@gmail.com</td></tr>
<tr><td>2.4</td><td>Standard brief regarding detail of existing systems relevant to the proposed System implementation Project: Brief of IT application is provided in BDS 1.1, bidder needs to do integration with existing and upcoming software applications. The Bidder shall be responsible for getting related data from related applications to prepare FAR records company wise. Also Bidder shall be also responsible for giving FAR details to other software systems.</td></tr>
<tr><td>2.6</td><td>A Pre-Bid Meeting will be held as per the details below.

[Date of Pre-Bid Meeting: As per NIT
Address…Conference haal, Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)…...
E-mail: rdssit.bihar@gmail.com
Contact person/Meeting coordinator: Chief Engineer (P&E), NBPDCL</td></tr>
<tr><td>2.8</td><td>Format for Sending Query to Utility

[Query may be sent in soft(XLS) copy (Scanned copy will not be accepted) to the Nodal Officer of NBPDCL, at the below-mentioned address AND/ OR via email to E-mail ID(rdssit.bihar@gmail.com)]
[Reference No.]

From:
[Address of the Bidder]
[Telephone No., Fax No., Email]
[Date]

To:
Chief Engineer (P&E), NBPDCL
,Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)
Sub: Query for NIT:_____.
Ref: [insert Tender Details].

Dear Sir/ Madam,
Please find below our query with respect to the RFP subject to the terms and conditions therein:
<table>
<tr><th>S. No.</th><th>Reference Clause No.</th><th>Page No.</th><th>Query</th><th>Justification</th></tr>
<tr><td>1.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
</table>

Thanking you,
Yours Sincerely,
[Insert Signature here]
[Insert Name here]
[Insert Designation here]

B. Preparation of Proposals

10.1 **Document Checklist and List of Forms**

S. No.	Document	RFP Clause/Section Reference
1.	Tender Fee	1, 2
2.	List of Consortium Members and Subcontractor(s) (as applicable) as per the format prescribed in Form 1	11
3.	Bidder Information as per the format prescribed in Form 11	11
4.	Project Implementation Plan as per format provided in Form 6	11
5.	Curriculum Vitae of key personnel as per format provided in Form 9 and Form 10	11
6.	Bid Security in the form of Demand Draft or Bank Guarantee as per format prescribed in Form 5	11
7.	Covering Letter for Submission of Bid by Sole Bidder / Lead Consortium Member as per format prescribed in Form 5	11
8.	Consortium Agreement Format entered amongst both Members of the Bidding Consortium as per format prescribed in Form 1	11
9.	Power of Attorney by Bidder – 2nd in favour of Bidder-Lead as per format prescribed in Form 2	11
10.	Power of Attorney by Bidder-Lead/ Sole Bidder authorizing an Individual Designated Representative for the Consortium/ Bidder as per the format prescribed in Form 3	11
11.	Letter of Consent by each Consortium Member reviewing each element of the Bid as per format prescribed in Form 7	11
12.	**For SI-Lead in case of Consortium Bidding / Sole Bidder Experience and other related documents** against each clause of Eligibility and Qualification Requirements **[Refer Clause 4]** (as per the format prescribed in Form 12 given in clause 11)	4, 11
14.	List of Material and Services as per format provided in Form 13	11	
15.	Table of Compliance as per format provided in Form 8	11	
16.	Financial Bid as per format provided in Form 1 given in Clause 12	12	
17.	Performance Security as per the format prescribed in Form 1 given in Clause 13	13	
18.	Letter of Award as per the format prescribed in Form 2 given in Clause 13	13	
19.	Copy of this RFP with sign and official seal on every page	1 to 13	
20.	Format for Sending Query to Utility for clarification	2	

12.1	The Bid shall remain valid until i.e. up to *180 days* from the Bid Submission Deadline specified in ITB 18, as may be extended by the Utility.
12.2	Currency and the amount of Bid Security to be furnished by the Bidder is: As per NIT Notice in INR
12.3(a)	Banks by whom Bank Guarantee is required to be issued: [… Public Sector Bank/Schedule commercial bank …]
12.3(b)	Bid Security may be furnished in other forms mentioned below: EMD is mandatory to be paid through Bank Guarantee or online mode in favour "Senior Manager (F&A), North Bihar Power Distribution Company Limited" payable at Patna. EMD and hard copy of receipt of BSEDCL processing fee & tender cost must be submitted within specified time failing which bid of the firm shall be summarily rejected. The department does not take any responsibility for the delay / Non submission of Tender / Non Reconciliation of online Payment caused due to Non- availability of Internet Connection, Network Traffic/ Holidays or any other reason. Bank details for NBPDCL for issuing EMD is given below: Name-NBPDCL A/C 0352101042039 IFSC CNRB 000 0352 CANARA BANK SOUTH GANDHI MAIDAN, PATNA
14.1	Clarifications may be requested no later than [*15*] Days prior to the Bid Submission Deadline. Request to be sent at: Chief Engineer (P&E), NBPDCL ,Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar) E-Mail: rdssit.bihar@gmail.com
16.13	Number of years: […*specify* …]
C. Submission, Opening and Evaluation	
18.3	Bidder shall provide the following document in original/ hard copy: Power of Attorney(attested/original), Bank Guarantee for EMD (Original)/copy of online EMD payment
18.4	The following documents shall be submitted in original: -Bid Security/EMD in original if submitting in the form of Bank Guarantee - Bid Security/EMD copy if paid online -Power of attorney copy duly attested
18.6	Details to be marked on the sealed envelope: [*mention RFP no. and details including RFP Name, Bid Submission Deadline, name of the Lead Consortium Member/ Sole Bidder submitting the Bid*] Sealed Envelope(s) to be addressed to: Chief Engineer (P&E), NBPDCL, Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar) e-mail: rdssit.bihar@gmail.com
18.10	The Bid Submission Deadline: As per NIT Notice
20.1	The Technical Bids/ Proposals shall be opened as indicated below: The opening shall take place at: [NBPDCL

	Address …Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)] Date: As per NIIT Notice
Annexure (BDS)	
Bidder Help Manual for E-Bidding **HELP LINE TO VENDORS**	The complete bidding documents including technical specifications are available at website https://eproc2.bihar.gov.in for the benefit of prospective bidder(s). Prospective bidder(s) may obtain further information from the office of rdssit.bihar@gmail.com, between 10:00 hours and 18:00 hours on working days. For registration with e-procurement and online bid submission, bidder(s) may contact help desk of e-Procurement system at the following address: mjunction services limited RJ Complex, 2nd Floor, Canara Bank Campus, Khajpura, Ashiana Road, P.S. - Shastri Nagar, Patna 800 014, Bihar at email- eproc2support@bihar.gov.in, Toll Free Number: 1800 572 6571 website- https://eproc2.bihar.gov.in. The bidder(s) must pay online Rs.23600 towards the Cost of Tender & Bid Processing Fee. Also, the Bank Guarantee / Demand Draft of Rs. 2,75,38,493/- only need to be paid as Bid Security (Earnest Money Deposit) in favour of "Senior Manager (F&A), North Bihar Power Distribution Company Limited" Patna" Payable at Patna. The Bank Guarantee towards the Bid Security (EMD) from a Public Sector Bank must be submitted to Designated Officer of The Employer Chief Engineer (P&E), NBPDCL, Vidyut Bhawan Patna without fail on or before as per NIIT Notice failing which the bid shall be summarily rejected. The procuring authority shall have their digital certificate(s) issued through controller of certifying authorities nominated by Government of India in order to facilitate the work flow. A Class III Digital Certificate is issued upon receipt of mandatory identity proofs along with an application form. Only upon the receipt of the required documents, a Digital Certificate can be issued. The bidder(s) shall need to separately register on the e- Procurement portal (https://eproc2.bihar.gov.in.). a. The interested online bidder(s) shall require signing their bids online using Class III - Digital Certificate only. b. The id for a particular tender can be submitted during the online bid submission stage only using the Digital Signature that is used to encrypt the data and sign the hash during the Online bid preparation and Hash submission stage. c. In case, during the process of a particular tender, the bidder loses his digital signature because of any problem (such as misplacement, virus attack, hardware problem, operating system problem, etc.); the bidder will not be able to submit bid online. d. The digital signature issued to the authorized user of a partnership firm/private limited company/ public limited company/ JV and used for online bidding will be considered as equivalent to a no-objection certificate / power of attorney to that user. e. Unless the digital signature is revoked, it will be assumed to represent adequate authority of the specific individual to bid on behalf of the firm for online tenders as per Information Technology Act 2000. This authorized user will be required to obtain a digital signature. The Digital signature executed through the use of Digital Certificate of this authorized user will be binding on the firm. It shall be the responsibility of management/ partners of the concerned firm to inform the certifying authority, if the authorized user changes, and apply for a fresh Digital Certificate for the new authorized user.

3. Overview of the Scope of Work

3.1 Introduction

The erstwhile Bihar State Electricity Board ('Board' or 'BSEB') was originally constituted on 1st April 1958 under Section 5 of the Electricity (Supply) Act, 1948 and was engaged in the management of electricity generation,

transmission, distribution, and related activities in the State of Bihar. Under the 'Bihar State Electricity Reforms Transfer Scheme, 2012', the BESB was unbundled into five Companies, viz., Bihar State Power (Holding) Company Limited (BSPHCL), Bihar State Power Transmission Company Limited (BSPTCL), Bihar State Power Generation Company Limited (BSPGCL), South Bihar Power Distribution Company Limited (SBPDCL), and North Bihar Power Distribution Company Limited (NBPDCL), with effect from 1st November 2012 vide Notification No. 17 dated 30th October 2012.

- Bihar State Power Holding Company Limited (BSPHCL): BSPHCL is the Apex Holding Company that owns the share of the other four companies i.e., Bihar State Power Generation Company Limited, Bihar State Power Transmission Company Limited, South Bihar Power Distribution Company Limited and North Bihar Power Distribution Company Limited.
- Bihar State Power Generation Company Limited (BSPGCL): BSPGCL is the Generating Company to which the Generating Undertakings of the Board have been transferred in accordance with this scheme.
- Bihar State Power Transmission Company Limited (BSPTCL): BSPTCL is the Transmission Company to which the Transmission Undertakings of the Board have been transferred in accordance with this scheme. BSPTCL is having 5 zones, 15 Circles, 31 Divisions, 155 Sub-divisions (GSS).
- South Bihar Power Distribution Company Limited (SBPDCL) and North Bihar Power Distribution Company Limited (NBPDCL): SBPDCL and NBPDCL are the Distribution Companies to which the Distribution Undertakings of the Board have been transferred in accordance with this scheme. Brief details of SBPDCL & NBPDCL is given below:

	SBPDCL as whole				NBPDCL as whole			
Sl. No.	Name of Circle	No. of Division	No. of Sub Divisions	No. of Sections	Name of Circle	No. of Division	No. of Sub Divisions	No. of Sections
1	Ara	3	12	41	Begusarai	3	11	37
2	Aurangabad	5	13	42	Chapra	6	21	72
3	Bhagalpur	5	12	39	Darbhanga	6	20	61
4	Biharsarif	6	16	54	Kishanganj	4	10	35
5	Gaya	3	9	31	Motihari	5	17	57
6	Jamui	2	6	21	Muzaffarpur	7	21	77
7	Munger	2	7	24	Purnea	4	14	47
8	Patna	5	14	35	Saharsa	6	15	55
9	Pesu East	6	14	29	Samastipur	5	19	61
10	Pesu West	7	15	33				
11	Sasaram	3	12	39				
	TOTAL	**47**	**130**	**380**		**46**	**148**	**502**

Tentative details of BSPTCL offices across Bihar state is summarized below:

Zone	**Circle**	**Division**	**Sub-Division**	Other offices Includes other subdivisions of Power grid, BGCL,NTPC where BSPTCL assets are deployed
Patna	Patna (East)	2	9	3
	Patna (West)	2	9	3
	Bhojpur	2	12	3
Gaya	Gaya	3	13	3
	Dehri On Sone	2	13	1
	Biharsharif	2	10	3
Bhagalpur	Bhagalpur	2	9	3
	Begusarai	2	11	3
Koshi	Purnea	2	14	2
	Darbhanga	2	12	1
	Koshi (Madhepura)	2	11	1
Muzaffarpur	Muzaffarpur	2	9	3

	Vaishali (Hajipur)	2	12	0
	Motihari	2	13	1
	Saran (Chapra)	2	9	1
Zone -5	Circle - 15	31	166	31

Note: The mentioned count of Circles, Divisions, Sub-Divisions, Sections and other offices may vary, bidder will carry out the survey to identify the exact count of geographical area

3.2 Challenges and expected solution

Power companies face significant challenges in managing and maintaining assets, which directly impact their ability to deliver quality power and efficient services to consumers. Some of the key challenges are mentioned below:

- Lack of Accurate Asset Information: The absence of correct and updated asset data creates difficulties in planning and delivering reliable services.
- Absence of an Asset Management System: Managing vast and complex grid infrastructures, including transmission lines, substations, distribution networks, and transformers, is highly challenging without a centralized asset management system.
- Lack of a Maintenance Management System: Ensuring the upkeep and reliability of critical infrastructure such as transmission lines, substations, and distribution transformers without a structured maintenance system leads to operational inefficiencies.
- Absence of GIS-Based Asset Mapping: The lack of a Geographic Information System (GIS) makes monitoring, planning, and managing infrastructure more difficult, leading to inefficiencies in system operations.
- Challenges in Asset Performance Optimization: Without an effective maintenance management system, tracking and optimizing asset performance becomes complex and less efficient.
- Difficulties in Managing Electrical Network Infrastructure: Maintaining and upgrading key infrastructure components, such as grid substations (GSS), power substations (PSS), feeders, transmission lines, and towers, is highly challenging without a centralized digital system.
- Complexity in Asset Lifecycle Management: Managing the entire lifecycle of assets from acquisition and deployment to operation, replacement, or disposal in a cost-effective manner requires an integrated system, which is currently lacking.
- Financial Compliance Challenges: Accurate asset valuation and ensuring compliance with financial regulations become difficult in the absence of a centralized asset management system.

Implementing a robust asset management, maintenance management and GIS-based system can help address these challenges, improve operational efficiency, and enhance service delivery.

NBPDCL wants to develop comprehensive Fixed Assets Register and related systems for all its assets deployed across all power companies along with efficient maintenance management of these assets to ensure the efficient, effective, and sustainable management of physical assets throughout their lifecycle. Main objectives of NBPDCL for developing comprehensive Fixed Assets Register and related systems are mentioned below:

i. Ensure efficiently asset lifecycle management.
ii. Ensure correct financial reporting for fixed assets values, including depreciation, capital expenditures, and asset disposal, in line with accounting standards.
iii. Efficiently asset maintenance and control.
iv. Enable data-driven decisions by providing accurate insights into asset performance and health.
v. Operational Transparency.
vi. Maximize equipment reliability, extend asset lifespan, minimize downtime.

3.3 High level view of Solution Components

To achieve above objectives, it is envisaged that first all asset spread across the Bihar state in different power companies needs to be identified through physical asset survey by visiting different locations. For asset identification & verification, it is suggested that bidder needs to develop mobile apps and related systems to avoid any data entry related issues and capture all parameters of asset. Once asset are identified with details of attributes and conditions, agency needs to setup/implement a comprehensive centralized asset management system including inventory management in stores and do valuation of assets with codification, generation of QR/bar code for critical major assets. After identification & preparation fixed assets register, all identified assets are available online centrally in the system, now any maintenance related activities of assets can be initiated/planned. For this purpose, agency needs to setup/implement a comprehensive centralized asset maintenance management system covering all activities required to maintenance related work. Simultaneously, agency also needs to setup/implement a comprehensive centralized GIS

system for viewing different aspects of the assets for better visualization, pattern/relationships recognition in a geographic context. The components wise brief summary of the same is given below:

Envisaged functional solution components

Physical survey of all Assets with the help of mobile app	Prepare Fixed Assets Register	Develop & Implement -Asset Management Software, Store/Inventory Management Software, Maintenance Management Software -Geographic Information System (GIS) for better visualization, pattern/relationships recognition in a geographic context	Supply & Implement Data Centre ICT Infrastructure
Integrations with external systems			
Support & Maintenance for 5 Years			

Bird eye view of Solution Components: Asset Survey & Preparation of Fixed Asset Register (FAR)

1.Physical survey & verification of all assets	**2.Preparation of Fixed Asset Register**

• All assets of Transmission/ Distribution System of electrical network
  • Grid Sub-Stations (GSS)
  • 220 KV lines
  • 132 KV lines
  • Power Sub-Stations(PSS)
  • 33KV lines
  • 11KV lines
  • DT etc.
• Lands
• Office Buildings
• Residential colonies
• Plant and Machinery
• Vehicles
• Furniture & Fixtures
• Office Equipment,
• Stores etc.
	• Mobile app for survey & inspections
	• Asset survey (site visits, condition survey, operational status, condition assessment, geolocation)
	• Asset identification (generation of asset codes & printing (QR/Bar Code))
	• Asset master data management
	• Asset categorization (grouping by asset type, location, category)
	• Asset valuation and financial review (cost verification, depreciation calculation, market value assessment, reconciliation with Financial Statements)
	• Preparation of fixed asset register
	• Maintenance of the fixed asset register
	• Workflow based asset addition/modification
	• Asset changes tracking
	• Asset disposal records management
	• Link assets to vendor details

3.Asset & Maintenance Management Software	**4.Store Management Software**
• Mobile app & related application for maintenance work • Maintenance management (preventive, corrective, predictive etc.) • Maintenance work order management (creation and tracking of maintenance repairs, inspections) • Creating, assigning, and tracking work orders for scheduled and unscheduled maintenance tasks • Maintenance log management • Assign maintenance tasks to personnel	• Mobile app & related application for store work • Stores inventory management (receipt/issue, inter-store transfer, return, disposal, inventory verification) • Inventory status tracking (available, scrapped, obsolete, under repair, etc.) • Stock monitoring (stock levels, consumption patterns) • Stock Optimization • Alerts stock replenishment based on reorder levels and consumption rates • Inventory valuation (FIFO, LIFO etc.)

• Spare parts management for maintenance work • Automated triggers for maintenance alerts based on schedules • Maintain vendor-specific warranty information • Asset condition monitoring • Asset performance management • Maintenance alerts based on schedules • Asset lifecycle management (Installation, Operational Monitoring, End-of-Life (EOL) Management) • Asset maintenance service history • Maintenance reporting (performance, consumption etc.)	• Inventory Audit • Reporting (stock status, consumption, stock-outs, age analysis)
5.Geographic Information System (GIS) software application	**6.Data Center /Disaster Recovery (DC/DR) ICT Infrastructure to host system**
• Asset Location Mapping on MAP, Creation of different layers • Track the assets in relation to geographic data for effective routine maintenance and emergency responses • Geotagging assets like HT lines, GSS, PSS, DT, Poles, Offices etc. to ensure accurate location data • Prepare Single Line Diagram (SLD) • Regular updation of GIS system as per actual change • Overlaying Data on Maps (operational data, fault locations, weather conditions) • Procurement of GIS Map • GPS-Based Tracking	• Supply, installation & Maintenance of Servers, Storage, Networking devices, System Software (OS, Backup), Database etc. • Supply, installation, customization of Application software

7.Support & Maintenance	**8.Integrations**
• Field Support at Division level • Support & Maintenance for Application software (Asset & Maintenance Management, GIS Software) • Support & Maintenance for Data Centre Infrastructure • Helpdesk	External Integration • BSPTCL SAP ERP & Other systems • DISCOMs existing IT systems like Billing, Tally-Prime etc. • Future ERP and other IT systems

Agency needs to do survey, verification and valuation of all the assets of SBPDCL, NBPDCL, BSPTCL, BSPGCL & BSPHCL. The tentative list of assets of power companies of Bihar and related software system is given below:

S.No.	Item	UoM	SBPDCL	NBPDCL	BSPTCL	BSPGCL & BSPHCL
A	-Collection of attributes of all asset through field survey and development, codification, mapping & indexing, valuation etc. -Data Collection, Data Entry inclusion of travel/stay/number of trips as applicable -Additional scope of asset survey may be included as per actual requirements as per discovered rate		**Estimated Quantity**			
1	33/11 kV substations OR 220/132 KV, 132/33 KV substations capturing all devices, solutions, systems, layout etc.	Nos	617	643	170	
2	HT (33 kV) /HT (220 KV , 132 KV) capturing overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	CKms	9,041	9,748	20,393	

3	HT (11 kV) overhead lines/underground cables capturing associated line equipment such as Poles, RMUs, Distribution Transformers, Capacitors etc.	CKms	65,937	78,834		
4	DT capturing all details	Nos	1,51,376	1,97,892		
5	QR Code printing including complete solution required for QR code generation, printer etc.	Nos	1,53,227	1,99,821	652	
6	Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through survey for GIS application and tagging of assets connected etc.	Per Town/GSS	64	73	170	
7	Stores capturing all items present	Nos	27	31	10	
8	Number of offices capturing all details	Per office	245	360	206	108

Other Envisage components

S.No.	Items
B	**Software Applications**
i.	Supply/Develop, customise/configure, install and maintain proposed enterprise asset & Maintenance management software application System for all users.
ii.	Supply/Develop, customise/configure, install and maintain GIS software application System for all users.
C	**Supply & implement Data Centre & DR centre infrastructure(Servers, Storage, Networking Device, Security device, System software etc.) to host the proposed software applications**
D	**Data entry of all assets in proposed System to maintain the same in future.**
E	**Prepare Fixed asset register (FAR)**
F	**Training and Change Management**
G	**Support & Maintenance**
i.	Support & Maintenance cost for Application software
ii.	Support & Maintenance cost for Data Centre Infrastructure
iii.	Helpdesk cost

3.4 Tentative Scope for Fixed Asset Register

Objective is to digitize asset records by identifying all the assets of the power companies and prepare the central database of the assets with all attributes. After capturing the asset detail do codification, valuation of assets and maintain it. The tentative scope of work is listed below:

1. The asset survey and verification works shall be done using an android based mobile application. The mobile app and other related system shall be designed and developed by the Bidder. The mobile application should be capable of working both in online and offline mode (when out of network area). The application should be able to synchronise the captured asset survey data captured during offline mode automatically to the server as soon as it finds network connectivity. The mobile application shall provide standardized digital interface to collect asset data consistently. Implement data validation and quality control measures to ensure accuracy and consistency. Mobile app shall have photo capture functionality to document infrastructure details.
2. Bidder shall assign trained personnel with necessary GPS instrument and Mobile devices with application to conduct a survey.
3. Bidder shall ensure the personnel are knowledgeable about electrical Transmission & distribution systems and data collection procedures.
4. Bidder shall validate the accuracy of collected data through field verification and cross-referencing with existing records, if any.
5. Bidder shall collect details of internal arrangement of all GSS, PSS, Distribution Transformer stations, cables route diagrams in terms of single line diagrams and kept in database which should be retrievable by clicking on the GIS map where these entities are digitized as points/polygons on the ring mains/feeders.
6. The bidder shall ensure that the survey includes comprehensive and detailed attributes for each asset. These attributes shall capture all necessary information required for effective asset tracking, maintenance, and financial reporting. The attributes shall cover essential details such as asset identification, acquisition data, operational status, condition, location, depreciation methods and financial information such as supporting documents like invoices, commissioning certificate, warranty papers, photos etc.. The system shall be

designed to accommodate updates and modifications as required, ensuring that the data remains accurate, up-to-date, and aligned with operational and regulatory requirements.

7. The bidder shall document all survey procedures, guidelines, methodologies, challenges, and any exceptions encountered during the asset survey process. Additionally, the bidder shall ensure that all data collected from field surveys is organized and easily retrievable,
8. The bidder shall provide an Android-based mobile application with an intuitive user interface, ensuring easy data entry, navigation, and asset identification, minimizing the learning curve for surveyors.
9. The mobile app will allow surveyors to capture real-time asset details such as type, location, condition, and operational status, and generate unique asset codes along with QR codes for efficient tracking and identification.
10. The mobile app will be fully integrated with the centralized asset database, ensuring real-time synchronization for accurate and up-to-date information, while regularly backing up asset data to prevent data loss.
11. The bidder will implement a workflow-based process for managing asset additions, modifications, and deletions to maintain up-to-date asset records, with all survey data captured and verified through the mobile app.
12. The bidder shall develop and assign unique asset identification numbers incorporating category & key attributes to all fixed assets, ensuring traceability using QR codes for easy identification, maintenance and physical verification.
13. The bidder shall ensure that all assets, both movable and immovable, are categorized based on their type, location, operational status, condition and usage. The bidder shall create a structured and accurate asset master data system, including asset name, description, acquisition date, condition, and location, and ensure that all assets are properly verified, classified, and tagged (e.g., with QR codes) for efficient tracking, maintenance planning, and future updates.
14. The bidder shall ensure that adequate training is provided to all survey personnel, enabling proficiency in the use of mobile devices, data collection procedures, and asset tagging techniques. It shall be ensured that all personnel conducting surveys possess the necessary knowledge of electrical transmission and distribution systems, thereby safeguarding the accuracy and integrity of the collected data. Furthermore, the bidder shall ensure that survey personnel are equipped with the required tools, including mobile devices, GPS instruments, and asset tagging materials, to facilitate the effective completion of the survey in compliance with relevant industry standards.
15. The bidder shall establish a comprehensive data validation and quality control process to ensure that only approved, accurate, and verified data is entered into the final asset management system. This includes reviewing and cross-referencing collected data with existing records, procurement, and financial information to validate its integrity. All data must undergo necessary checks, including field verification, consistent data entry procedures, and approval by competent authorities, before being finalized. The bidder shall also implement a mechanism for flagging rejected data for re-survey and provide regular tracking and reporting to ensure completeness and avoid oversight.
16. The bidder shall implement a process to identify and resolve discrepancies or inaccuracies in asset data, with clear corrective actions tracked throughout the process. This includes flagging and addressing errors during field data collection.
17. The bidder shall establish a feedback mechanism for field surveyors to report issues encountered during data collection, ensuring continuous improvement. Additionally, a feedback loop will be provided for BSPHCL to report any issues with the mobile app or asset management system, with prompt resolution processes in place.
18. The bidder shall provide tools to track and manage asset data in real-time, ensuring that all changes are updated in the system. Detailed records of field survey activities must be maintained for accountability and traceability.
19. The bidder shall ensure proper storage, backup, and security of all survey-related data and documents. This includes preventing data loss, ensuring easy retrieval, and allowing authorized personnel secure access for future reference, audits, and reporting.
20. The bidder shall create a plan for asset tagging and ensure tags are securely affixed in easily scannable locations on the assets.
21. The bidder shall provide regular updates and comprehensive reports on the asset survey, detailing the status, condition, and location of all surveyed assets. A continuous monitoring mechanism will be implemented to ensure timely completion of the survey within the stipulated timeline.
22. The bidder shall ensure all survey processes, data entry, and asset tagging align with regulatory bodies' asset management standards, security, and operational policies, as well as relevant industry standards (e.g., ISO 55000 series), to prevent unauthorized access or tampering.
23. The bidder shall ensure that all asset modifications or updates are logged and time-stamped, maintaining a clear audit trail of changes.
24. The bidder shall establish a process to identify and report any unsafe or non-compliant assets during the survey, ensuring that corrective actions are taken immediately.
25. The bidder shall provide a detailed plan for the long-term maintenance and updating of the asset master data system after the initial survey.
26. The bidder shall provide necessary training for key personnel of BSPHCL and its subsidiaries on how to manage and analyze the asset survey data in the centralized asset management system.
27. Establish a centralized database to store and manage the asset survey data.
28. Regularly update the database with new asset information, asset additions, and changes in the network.

29. Bidder should provide the mechanism to verify, validate, approve, and reject the surveyed data through web-based Application.
30. Only verified and approved data shall be pushed to final production data base and rejected data shall be taken into consideration for re-survey.
31. Bidder shall maintain detailed documentation of the survey methodologies, procedures, and data collection techniques employed.
32. Bidder shall create a record of any deviations, challenges, or exceptions encountered during the survey process.
33. Bidder shall document field observations, comments, and recommendations for future reference.
34. Preserve all data and survey-related documents in a secure and organized manner for easy retrieval.
35. Fixed Assets consists of land, Buildings, Plant and Machinery, Power Distribution System of electrical network of 33KV lines, 11KV lines, Low Tension lines, Sub-Stations, Vehicles, Furniture & Fixtures and Office Equipment etc. distributed across the geographic area of operation of the power companies within the State of Bihar.
36. Physical survey & verification of fixed assets, to digitally prepare scaled Single Line Diagram (SLD) of electrical Transmission & distribution network on the geographical map, to prepare fixed assets register and to reconcile the value of assets in fixed asset register with that of the value in books of accounts. The assets are distributed across the approximately 94,163 Sq. km. of geographic area of operation of the power companies within the State of Bihar.
37. Physical survey & verification of assets:
    i. Conduct physical verification, survey of all fixed assets.
    ii. Fixed Assets consists of land, Buildings, Plant and Machinery, power transmission system of electrical network of 400/220/132KV lines, Grid Sub- stations, Cables & Networks, Vehicles, Hydraulic Works, Power Distribution System of electrical network of 33KV lines, 11KV lines, Low Tension lines, Sub-Stations, Vehicles, Furniture & Fixtures and Office Equipment distributed across the geographic area of operation of the companies within the State of Bihar. It is advised to the bidders to familiarize themselves with the geographic spread of the operation of BSPHCL and it's subsidiary companies SBPDCL, NBPDCL, BSPTCL & BSPGCL and shall assess the quantum of work accordingly.
    iii. The fixed assets include all Grid Sub- Stations assets, 33KV line network,11KV line network, HT poles, all classes of installed transformers, feeder/DT metering equipment installed on electricity distribution network and any other class of distribution asset installed at electricity distribution network
    iv. Distribution assets will cover all the assets relating to distribution of power such as Power &distribution transformers, distribution lines including underground lines & cables, conductor, insulator, poles, cross arms, towers, assets related to the HT Network, Metering Equipment etc. up-to DT.
    v. Capture land and building details, including area and dimensions.
    vi. All fixed assets shall be assigned unique asset identification numbers (often through barcodes, RFID tags, or QR codes), which will help in tracking and identifying the assets. Each asset should be physically tagged and recorded in the system.
    vii. All assets like distribution transformers, poles, and substations are geotagged to ensure accurate location data.
    viii. Every asset (e.g., transformers, circuit breakers, poles, meters) is tagged with unique identification numbers.
    ix. Prepare a scaled and digital Single Line Diagram (SLD) on a geographical map.

38. Preparation of Fixed Asset Register: Compile voltage-wise fixed asset and depreciation registers. Ensure all assets include installation/commissioning year for easy year-wise register creation. The Voltage wise segregation of fixed assets i.e. classification of fixed assets between the different KV network and depreciation thereon as required by Bihar Electricity Regulatory Commission (B.E.R.C.) in the tariff petition, shall also be incorporated in the fixed assets register along with the compliance of IND AS-16 (Property, Plant & Equipment) and schedule-III of companies Act-2013.
39. Determination of Historical Cost: Develop and approve a methodology to determine historical cost. Compile and assess asset values using the approved methodology. Reconcile asset value with books of accounts. The asset categories should clearly depicted the Direct Cost, Capitalized Expenditure and Accumulated Depreciation on individual asset basis. Wherever such details/ information is not available with reference to the financial records of the year, the capitalization value will need to be assigned/apportioned based on best available resources. Capitalization value means value indicated in Financial Statements.
40. Development of Methodology and Updation: Create formats to continuously update and reconcile the fixed asset register with accounting books. Prepare reports from each circle on physical verification of assets created/modified/shifted since the last verification.
41. Scope of Fixed Assets:
    i. Includes all grid sub-station assets, power transmission system of electrical network of 400/220/132KV lines, Grid Sub- stations, Cables & Networks, Vehicles, Hydraulic Works, PSS Assets, 33KV line, 11KV line, poles, transformers, feeder/DT metering equipment, and other distribution assets.

ii. Distribution assets cover transformers, distribution lines, cables, conductor, insulators, PCC poles, cross arms, lattice towers, consumer connection assets, and metering equipment etc..
iii. Civil structures include O&M and Non-O&M buildings, auxiliary/ancillary buildings, and residential colonies.
iv. Identifying land extent in acreage/hectares/square meters, with land records reference.

42. Verify and list furniture, office equipment, and electronic items like computers, peripherals, photocopiers, and other office machines. Subcategorize movable vehicles into heavy and light vehicles (e.g., cars, trucks, dumpers).
43. Physical Verification Process: Include details for all asset classes, even those not specifically mentioned in the scope. Obtain physical verification reports with counter signatures from competent authorities for acceptance.
44. Single Line Diagram (SLD) Preparation: Develop a digital, scalable SLD showing HT, LT, and spur lines, substations, and transformers (both power and distribution).
45. SLD shall be digital, i.e., in the soft form and can be editable.
46. SLD shall be scaled properly and shall indicate length, material and size of the HT and spur line in Kilometres, location of Sub-stations, Power Transformers with its ratings, Distribution transformer with its ratings.
47. Fixed Asset Identification: Create a coding scheme for fixed asset identification numbers that contain key asset attributes for physical verification.
48. Half-yearly/Annually updated FAR
49. Compliance: Ensure the fixed asset register complies with the requirements of the Bihar Electricity Regulatory Commission (B.E.R.C.) and other regulatory frameworks. The successful bidder shall advise & maintain the FAR compliant with the requirement of BERC and other regulatory frameworks and shall make necessary changes in the methodology, formats, data type, data category etc. after the approval of NBPDCL and other power companies.
50. Fixed Assets Record shall be compiled conforming to the requirements of all relevant Acts/Regulations and shall provide complete particulars of the assets giving details with regard to costs with segregation of major cost components, description of assets, quantities, location, month & particular of acquisition/ put to use, depreciation and other critical information in relation to conduct and management. Care should be exercised to establish that the record compiled shall be satisfactory in context to the prevailing accounting standard. Assets Registers will be prepared organization unit wise i.e. Circle/Division, Sub-division etc.) as well as company wise as a whole.
51. The Asset Registers shall be prepared from the base financial year to the defined cut-off date, separately for each operational unit (e.g., Circle/Division) as well as for the utility as a whole, to the satisfaction of the utility management. The value of assets transferred under the applicable asset transfer scheme as on the notified transfer date shall be determined using a suitable valuation methodology and reconciled with the corresponding Financial Statements. Assets procured or capitalized after the transfer date shall be recorded at their Historical Cost.
52. Provision/methodology for capturing LT level network assets, such as service lines and consumer connection items (except metering assessed on a lump-sum basis) in future.
53. Reconciliation of Fixed Asset Register
    i. Fixed Assets Registers so prepared shall be reconciled with the financial records such as General Ledger and Balance Sheet. All constraints and limitations shall be exhaustively explained so that management is able to establish satisfactory improvements and controls going forward on sustained basis. The successful bidder shall also suggest the accounting treatment of the difference, if any, between the book value of the assets and the value as per Asset Register and shall be given along with detailed report. The accounting treatment should be as per the requirement of accounting standards issued by ICAI or other valid accounting principle recognized in India.
    ii. In case of any noted discrepancies between the values, the bidder shall assist to remove the discrepancies by way of appropriate and suitable accounting principles recognized in India.
    iii. The Successful bidder shall also update and reconcile the FAR on regular basis.
54. Tagging of Assets –
    Permanent Marking on Fixed Assets has to be done in following manner:
    i. Tagging of all high value assets to be done with durable, weather proof and water resistant QR Code.
    ii. For tagging of GSS/PSS, Transmission/Distribution Lines, feeders, DTs and Towers/Poles, GPS co-ordinate of each and every entity is to be identified for entire line and marked accordingly with Unique Identification no (Asset Code) and map in GIS System software.
    iii. All cost towards tagging to be borne by the implementing agency.
55. The bidder shall ensure the mobile app supports capturing asset photos and attaching them to asset records and printing QR codes with labels for each asset. These photos and labels will be used for verification and identification in future processes. The asset management system shall accommodate multiple user roles,

including surveyors, engineers or office in-charge for asset validation, concerned departments at the HQ for verification, and finance department for final approval of the data.

56. The bidder shall provide post-survey analysis reports, detailing any identified gaps, challenges, or areas for improvement in the asset identification and survey process.
57. The bidder shall work with BSPHCL to ensure that the asset management system is capable of handling large-scale asset data, supporting future asset expansions and updates.
58. Asset Financial Management –
    i. The bidder shall generate and maintain a comprehensive Fixed Asset Register (FAR) to track each asset's details, including purchase date, depreciation, maintenance records, and asset status.
    ii. The bidder shall ensure that the FAR system is user-friendly, providing clear interfaces for asset tracking, updates, and reporting.
    iii. The bidder shall implement automated workflows for adding, modifying, or deleting assets, ensuring the asset register remains accurate and up-to-date. Workflows shall cover asset addition, modification, and disposal, allowing for transparent and auditable management of the asset lifecycle.
    iv. The bidder shall verify the accuracy of asset data and reconcile discrepancies between the physical assets and the asset register. A regular reconciliation process between the Fixed Asset Register (FAR) and the company's financial statements shall be established to ensure consistency and early identification of discrepancies.
    v. The bidder shall develop a methodology for continuously updating and reconciling the fixed asset register with accounting records. This includes creating formats for regular reports from each circle on the physical verification of assets created, modified, or shifted since the last verification.
    vi. The bidder shall ensure all assets are documented with unique identifiers (e.g. QR Code) in the FAR, and shall establish a process to address discrepancies due to inaccurate identification, missing documentation, or misclassification. Additionally, any discrepancies identified during audits or reviews must be promptly addressed and resolved.
    vii. The bidder shall develop and approve a methodology for determining the historical cost of assets, including purchase price, transportation, installation fees, and other costs. The methodology will be used to assess and reconcile asset values with the books of accounts to ensure accurate financial records.
    viii. The bidder shall conduct regular financial reviews of assets, ensuring correct valuation, cost verification, depreciation calculations, and market value assessments. This includes reconciling assets with financial records, documenting depreciation schedules, and addressing asset revaluation and impairment due to market conditions, damage, or obsolescence. The bidder will ensure FAR reflects accurate asset values, depreciation, impairments, and revaluations, and will track asset transactions, such as purchases, disposals, and adjustments, to maintain alignment with financial statements and tax compliance.
    ix. The bidder shall establish a process for periodic impairment reviews, revaluations, and updates to asset depreciation schedules, particularly for assets affected by market fluctuations, technological obsolescence, or damage. This includes handling asset disposals or write-offs by properly documenting the disposal process, recognizing gains or losses, and ensuring that disposals are recorded with approval workflows and in line with tax laws. The bidder will ensure that all disposals, including partial or fully depreciated assets, are accurately reflected in the FAR and financial statements.
    x. The bidder shall ensure continuous reconciliation of asset data, aligning physical assets, recorded data, and financial statements. This includes implementing periodic audits, physical asset verification, and tagging to ensure proper identification in the FAR. The bidder will address challenges in asset identification, such as missing purchase orders or incomplete documentation, and resolve them through research or coordination with relevant departments. Additionally, assets acquired through trade-ins, barter deals, or discounts will be evaluated for fair market value and recorded accurately.
    xi. The bidder shall establish a clear protocol for asset disposal or decommissioning, ensuring all assets marked for disposal are tracked, identified, and removed from the FAR. This includes ensuring proper documentation of asset disposals, tracking sale proceeds, and ensuring that gain or loss is reflected in the financial statements. The bidder will also ensure that asset disposals are in compliance with tax laws and include detailed audit trails to maintain the integrity of the FAR.
    xii. The bidder shall ensure the Fixed Asset Register (FAR) complies with the requirements of the Bihar Electricity Regulatory Commission (B.E.R.C.), other regulatory frameworks and relevant accounting standards such as Ind AS, including accurate asset valuation, depreciation, impairment, and

environmental considerations.

xiii. The bidder shall establish a comprehensive asset management policy to guide the organization in managing asset data, covering acquisition, disposal, valuation, depreciation, and sustainability, ensuring compliance with regulatory and tax requirements, and facilitating collaboration with auditors for external review and accurate financial reporting.

xiv. The bidder shall develop a system to categorize assets by type, location, and category (e.g., Transmission lines, Substations, Vehicles) and ensure regular updates to the Fixed Asset Register (FAR) to reflect status changes, including location shifts, revaluations, disposals, and impairments. This includes tracking mixed-use assets, such as vehicles, for both operational and resale value.

xv. The bidder shall prepare periodic asset reports detailing acquisition costs, depreciation, current values, and net book values. These reports should ensure transparency for financial management and be backed by appropriate documentation (e.g., purchase orders, invoices, contracts).

xvi. The bidder shall ensure accurate recording and reporting of assets under construction or in progress, track and categorize assets by location, department, and status, and maintain up-to-date asset and depreciation registers. This includes preparing voltage-wise fixed asset and depreciation registers with installation/commissioning years for ease of year-wise tracking.

xvii. The bidder shall establish procedures for adjusting asset lives based on condition, usage, or market changes and ensure that obsolete or underperforming assets are written off or impaired in accordance with financial reporting and tax regulations. Collaboration with the finance team will be necessary to determine when write-offs or impairments are required.

xviii. The bidder shall monitor market fluctuations that may impact asset valuation, particularly for assets subject to rapid depreciation or value changes, ensuring proper adjustments are made when needed.

xix. The bidder shall ensure that all asset-related changes are approved through a structured workflow to maintain accountability and data integrity in the FAR.

xx. The bidder shall integrate asset depreciation data and valuation into the financial statements, ensuring compliance with accounting and tax standards.

xxi. The bidder shall establish internal control procedures to prevent fraud or theft, such as regular physical asset counts, segregation of duties, and cross-checking system records.

xxii. The bidder shall address any challenges related to asset categorization and valuation by reviewing asset records, verifying details, and categorizing assets accurately.

xxiii. The bidder shall ensure that internal stakeholders are trained in asset management procedures, including data entry, updating asset records, and verifying asset data.

xxiv. The bidder shall implement data backup and recovery protocols for the FAR system to prevent data loss and ensure continuity. Additionally, the bidder shall manage asset data securely by enforcing access controls and security protocols to protect sensitive financial information.

xxv. The bidder shall provide capabilities for importing asset data from legacy systems to enable smooth migration to the new asset management system.

xxvi. An accounting procedure manual incorporating best practices, including aspects related to accounting requirements, statutory requirements and regulatory aspects should be developed for the Fixed Asset Management Module.

xxvii. The standardization process shall also include the requirements of determination, advice finalization and implementation of the following processes:

1. Featuring a suitable Form for Asset Master Creation which is capable and exhaustive enough to gather all possible required information at the time of generation of Capital work in progress (CWIP), that is, at the very beginning of the actual work so that complete reports can be generated from system in no time that serves the purpose of Management decision making as well as the statutory requirements.
2. The process of tracking the movement of Fixed Assets from one unit to another and/or in case of bifurcation or demerger of units viz. bifurcation of a Division Office into two separate Division Offices (Transfer Movement management).
3. The process of capturing and tracking the Repair & Maintenance Work through proposed System.
4. The process of creation and reporting of information if one Fixed Asset is procured/constructed using multiple sources of funds, viz. Loan Fund, Govt. Grant, Consumer Contribution and Own Fund.
5. The process of retirement of Assets from as per Indian Accounting Standard on account of

either Dismantling, Replacement of damaged assets or Scrap sale out (Asset Disposal Management).

6. The process of tracking of Insurance, Lease contracts (Land & Building), Warranty Expiry, etc. through system.
7. Modalities of Process Flow from Creation of Asset (Asset Master) on requisition or as per the requirements at unit level to updating the same in FAR (including the process of Capital Work-in-Progress (CWIP) and its conversion to Fixed Assets) are to be determined so that the audit trail for each and every material and service related to the assets can be traced out conveniently.
8. The Bidder should suggest IT Asset management policy as per industry best practices and may also consider BSPTCL IT Asset Management policy while formulating Asset naming convention and suggest necessary modifications if required in the existing policy.

3.5 High level requirements of Enterprise Asset management & Maintenance Management Software Application

BHPHCL and its subsidiary companies currently managing information either manually or by variety of disparate solutions related to planning and maintenance of assets and infrastructure networks. It is expected automate the manual process and do integration with existing systems for central view assets and operations management. The assets created through various modes needs to be reflected in proposed system for the central repository for asset data. The main objective of application software is to digitize asset records & maintenance process to streamline and enhance every aspect of asset management and maintenance management to optimize their maintenance operations, Asset management & inventory management. It must offer an array of key features that address the unique challenges of the power companies such as centralized asset information, advanced maintenance features, combined with condition monitoring, real-time data and reporting, with mobile access to field technicians to update and receive information on the go, enhancing responsiveness and operational efficiency, digitize maintenance process and records, plan inspections, streamline operations, monitor operational data, asset failure prediction, cost optimization, predictive maintenance etc. to extend asset lifecycles and improve productivity of maintenance staff. Indicative functional requirements for proposed application for asset & maintenance management are provided below:

1. Develop/supply the Software application to maintain surveyed assets, update the details of existing assets, enter the new assets, record keeping of maintenance activities of assets etc.
2. Software should be capable to manage assets from acquisition to disposal.
3. Software should be capable for asset management and asset register functions.
4. The proposed solution should make asset management & maintenance operations more efficient.
5. Software shall provide computerized asset & maintenance management system so that various assets and equipment can be maintained efficiently.
6. The proposed computerized asset & maintenance management system shall be able to do management of all assets & maintenance operations such as asset survey, asset verification, asset inspection, managing asset, asset management checklists, managing work orders, building work orders, scheduling preventive maintenance, managing work assignments, logging maintenance history, managing spare parts, inventory management in stores, work request creation, task scheduling, storing the essential information, Barcode/QR code lookup for easy part identification and tracking, Inventory forecasting for optimizing stock levels, delivering reports, Dashboards for tracking critical KPIs, well-designed mobile app for simplify executing asset & maintenance work, user-friendly UI with visually appealing, well-organized, and easy to navigate.
7. Software should be able to properly maintain the asset, resources of a company, maintenance of the assets/machines/equipment running with minimal downtime, enhance overall equipment effectiveness, extend the useful life of assets, preventive periodic maintenance, breakdown maintenance, condition-based maintenance, emergency maintenance, equipment and facilities inspections, equipment maintenance records, necessary maintenance cost information, maintenance planning & Scheduling, maintenance work orders etc.
8. Perform data entry of surveyed assets in proposed application software. End-to-end workflow solutions for surveyors, measure, process, report and share information efficiently and accurately.
9. Software should be capable for document management capabilities, enabling users to upload, store, and associate documents with various entities such as assets, work orders and purchase orders etc.
10. Software should be capable for attachments of relevant documents for each asset, such as purchase invoices, warranty certificates, maintenance records, and inspection reports etc.
11. Software should be capable to manage asset Description and Documentation like Name, type of asset, Brand/Manufacturer, Model number or serial number, Specifications (e.g., size, capacity, material), Purchase date and cost, Asset location (e.g., department, building, warehouse), GPS coordinates etc. able to capture the configuration and structure of physical assets, their complete technical details, commercial details, current position (either by location, functional position, tag), as well as prior locations and maintenance history.
12. Software should be capable to manage geolocation of assets like distribution transformers, poles, and substations are geotagged to ensure accurate location data etc.

13. Software should be capable to record asset condition survey such as physical condition assessment, operational status, inspections or tests on assets, underused, overused etc.
14. Software should be capable to maintain the fixed asset register at different levels (e.g., company, Circle, Division, sub-division, section etc.)
15. Software shall provide asset management function such as creation of an asset register which will hold the comprehensive details of each asset/ equipment (location details and its hierarchy, specification details including drawings, operating locations, histories of planned and un-planned maintenance & failures, Links to inventory management), maintenance inventory (stores management, requisition and purchasing).
16. Software should be capable to do asset identification through automatic/manual generation of asset codes.
17. Software shall provide asset management function such as maintainable operations of assets through an asset register, accounting of assets; purchase price, depreciation rates etc.
18. Software should be capable to maintain detailed and up-to-date record of all physical assets, tracking key data such as acquisition cost, location, depreciation, maintenance history, and life expectancy.
19. Software should have provision to define periodic updates of new assets addition, depreciation & Assets deletion including change control mechanism for adding/retiring assets monthly, quarterly, half yearly, yearly or any specified period for any location.
20. Software should be capable to centralized management of fixed asset categories, depreciation rates, residual values etc.
21. Software should be capable to enables asset inspections and surveys to collect asset data on asset condition, status, and performance, ensuring up-to-date asset records.
22. Software should be capable to manage parent-child relationships and asset classifications (e.g., group asset, asset class, asset type).
23. Software should be capable to modify asset master data, deactivate assets, block assets.
24. Software should be capable to identify assets for disposal and retirement.
25. Software should be capable to assign unique asset identification numbers (through QR codes).
26. Software should be capable to manage different depreciation methods (e.g., straight-line, declining balance, unit of use etc.)
27. Software should be capable to create approval workflow for various process such as approval processes for asset data entry and updates.
28. Software should be capable to search based on multiple criteria, including asset codes, descriptions, and other specifications.
29. Software should be capable to do asset valuation i.e. track and calculate the current financial value of assets, including depreciation, financial reporting, insurance and decision-making.
30. Software should be capable to tracks warranties and service contracts, ensuring timely coverage for repairs, maintenance, and ensuring the renewal or claims process is managed effectively.
31. Software should be capable to continuously evaluate asset performance against defined KPIs, ensuring optimal asset utilization and helping identify underperforming assets for improvement or replacement.
32. Software should be capable to keep a comprehensive record of all maintenance activities performed on assets, including repairs, replacements, and inspections, enabling informed decisions for future maintenance planning.
33. Software shall provide work order function including preventive maintenance work-orders such as creating & viewing comprehensive and detailed planning information work Plans, Schedules, Costs, Labour, materials, Skill set, Recording of maintenance work and closure of work orders, estimates etc.
34. Software shall provide scheduling function for future preventive maintenance.
35. Ability to track asset installation costs, useful life and depreciation schedule or deterioration curve, and current book value of the asset based on original cost and any capital improvements to the asset over its lifecycle.
36. Ability to integrate with existing & upcoming financial software to determine installation costs, typical useful lifecycle information and current asset value.
37. Ability to determine when an asset requires maintenance or replacement and tracks the cost to be allocated to the assets once maintenance or replacement is complete.
38. Provides an enterprise-wide valuation calculation of asset values from the core system. Utilizes historical information to determine value of an asset at any point in time.
39. Supports budget forecasting for assets and jobs based upon set criteria,
40. Software should be capable to keep a comprehensive record of required safety, legal, and industry regulations, maintaining accurate documentation for audits and compliance purposes.
41. Software should be capable to prepare and manage the Maintenance Budget for Preventive Maintenance, and Annual Business Plans etc.
42. Software should be asset agnostic any asset can be managed within the software.
43. Software should allow asset inventory tracking of both linear and vertical assets.
44. Software should be capable to asset categorization based on their type, function, and value etc.
45. Software should be capable to track equipment technical specifications and materials used for maintenance.
46. Software should allow tracking asset features, location, install/replace dates, and associated condition, and working history.
47. Software should be capable to assign and reallocate tasks to personnel or contractors, based on job requirements.
48. Software shall provide personnel function such as creation of employee/users, assignment details job, location & department, Training / certifications of employees etc.

49. Software should be capable to track resource usage, including labor and materials, and generate related reports.
50. Software should be capable to maintain vendor-specific warranty information and use it for equipment maintenance.
51. Software shall provide contractor services management.
52. Software should be capable to manage safety protocols and precautionary steps for executing work orders.
53. Software should be capable to track and report on the cost of maintenance for each equipment or group of equipment.
54. Software should be capable to produce analysis reports on common equipment failures, breakdown reasons, and utilization history.
55. Software should be capable to assign tasks to the relevant maintenance crews or technicians to perform specific activities (e.g., replacing a fuse, inspecting a substation, or repairing a feeder etc.).
56. Software should be capable to do spare parts management such as circuit breakers, fuses, transformers, and cables that may be required for repairs or replacements etc.
57. Software should be capable to monitoring the progress of work orders from creation to completion, including the time spent, resources used, and issues encountered.
58. Software should be capable to do estimation of work based on standard rates available for assets. System shall have capability to add line items dynamically in estimation as per requirements of work from repository of master list of items with rates including labor. System shall be capable to maintain rates for items as notified by concerned agencies time to time and same shall be available in work estimation. Work estimation shall have workflow based approval mechanism, once work estimation approved by competent authority then may generate work order for execution of work order after requesting required material from stores/inventory. Stores/Inventory needs to be integrated for this purpose. Allows for the import, adding and deleting of equipment types, rates. Approval of estimated to be done as per delegation of powers.
59. Software shall allow to track create service requests for internal and external work requests.
60. Software shall have web-based request portal that allows users to place their requests from web page or via a mobile application.
61. Software should be capable to create a comprehensive report detailing all fixed assets, including descriptions, locations, values, depreciation, and status (e.g., active, under maintenance, obsolete) etc.
62. Software should be capable to create maintenance schedules for various types of equipment across GSS, PSS, Feeders, DTs and offices.
63. Software should be capable to organize and stores essential asset-related documents such as service records, maintenance logs, manuals, and compliance certifications.
64. Software shall provide intuitive dashboard for top management, analysis of past records, management tools and services that work together to maintain (or control) the performance of operational assets, increase uptime, visual reports that make it easy to track asset performance, maintenance schedules, overall operational metrics and reduce operational costs, view asset condition information and the data associated with the assets, decision support capabilities, ability to export data for further analysis.
65. Software shall provide a consolidated view of the company's assets & maintenance as per office hierarchy with useful information about how they're performing along with financial value of assets.
66. Proposed system shall be capable for accessing centralize asset information.
67. Software should be capable to generate detailed reports on asset history, performance, revaluation, and consumption.
68. Software should be capable to provide mobile applications for field technicians and maintenance staff to access asset data, work orders, and other key information in real time, improving flexibility and operational efficiency as per authorization.
69. Software should be capable to create, track, and manage work orders for repairs, inspections, maintenance tasks, and upgrades, ensuring efficient task execution and resource allocation.
70. Software shall generate work orders from service requests and route to appropriate staff.
71. Software shall send automated response to requestor once the work has been completed.
72. Software should be capable to do Preventive Maintenance, Corrective Maintenance etc.
73. Software should be capable to record related details of scrapped assets, or written off assets etc.
74. Software shall be able to map service requests base on a variety of criteria including geo-referencing address, GSS/PSS marker, landmarks, X/Y or Lat/Long coordinates, or by visually clicking on a map.
75. Software shall be able to link one or more assets to a service request.
76. Software shall have flexible work order creation from office, field, mobile or GIS mapped location.
77. Ability to verify that asset disposals have been authorized by relevant stakeholders.
78. Ability to create and manage Contractor records.
79. Ability to assign Contractor to work order and associate a contractor activity, date or date range, and cost to work order.
80. Allow for the attachment and easy reference of past and current vendor contracts.
81. Software should be capable to manage spare parts, tools, and materials required for asset maintenance and repairs, optimizing inventory levels and reducing delays in maintenance tasks. Allows for the import, adding and changing of equipment types, rates etc.
82. Software shall be capable for inventory management, efficient handling of assets/materials at all stages, assets planning and control, stores management etc.
83. Software shall allow to track asset an asset from receipt as material inventory stocked in store to deployment as field asset.

84. The bidder shall conduct a detailed requirement study and prepare a business blueprint to understand the scope, needs, and design of the asset maintenance management system, ensuring alignment with end-user needs, license requirements, and network feasibility.
85. The bidder shall implement a comprehensive maintenance log management system to record and track all maintenance activities, and develop software to manage the complete asset lifecycle, from installation to operational monitoring and end-of-life management.
86. The bidder shall implement a comprehensive Asset Maintenance Management System that tracks assets across all departments and locations, ensuring centralized, scalable, and accurate asset tracking with a unified view of asset data. This includes integration with vendor and warranty management features for seamless maintenance tracking.
87. The bidder must ensure that all assets are entered into the AMS, with a robust data validation process to minimize errors. The system should support asset performance benchmarking against industry standards, track energy consumption, and offer reports on key performance indicators (KPIs) related to asset performance, maintenance efficiency, and costs.
88. The bidder shall provide a system to manage preventive and corrective maintenance tasks, including tracking compliance and ensuring timely completion. This will include advanced analytics to predict maintenance needs and a notification system to alert stakeholders of upcoming maintenance or critical issues.
89. The bidder shall establish an organizational change management strategy and assess the readiness for change within the organization to ensure smooth transitions and alignment for system adoption.
90. The bidder must create and implement a comprehensive training program for end-users to ensure effective system adoption and usage.
91. The bidder must conduct site visits to assess asset health, capture data on operational conditions (including wear and faults), and report any anomalies or failures to ensure compliance with operational standards.
92. The bidder shall integrate inspection data into the centralized asset management system for accurate tracking and reporting of asset conditions, ensuring efficient maintenance planning.
93. The bidder must implement a systematic approach for managing preventive, corrective, and predictive maintenance tasks, enabling work order creation, assignment, and tracking.
94. The bidder must establish automated maintenance alerts and proactively schedule maintenance tasks based on asset schedules, operational hours, and environmental conditions to optimize operational efficiency.
95. The bidder shall monitor asset performance, track maintenance history, and determine when assets need replacement or major repairs, integrating condition-based monitoring for predictive maintenance.
96. The bidder must ensure regular updates to the system for new, disposed, or revalued assets, and provide support for asset decommissioning, including tracking and disposing of obsolete assets.
97. The bidder shall implement an escalation mechanism within the system to prioritize maintenance tasks based on asset criticality, ensuring timely action and efficient resolution.
98. The bidder must set up automated alerts for maintenance actions based on real-time monitoring, predefined schedules, or asset condition indicators, ensuring timely responses to operational changes.
99. The bidder shall implement automated notifications for scheduled maintenance and urgent issues requiring immediate attention, while ensuring alerts align with regulatory compliance standards for asset maintenance.
100. The bidder must provide the ability to schedule maintenance tasks based on both time intervals and asset condition indicators, enabling proactive maintenance management.
101. The bidder must ensure seamless integration of the asset management system with other enterprise systems, including ERP or accounting systems, for automated data synchronization and to minimize discrepancies.
102. The bidder shall integrate with third-party vendor systems to enable efficient warranty management and service tracking, ensuring smooth operations across all platforms.
103. The bidder must ensure the asset management system tracks vendor-specific warranty information, maintenance service history, and aligns all maintenance schedules with manufacturer recommendations to optimize asset performance and lifespan.
104. The bidder shall implement reporting functionality for asset performance, maintenance consumption, and predictive maintenance, integrating condition monitoring tools and IoT sensors to provide real-time data and predictive insights for future maintenance needs.
105. The bidder must periodically review and audit asset data for consistency, accuracy, and ensure the system includes features for location tracking, warranty claims management, and integration of maintenance history with asset performance to improve decision-making.
106. The bidder must periodically synchronize asset data with other systems to ensure the asset database reflects the latest transactions, and automate the reconciliation of asset data across multiple systems to avoid discrepancies.
107. The bidder shall update and track asset condition and operational status in real-time, while also ensuring accurate tracking of asset depreciation for financial reporting in compliance with accounting standards.
108. The bidder must implement a seamless process for asset revaluation to maintain up-to-date financial values and ensure system compatibility with various accounting and financial systems for efficient asset valuation and reporting.
109. The bidder shall implement a system to track asset movements (relocations, maintenance, disposals) and update the asset database accordingly, including real-time tracking during repairs and maintenance.
110. The bidder must manage asset maintenance costs, repairs, warranties, and service histories, facilitating effective financial planning and decision-making, while providing automatic maintenance cost breakdowns for budget planning.

111. The bidder shall ensure effective lifecycle management by tracking maintenance schedules, warranties, and service histories, along with managing spare parts inventory for maintenance tasks to ensure resource availability.
112. The bidder shall provide a unified dashboard for asset performance monitoring, maintenance tracking, and a robust reporting mechanism to track asset failures, repairs, and associated costs over time
113. The bidder shall ensure seamless access to asset data for authorized personnel, enabling quick decision-making, while also tracking inspections and audit trails for transparency
114. The bidder shall provide a data backup and disaster recovery plan to ensure continuity of asset data in case of system failure
115. The bidder must develop a mobile app that supports real-time updates, work order creation, assignment, and tracking. The app should allow technicians to capture real-time asset data and update work orders, ensuring efficient task completion. It should also facilitate mobile-based inspections and be compatible with various devices for field operations.
116. The system should allow for integration with multi-location operations, environmental monitoring tools, and other departments, ensuring collaborative and condition-based maintenance. It should also support real-time updates and enable communication between maintenance teams and other stakeholders.
117. The bidder must ensure the system tracks the full lifecycle of assets, from installation to end-of-life, including maintenance history, repairs, and performance reports. This system should also facilitate QR-based asset tracking across multiple locations.
118. The system must leverage QR code scanning for real-time tracking of inventory movements, including receipts, issues, returns, transfers, and disposal, ensuring accurate and up-to-date data.
119. The bidder shall categorize inventory items based on their criticality, usage patterns, and lifespan to prioritize maintenance needs and ensure parts availability for high-priority tasks.
120. The system shall incorporate an automated alert system to notify relevant personnel when stock reaches predefined reorder levels based on consumption rates, ensuring timely replenishment of critical items.
121. The system shall support various inventory valuation methods, such as FIFO, LIFO, and others, ensuring proper valuation and cost tracking for accurate financial reporting.
122. The bidder must configure the system to optimize stock levels, minimizing excess stock while avoiding shortages and stockouts, to balance the need for maintenance with cost-efficiency.
123. The system shall facilitate regular audits and stock reconciliations to ensure inventory accuracy, prevent discrepancies, and maintain alignment between physical and system stock.
124. The bidder shall ensure the system tracks inventory from receipt to disposal, managing lifecycle stages such as usage, condition, and expiry, and tracking items designated for repair, replacement, or disposal.
125. The system shall manage inter-store transfers, enabling inventory optimization across multiple locations or warehouses and ensuring resources are distributed as needed for maintenance tasks.
126. The bidder shall distinguish between consumables and non-consumables, ensuring the appropriate management of both types, including lifecycle tracking and replenishment for each.
127. The system must provide comprehensive reporting functionality, generating reports on stock status, consumption patterns, stock-outs, and inventory trends to assist decision-making and forecasting.
128. The bidder shall implement features to track critical and high-value items with greater accuracy, ensuring they are properly secured and easily identifiable for maintenance activities.
129. The system shall track returned inventory items, including reasons for return, condition, and corrective actions taken, ensuring proper stock management and documentation.
130. The bidder must include forecasting tools to predict future inventory needs based on historical consumption patterns and maintenance schedules, improving stock planning and replenishment efficiency.
131. The system shall provide role-based access control, ensuring that only authorized personnel can perform specific tasks, such as managing stock levels, processing issues, and approving stock transfers.
132. The bidder shall enable the system to manage supplier information, track vendor performance, and automate reordering based on real-time stock data, optimizing procurement strategies.
133. The system must manage the disposal and obsolescence of inventory items, ensuring proper procedures are followed for outdated or damaged parts to avoid wastage.
134. The bidder shall incorporate functionality to monitor the condition of stock items and trigger alerts for items that need repair, replacement, or replenishment.
135. The bidder must implement a system for managing seasonal or perishable inventory, with features to track expiry dates and adjust stock levels accordingly.
136. The system shall maintain a full audit trail of all inventory transactions, ensuring transparency and traceability for compliance and accountability purposes.
137. The system shall send notifications for critical stock updates, such as low stock, upcoming audits, or stock expiry, to ensure timely action is taken.
138. The bidder must integrate the inventory system with financial systems to ensure seamless tracking of inventory costs, asset valuation, and budget management.
139. The system shall support backordering functionality, allowing for the tracking and fulfillment of items that are temporarily out of stock, ensuring maintenance operations are not delayed.
140. The bidder shall enable field personnel to track inventory issues, returns, and transfers in real-time via the mobile app, improving operational efficiency and accuracy of inventory data.
141. The bidder must implement security measures within the system to track and monitor high-value items, including location tracking and alerts for any suspicious or unauthorized movements.

142. The bidder shall integrate a mobile app for field personnel to manage inventory activities directly from the field, allowing for real-time updates and tracking of inventory, stock levels, and movements.
143. The bidder shall ensure that inventory movements, including receipts, issues, and transfers, are immediately updated in the system, maintaining real-time accuracy and preventing discrepancies.
144. The bidder shall provide training for users on best practices for inventory management, ensuring personnel are equipped to efficiently manage and track inventory throughout its lifecycle.
145. The system shall have features to manage emergency stock requests, ensuring that critical parts are available in case of urgent maintenance or breakdowns, reducing downtime.
146. The bidder shall ensure the system has a robust backup and disaster recovery plan, ensuring data integrity and continuity of inventory management processes in the event of system failures or data loss.
147. Software should be capable to manage inventory of all assets, material used by power companies of BSPHCL and it's subsidiaries. The inventory/store management shall have following feachers:

i. Specifying attributes and then ability to search by attribute for items, equipment and locations.
ii. Track multiple store locations with individual physical descriptions.
iii. Track stock levels at individual and aggregate store levels, including consumption patterns and reorder points.
iv. Monitor various inventory statuses like available, scrapped, obsolete, under repair, etc.
v. Allow to capture details for item movements like issues, inter-store transfers(including inter-company & Intracompany transfer), returns, and repairs etc.
vi. Automatically trigger stock replenishment based on parameters like reorder levels and consumption rates.
vii. Support FIFO, LIFO and other methods for inventory valuation.
viii. Allows for the application and management of multiple rates per piece of equipment.
ix. Allows equipment to be assigned to a work order and usage and cost calculated and tracked.
x. Supports multiple warehouses, stock locations, inventory transactions and cost methods.
xi. Supports material order and receiving, multi-location inventory control, order fulfillment, and adjustments for returns, cycle counts, and disposal.
xii. Ability to integrate with QR code and barcode readers for quicker record access and data entry.
xiii. Ability to issue Gate pass.
xiv. Generate reports on stock status, consumption, stock-outs, age analysis, and shelf life evaluation.
xv. Record receipt of inventory items.
xvi. Record quality inspections before goods are posted to inventory.
xvii. Store inspection records and images for multiple asset inspections.
xviii. Support goods receipt workflows, including mismatch tolerance and PO revision.
xix. Create and manage store requisitions for materials, including approval workflows.
xx. Validate available inventory before goods issue.
xxi. Generate pick lists and gate passes for material movement.
xxii. Generate reports on goods issued, stock consumption, and inventory status.
xxiii. Record physical movement of stock between stores.
xxiv. Record and approve inter-store transfer orders and generate transfer documentation.
xxv. Generate reports on inter-store transfers, item shortages, and transfer trends.
xxvi. Record and support return of unused/excess materials from field to stores.
xxvii. Classify returned materials as scrap or healthy.
xxviii. Generate store return notes and track the receipt of returned goods.
xxix. Generate reports on materials returned, including scrap/obsolete items.
xxx. Generate reports on scrap materials.
xxxi. Approval process for scrap disposal.
xxxii. Record material auction/sale with disposal results, including buyer details.
xxxiii. Record periodic physical stock verification and update inventory accordingly.
xxxiv. Record discrepancies between system and physical stock counts.
xxxv. Approval workflows for discrepancies based on predefined criteria.
xxxvi. Generate reports on stock verification, discrepancies, trends, and inventory status.

3.6 Tentative scope of GIS (Geographic Information System)

The GIS information system needs to be integrated with Asset & Maintenance Management Software Application for location information for assets, asset record (contain information on all work orders, service requests, condition assessments attached to that asset etc.). GIS system shall have different layers as per business requirements as follows:-

1. The bidder shall ensure that GPS-enabled devices are used by surveyors to accurately track the geolocation of assets during the survey process, ensuring precise asset data collection for GIS integration.

2. A GIS system must be integrated to visualize and track asset locations, including HT lines, poles, transformers, substations, and distribution transformers, with regular updates to reflect any additions, removals, or relocations.
3. Asset records, including data from GSS, PSS, and Distribution Transformer stations, shall be stored in the GIS system and made easily retrievable, ensuring a reliable source of information for maintenance and operational needs.
4. All assets shall be assigned unique identification codes, categorized, and geotagged during the survey. The asset data, including condition reports, shall undergo thorough cross-checking for accuracy and completeness during data entry.
5. The bidder shall develop different layers within the GIS system for various asset types, ensuring accurate mapping of assets and integration with operational data such as fault locations, weather conditions, and asset performance indicators.
6. A mobile app shall be provided for field engineers to capture real-time data, enabling them to update asset conditions, geolocation, and operational statuses directly in the GIS system, ensuring continuous and accurate updates from the field.
7. Single Line Diagrams (SLDs) shall be prepared digitally, showing the full network of HT lines, substations, and transformers. These SLDs must be scalable, editable, and accurately reflect network connections and asset relationships, including details like length, material, and size of lines.
8. The GIS system shall regularly be updated to reflect changes in the network, including new installations, upgrades, and removals, ensuring the asset mapping remains current and reliable for operational planning and maintenance activities.
9. The bidder shall integrate operational data, including fault locations and weather data, into the GIS system, overlaying it on the asset maps to enhance decision-making and response time during emergencies or maintenance activities.
10. The bidder shall perform physical surveys and verifications of fixed assets, using the collected data to create scalable Single Line Diagrams (SLDs) of the electrical transmission and distribution network, while reconciling asset values in the Fixed Asset Register with those in the books of accounts.
11. Asset locations shall be mapped accurately in GIS, including critical infrastructure such as substations, transmission lines, poles, and offices, with each asset properly geotagged to ensure precise and up-to-date mapping.
12. The bidder shall ensure that GPS-based tracking is implemented to help field personnel with route planning and emergency response, optimizing response times based on real-time location data of assets and field teams.
13. The bidder shall prepare a comprehensive fixed asset register, incorporating all the survey data, geotagging, and condition reports, ensuring that it is regularly updated as new assets are added or removed from the network.
14. GIS data integration will include the overlaying of operational data such as fault locations and weather conditions on the maps, providing an enhanced view of the network for proactive management and maintenance planning.
15. The bidder shall procure GIS maps and ensure they are properly integrated into the GIS system, allowing for effective location tracking and asset mapping across the entire geographic area of operation.
16. The bidder shall ensure that the GIS software can generate real-time, accurate updates to asset location maps, with regular updates being provided to reflect changes in the field, such as asset relocations or new installations
17. The bidder must provide satellite imagery with a resolution of less than 1 meter, including all necessary satellite data required for the project. The cost of the imagery must be included in the bid, and the purchaser will provide a letter to request the imagery.
18. Satellite imagery must include detailed land base data, covering features such as roads, footpaths, bridges, rivers, buildings, plots, green areas, gardens, and important landmarks in a vector format. These features must be clearly visible in the images.
19. The bidder must provide support services for the satellite data, ensuring continued assistance after the delivery of the imagery.
20. The bidder must send the satellite data to NRSC for security clearance prior to delivery to the department, ensuring that all necessary security checks and reviews for sensitive areas are completed. Upon clearance from NRSC, the satellite data will be delivered to the department, with the bidder ensuring that all necessary documentation and procedures are followed.
21. The bidder must ensure that the satellite imagery has no more than 20% cloud cover and is provided in digital form, meeting all requirements for imagery quality, including resolution, color accuracy, angle, and cloud cover.
22. The bidder must confirm that the imagery provided meets all specified quality standards, including resolution, color accuracy, angle, and cloud cover, and that the images will be free of any defects upon delivery.
23. After the data is delivered, the bidder must offer post-delivery support to address any issues with data quality and resolve any concerns that arise regarding the imagery.
24. An imagery metadata report must be submitted by the bidder, detailing information about the imagery such as the area covered, time of capture, number of images, technical specifications (e.g., angle, color), and other relevant details.
25. The bidder must submit a sample of at least 25 square kilometers of satellite data to demonstrate the quality and compliance of the imagery provided.

26. The bidder must ensure that the satellite data is new, genuine, and meets the specifications outlined in the bid, confirming its authenticity.
27. The satellite imagery must have a Ground Sample Distance (GSD) of 40 cm or better, with each pixel in the image representing an area of 40 cm or less, meeting the specified resolution requirements.
28. The bidder must ensure that the Off-Nadir Angle (ONA) of the satellite imagery meets the acceptable range, with the first leg at 0-25 degrees and the second leg calculated by the system within the range of 0-35 degrees.
29. Satellite data must be delivered on a hard disk, as specified in the bid, for easy transfer and storage.
30. The satellite data must be in UTM (Universal Transverse Mercator) coordinate system, with WGS-84 as the reference system, ensuring global compatibility.
31. The data should be delivered in GeoTIFF format, with 16 bits per pixel, and split into tiles of 16x16 for easy handling and processing.
32. The bidder must perform GIS-based asset mapping for the entire transmission and distribution electrical network, ensuring accurate overlay of surveyed assets onto a specified land base map to create a comprehensive GIS database.
33. The bidder must input asset survey data and land base information into the GIS system, generating accurate, browser-based maps of the transmission and distribution network that can be accessed and visualized via a web-based GIS application.
34. The bidder shall develop a web-based GIS application for viewing, analyzing, and utilizing asset mapping data, considering the roles and responsibilities of various stakeholders such as engineers and supervisors, and ensuring the GIS system supports asset management functions.
35. The bidder must design an interactive map interface that includes zoom, pan, search capabilities for assets and land base, as well as tools for measuring distances, areas, and coordinates. The interface should also allow for bookmarking favorite locations for quick access.
36. The web GIS application must provide layer control for toggling between electric and land base layers, offering different map styles (e.g., satellite, street view), and integrating with external map services (e.g., Google Maps) for additional context.
37. The application should include proximity analysis features to assess nearby assets and clustering capabilities for analyzing asset density or patterns, as well as heat map functionality for visualizing asset distribution.
38. The bidder must integrate GPS-based asset location tracking, allowing for real-time identification and capture of asset information and ensuring accurate geolocation of assets and survey locations.
39. The GIS application should support dynamic map updates as new surveys are completed, with customizable map layers that display relevant GIS data, including infrastructure and boundaries, and attribute-based symbology to differentiate assets based on characteristics.
40. Spatial querying capabilities must be implemented to enable users to select and filter survey data based on location or asset attributes, enhancing the ability to analyze and report on network data.
41. The solution shall integrate with ERP, Billing, and other databases to access both spatial and non-spatial data.
42. The solution shall display electric network infrastructure, including power lines, GSS, PSS, transformers, meters, and last-mile consumer connectivity.
43. The solution shall provide customizable symbology and labelling for map features and integrate real-time data for live map updates with an interactive dashboard.
44. The solution shall enable thematic mapping to visualize data based on attributes and weather data overlay.
45. The solution shall implement heat stress analysis to identify at-risk areas and display infrastructure-related data such as capacity and load.
46. The solution shall provide spatial query tools, attribute querying, buffering, proximity analysis, and routing for optimal paths and serviceability.
47. The solution shall support spatial intersection, network tracing, connectivity, service area, and hotspot analysis to identify high consumption, theft-prone areas, and sales gaps.
48. The solution shall track asset inventory, integrate with asset & maintenance systems, and set up notifications for asset failures or maintenance needs.
49. The solution shall offer predictive analytics, historical data analysis, asset tracking, geo-location tagging, and integration with GPS/QR Code for real-time asset tracking.
50. The solution shall enable work order management, asset inspection, and history integration to optimize asset management and maintenance scheduling.
51. The solution shall provide real-time outage visualization, automated fault localization, and outage detection.
52. The solution shall enable outage reporting, impact analysis, forecasting, restoration planning, and optimization tools.
53. The solution shall integrate customer communication for outage updates and restoration times via SMS.
54. The solution shall display electrical network components (from GSS to DT) and generate Single Line Diagrams (SLDs) of electrical networks.
55. The solution shall allow dynamic linking between network entities and validation for incorrect phasing, line connectivity, and conductor assignment.
56. The solution shall provide offline editing capabilities and ensure map loading on both web applications and mobile apps with full feature manipulation.

57. The solution shall enable easy creation, deletion, and modification of features within the GIS environment.
58. The solution shall support advanced GIS operations like raster editing, spatial querying, complex SQL queries, and vector-to-raster data translation.
59. The solution shall enable multi-point editing, version management, and API access for custom development.
60. The solution shall support importing/exporting of standard file formats (e.g., Visio, PowerPoint, Excel, DWG) and satellite imagery (GeoTiff, JPEG).
61. The solution shall allow users to create and manage layers, symbols, and object attributes.
62. The solution shall enable editing of network entities, ensuring validation of electrical continuity, line tracing, and proper connectivity.
63. The solution shall allow cable splitting, merging, and management of voltage-level restrictions for accurate power flow analysis.
64. The solution shall provide editing capabilities for electrical components (e.g., transformers, switches, and feeders), including real-time changes to system connectivity.
65. The solution shall provide detailed substation information and manage electrical components such as transformers, circuit breakers, and relays.
66. The solution shall enable feeder management properties, and provide fully customizable editing environments for electrical network components.
67. The solution shall offer system integration with other tools, including industry-standard analysis tools (e.g., CYME, SynerGEE), and provide a robust API for GIS customization.
68. The solution shall ensure compatibility for serving GIS data over the internet to both desktop and web-based servers.
69. The solution shall ensure responsive design for mobile access, offline functionality, GPS integration, and real-time push notifications.
70. The solution shall provide mobile-specific features like field mapping, data collection, and collaboration tools, with offline synchronization for remote data access.
71. The solution shall provide GIS software with capabilities for capturing, storing, analyzing, and displaying spatial data, supporting vector and raster GIS data.
72. The solution shall integrate with a spatial database engine (PostgreSQL/MySQL) and ensure compliance with ANSI/ISO SQL standards.
73. The solution shall generate customizable reports and export spatial data in various formats (e.g., shapefile, CSV, KML, Excel).
74. The solution shall provide integration with other systems (e.g., ERP, CRM), data visualization (charts, graphs, dashboards), and statistical analysis tools.
75. The solution shall facilitate data aggregation and summary functions and support integration with business intelligence tools.
76. The solution shall include a report generation tool with server and desktop compatibility and support for spatial and attribute data validation.
77. The solution shall enable automated data validation, filtering, sorting, and record display for effective reporting.

The software will allow for bidirectional synchronization wherein asset geometry and attribution updates are pushed in either direction. The system will have integration capabilities via APIs and/or REST services. The indicative GIS system features is listed below:

1. GIS based asset mapping all assets.
2. Asset mapping activities of entire transmission & distribution electrical network, GIS mapping and creation of GIS Database& Applications
3. The surveyed Electrical transmission & distribution Network with assets should be accurately over layed on specified land base map.
4. Input asset survey & land base data into the GIS system and generate accurate maps of the transmission & distribution network which can be visualize through browser base GIS Web Application
5. bidder should develop web based GIS application for the viewing, analyzing & utilizing the asset mapping data with GIS applications for the various functions, play a role of GIS based asset management system for which the field information and geographic data plays a vital role. GIS application shall be developed considering the roles and responsibilities of various engineers, supervisor and other stakeholders.
6. Map Visualization and Navigation:
    - 6.1. Interactive map interface with zoom, pan, and asset & land base search capabilities.
    - 6.2. Layer control to toggle the display of different GIS (Electric and Land base) layers.
    - 6.3. Base map selection for different map styles (e.g., satellite, street view).
    - 6.4. Tools for measuring distances, areas, and coordinates.
    - 6.5. Bookmarking or saving favourite locations for quick access.
    - 6.6. Proximity analysis for assessing nearby assets
    - 6.7. Heat map and clustering capabilities for analyzing density or patterns.
    - 6.8. Integration with external map services (e.g., Google Maps) for additional context.
    - 6.9. GPS-based asset location tracking.

6.10. Identification and capture of asset information.
6.11. Interactive map interface for visualizing survey locations.
6.12. GPS integration for accurate geo-location and tracking.
6.13. Map visualization with markers or symbols indicating survey locations.
6.14. Customizable map layers to display relevant GIS data (e.g., infrastructure, boundaries).
6.15. Attribute-based symbology to differentiate assets or characteristics.
6.16. Dynamic map updates as new surveys are completed.
6.17. Spatial querying to select and filter survey data based on location or attributes.

7. Data Integration and Display:
   1.1. Integration with the ERP, Billing and other databases as per requirement to access non spatial data with spatial data
   1.2. Display of electric network infrastructure, including power lines, GSS, PSS, and transformers, transmission & distribution assets, Meters with last mile connectivity up to consumer.
   1.3. Customizable symbology and labelling options for map features.
   1.4. Real-time data integration for live updates on the map with interactive dashboard
   1.5. Thematic mapping options for visualizing data based on attributes.
   1.6. Heat stress analysis to identify areas at risk of equipment failure or outages.
   1.7. Display of infrastructure-related information such as capacity and load data.
   1.8. Integration with weather data for overlaying weather information on the map
8. Spatial Analysis and Querying:
   1.1. Spatial query tools to select and highlight specific map features.
   1.2. Attribute querying to filter and retrieve specific data based on user-defined criteria.
   1.3. Buffering and proximity analysis to identify features within a specified distance of a location.
   1.4. Routing and network analysis to find optimal paths and perform serviceability assessments.
   1.5. Spatial intersection and overlay analysis for identifying spatial relationships.
   1.6. Network tracing and connectivity analysis to assess network connectivity.
   1.7. Service area analysis to determine coverage and reach of electrical services.
   1.8. Hotspot analysis to identify areas with high power consumption, high theft areas, high sales gap areas etc.
9. Asset Management and Maintenance Management:
   1.1. Asset inventory management to track and update information about electrical assets.
   1.2. Integration with asset & maintenance management systems for scheduling and tracking maintenance activities.
   1.3. Notification and alert system for asset failures or maintenance requirements.
   1.4. Historical data analysis for identifying patterns and optimizing asset management.
   1.5. Asset tracking and labelling for efficient asset management.
   1.6. Integration with asset inspection and maintenance history data.
   1.7. Predictive analytics for identifying assets at risk of failure.
   1.8. Work order management system integration for scheduling and tracking maintenance tasks.
   1.9. Geo-location tagging for associating survey data.
   1.10. Integration with GPS or RFID systems for real-time asset tracking.
10. Outage Management:
   1.1. Real-time monitoring and visualization of power outages on the map.
   1.2. Ability to report outages and track their status.
   1.3. Automated outage detection and fault localization.
   1.4. Communication and coordination features to facilitate outage response and resolution.
   1.5. Outage prediction and forecasting based on historical data and weather conditions.
   1.6. Outage clustering to identify areas with a high concentration of outages.
   1.7. Outage impact analysis to assess the number of affected customers or critical infrastructure.
   1.8. Restoration planning and optimization tools for efficient outage resolution.
   1.9. Customer communication features for providing outage updates and estimated restoration times through SMS.
11. Reporting and Data Export:
   1.1. Generation of reports and statistics based on GIS data.
   1.2. Export capabilities to download spatial data in various formats (e.g., shapefile, CSV, Excel, KML).
   1.3. Integration with other systems (e.g., ERP, billing, customer relationship management etc.) for data sharing.
   1.4. Data visualization options such as charts, graphs, and dashboards.
   1.5. Customizable report templates for generating standardized reports.
   1.6. Statistical analysis tools for extracting insights from GIS data.
   1.7. Data aggregation and summary functions for generating aggregated reports.
   1.8. Integration with business intelligence tools for advanced data visualization and reporting.
12. Mobile Compatibility:

1.1. Responsive design for seamless access and usability on mobile devices.
1.2. Mobile-specific features like GPS integration for location-based services.
1.3. Offline functionality to access and edit GIS data in areas with limited or no internet connectivity.
1.4. Location-based services (LBS) for tracking field personnel and assets.
1.5. Mobile data collection and field mapping capabilities.
1.6. Offline data synchronization for seamless data access in remote areas.
1.7. Mobile push notifications for real-time alerts and updates.
1.8. Mobile app integration for accessing GIS functionalities on smartphones and tablets.
1.9. Collaboration tools for sharing and annotating maps with colleagues or external stakeholders.
1.10. Mark up and annotation tools for adding comments and notes to the map.

13. Supply of GIS and RDBMS software Licenses.
14. GIS Software shall consist of a system for capturing, storing, checking, integrating, manipulating, analyzing and displaying geo data related to positions on the Earth's Surface and data related to attributes of the entities/assets. It pertains to both vector and raster GIS.
15. GIS Software shall have facility to create Single Line Diagram (SLDs) of electrical sub transmission network starting from the top most voltage bus up to DT. It shall be possible to print/view the SLD of all or selected voltage level for desired Sub-Divisions/division/ circle etc.
16. GIS Software shall enable GIS mapping to pre-defined scale, generation of intelligence electrical network maps and super imposing them on the land base GIS maps and through customization and / or development of application software.
17. GIS Software shall display the entire electrical network from GSS, to transmission lines with transmission towers etc.
18. GIS Software shall display the entire electrical network from PSS, HT line, Distribution transformers, poles etc.
19. GIS Software shall have dynamic capability to establish relationship between the entities
20. GIS Software shall have data validation capabilities such as incorrect phasing assigned by users, incorrect new line connectivity or incorrect conductor assignment etc.
21. GIS Software web application shall have off-line mode capability, So that users can fetch the GIS data, then can perform editing it offline and post the change to the server after some interval.
22. GIS Web application and mobile App should load and view map on browser and mobile app with all Feature classes along with Creating/deleting/modifying features.
23. GIS Software shall support an integrated customization environment to change the UI and to add custom functionality programmatically.
24. GIS imaging software package shall be of latest version and shall consist of spatial data base engine with database such as PostgreSQL/MY SQL/DB2/Informix or any other RDBMS confirming to ANSI/ISO SQL-200n standards with latest version. The GIS application shall be an Open GIS consortium (OGC) registered compliant product which is time tested and widely deployed at multiple utilities Worldwide.
25. GIS Software should have functionality to PAN the display across the screen.
26. GIS Software shall have provision for linking and maintaining records.
27. GIS Software shall have sorting and viewing electrical area or feeder/administrative area wise.
28. GIS Software shall be capable of creating changes in network entity attributes in relation to addition/deletion of network entities in response to other business process.
29. GIS Software shall generate color graphic displays of the system network which can be zoomed in / out. This shall represent each of the elements in the electrical system with suitable differing colors for the elements. The colour coding will be based on the rated voltage, percentage of voltage at each bus, percentage of loading of section, symbols or any other chosen parameters by user
30. GIS Software shall be capable to perform Geographic Attributes query.
31. GIS Software shall be able to dynamically select one or more of the attributes of an object, to be displayed as label of the object. This can be for viewing, plotting and printing purposes.
32. GIS Software shall have dimensioning capabilities.
33. GIS Software shall specify the real time measurement / length while drawing the lines.
34. GIS Software shall have capability to edit graphical & textual data.
35. GIS Software shall have provision of version management of Data.
36. GIS Software shall have the facility of representing technical data of the internals of system entity. For example, with a click of mouse on the GSS/PSS user shall be able to see internals of the substation and on taking the pointing device to a Power Transformer, a 'pull down' menu to show user options such as Technical data attributes, connectivity data or maintenance record shall be displayed on request.
37. GIS Software shall have data export capability into XML format.
38. GIS Software shall be able to import satellite imagery in different formats like Geo Tiff, JPEG etc.
39. GIS Software shall have the ability to import and display both color and multiple gray scale raster images. Transparency of the image shall be user controllable to allow for viewing items regardless of drawing priorities. The importable raster file formats shall be of the same types listed in the previous requirement.
40. GIS Software shall be able to open / attach all standard format files like Visio, Power Point, Excel, DWG etc. for schematic representation without importing into the mapping system.
41. GIS Software shall provide query builder and support multiple / complex SQL queries.
42. GIS Software shall support Sorting, Filtering and display records in Tabular/ Browser formats.

43. GIS Software shall support automated spatial and attribute data entry validation.
44. GIS Software shall be able to translate vector and raster geospatial data sets from a variety of standard and nonstandard projections and datums.
45. GIS Software shall be able to be configured to add additional asset types and to modify existing definitions of assets, such as the addition of more attributes, without the need to involve the software vendor. Such configuration shall be achieved using Data Dictionary style tools and shall not require re-compilation of the software.
46. GIS Software shall have multipoint editing permissibility i.e. In an enterprise-wide GIS, there may be different groups working on the same datasets at remote locations. To enable them to work on the dataset, one shall be able to port the owner's schema to the remote database, let them edit the dataset and then bring back the changes after some time interval.
47. GIS Software shall have published APIs and development tools for custom development and interface to master database.
48. GIS Software shall have capability to serve database directly to internet mapping server & desktops.
49. GIS Software shall support raster images and other raster operations (mosaic, catalog, editing).
50. GIS Software shall have capability to preview Map data and table data.
51. GIS Software shall have capability to define and manage coordinate systems.
52. GIS Software shall have capability to create and maintain metadata and store it as XML data.
53. GIS Software shall be able to create layers from all supported data sources including coverage feature classes; shape files; computer-aided design, TIN, raster, and geo database feature classes; or tables containing x,y coordinates.
54. GIS Software shall be able to create group layers from multiple data sources including vector overlays on top of raster data/images.
55. GIS Software shall allow users to define and save various user specified views/ Layers, for example by storing collections of layers.
56. GIS Software shall have the ability to show only certain layers at a given scale and for a given condition.
57. GIS Software shall have the ability for the operator to turn layers on and off at will.
58. GIS Software shall have in built industry standard Reports Generation tool both at Server and Desktops.
59. GIS Software shall have facility to Create, Edit and Move Bookmarks.
60. GIS Software shall support spatial querying engine that can retrieve specific features based upon a user determined buffer zone around a point, line, or polygon.
61. GIS Software shall have facility of cluttering and decluttering. The process of showing more details as users zooms in is called cluttering and process of hiding details as user zooms out is called decluttering.
62. GIS Software shall have capability to provide logical circuit connectivity to ensure compatibility.
63. GIS Software shall have capability for authorization to modify directional connectivity.
64. GIS Software shall require the use of specified projections.
65. GIS Software shall support the ability to label layers, manipulation of symbols.
66. GIS Software shall provide a list of map interaction tool supported by the application.
67. GIS Software shall provide a display threshold for vector layers.
68. GIS Software shall allow user to focus on an area of interest.
69. GIS Software shall provide the ability to manipulate map features.
70. GIS Software shall have capability to set the extent of raster image.
71. GIS Software shall have capability to change image brightness, contrast, and transparency.
72. GIS Software shall have provision of extensive library of symbols.
73. GIS Software shall have ability to accept user defined symbols.
74. GIS Software shall have capability to interface with industry standard analysis tools like CYME , SynerGEE, etc.
75. GIS Software shall have capability for plotting/printing of graphical areas.
76. GIS Software shall be able to search and Zoom to location based on the Address provided in input.
77. GIS Software GUI ability to accept query & provide result data on diagram.
78. GIS Software stencil provided in the interface would have icons to represent constituents of the electrical network like feeders, substations, DTs, Junction Boxes, Cables, Poles and Customer Connections etc. These can further be color coded to easily identify objects of similar rating.
79. GIS Software shall have capability for pictographically representing assets in the Transmission & distribution network.
80. GIS Software shall have provision of stencil to create Single Line Diagram (SLD).
81. GIS Software shall have capability to create multiple features easily.
82. GIS Software shall include the Layer Management features. This function shall enable to assign descriptions to the layer.
83. GIS Software shall have capability to search & zoom in any drawing.
84. GIS Software shall have capability to attach scanned drawing.
85. GIS Software shall have capability for tracing of Electrical connectivity.
86. GIS Software shall have capability for splitting of existing cable.
87. GIS Software shall have capability to calculate the length of downstream or upstream from the selected element.
88. GIS Software shall have capability to represent cables/ switchgears /HV- EHV cables etc.
89. GIS Software shall be able to carry out merging of the two cables into one cable If parts of the cable are running across more than one sheet.

90. GIS Software shall have facility so that cable of same voltage levels can only be connected with each other, i .e .if by mistake, user connects LV cable/ equipment with HV/EHV cable/equipment ,the software shall generate error message.
91. GIS Software shall have capability to check electrical Continuity for power flow after editing.
92. GIS Software shall have capability for electrical item editing.
93. GIS Software shall have capability to redefine the no. of feeder entry/exit points in the bus bar to a higher number as per the requirement.
94. GIS Software shall have capability to insert an electrical element in to an existing cable. This will split the existing cable into two sections and each section's alpha data will be displayed in a mask for update. Accordingly, the graphical and non-graphical data will be updated.
95. GIS Software shall have capability to check the electrical network line continuity for the power flow through graphical and non- graphical data.
96. GIS Software shall have capability for electrical line tracing till the end of the line by considering the switch positions on the line. The line will have to be highlighted after the tracing.
97. GIS Software shall have capability for edition facility for cables/ Tr. lines in software.
98. GIS Software shall have capability to compose the various types of cables with its technical information like type, material of the conductor, cross-section in the network cable symbol library. The list of cable type shall be available in the cable symbol library for selection in advance and for laying purpose in the field.
99. GIS Software shall have capability to display of Substation Information.
100. GIS Software shall have capability for representation of Sub-station Electrical Components such as High Voltage Cables/ Conductors, Circuit Breaker, Isolators, Transformers, Protective Relays etc.
101. GIS Software shall have Feeder Manager Properties.
102. GIS Software shall provide fully customizable editing environment.

3.7 Tentative scope of HRSI (High Resolution Satellite Imagery)

i. Supply of requisite Satellite Data.
ii. For creating the base map & land base data, bidder shall procure satellite imagery with spatial resolution less than 1 meter. The requisition letter will be provided by the purchaser. The cost of satellite imagery should be a part of the bid.
iii. The land base data should consist of all visible features such as Road Edges, Road Centreline, Footpath, Bridges, Underpass / Overpass, River, Streams / Nala, Building, Plots and Open Areas, Green Area & gardens, Major Land marks and local details of area as annotation in vector format.
iv. Support Services for supplied Satellite Data
v. Foreign Satellite Data Procurement (FSDP) Certificate issued by NRSC, the Satellite Data need to be supplied to NRSC for security vetting. After security vetting, the NRSC will perform the screening of data for the sensitive area, as per the existing procedure. After the clearance by NRSC, data will be provided to the user department.
vi. Cloud free (less than 20%) Satellite imagery map (as per Satellite Imagery Specification) to be procured by the bidder in digital form.
vii. Confirm to the correctness of the Imagery with respect to coverage and all the required parameters (Resolution, True Colour, Image Band, Nadir Angle, Cloud %, Vintage etc.)
viii. Post-delivery support for data quality
ix. Delivery of Satellite Data to NRSC for security vetting.
x. Delivery of Satellite Data to department from NRSC.
xi. Submit an Imagery Metadata Report describing area of interest, swath, time period, histogram, no. of scenes, RPB/RPC, off-nadir angel etc
xii. A sample area of minimum 25 sq.km. is to be submitted for assessing the quality of the product as per the area of interest for technical evaluation.
xiii. the supplied data are brand new, genuine/ authentic, not refurbished, conform to the description and quality
xiv. 40cm GSD or Better, Fresh stereo multispectral PAN sharpened satellite imagery rate for per Sq.KM.
xv. Off Nadir Angle (ONA) acceptable One leg 0-25 deg: second leg: system computed (0-35deg)
xvi. Delivery Media Hard Disk
xvii. Datum / Projection UTM, WGS-84
xviii. Format Geotiff, Image Bits/Pixel 16 bit, Tiling 16 x 16

3.8 Other Miscellaneous requirements

1. The proposed Software shall be hosted at purchaser's own Data Center (DC) located at Patna and DR center located at Gaya. All the software, middleware, database and associated licenses required for successful implementation, operation and maintenance of proposed solution during the entire project period shall be provided, implemented, operated and maintained by the bidder and shall be part of the technical and financial bids.
2. Software should consider all required hardware software, licenses, Database, cyber security and mobile apps with perpetual license.

3. Software should have separate test, development, and production environment.
4. Software desires to have a no-code/low-code solution that can be updated by users.
5. The proposed software application should have all the services required to maintain assets and record all the activities performed on assets to keep it up and running covering complete life cycle of assets.
6. Software should be User-friendly for maximizing staff efficiency and usage by numerous and various types of users. The system must be user-friendly with an intuitive user interface.
7. Software should be supplemented with mobile application for use of employees.
    7.1. Robust mobile application/s to allow for work to be completed in the field (Asset Survey/Verification, Asset Management, Maintenance Management, GIS work etc). It is important that the mobile application be platform agnostic (can be used on Apple and/or Android devices) and have remote capabilities
    7.2. The mobile application shall automatically save data while there is no network connectivity to ensure there is no loss of data, When connectivity is available the mobile application shall automatically synchronize the work that has been completed while offline.
    7.3. Authenticated Login, permission based
8. Software shall have robust reporting service connected to all the system's data tables.
9. Ability to easily and without coding create ad hoc reports by users.
10. Export reports to variety of formats (.docx, .xlsx, .pdf).
11. Ability to generate role-based or individual user dashboards.
12. Print reports directly from software (connected to printers) and review reports prior to printing.
13. Software shall be capable to integrate with present and future upcoming systems, presently BSPTCL is having SAP ERP system, SBPDCL & NBPDCL is having Billing & SCADA systems and there is a plan to implement ERP system in SBPDCL & NBPDCL.
14. Data Migration and Integration: The Bidder will be responsible for converting data from existing systems into the new system if required. Data to be converted may exist in multiple forms like Excel Spreadsheets, flat files, Microsoft Access, Adobe PDFs, jpeg, TIFF, GIS data formats (shapefiles, SDE Feature and Relationship Classes, REST Services, other,) CAD files, etc. The fresh survey data may come directly into the system but valuation related records proofs like PO etc may exists in image or paper form.
15. The bidder shall develop a mobile application for real-time inspection and maintenance task management, enabling field personnel to create, assign, and track maintenance work orders with the ability to update task status in real-time.
16. The bidder shall ensure that the mobile app integrates seamlessly with the central asset management system to capture asset status, condition data, and work order details for centralized tracking and analysis.
17. The bidder must incorporate geotagging capabilities within the app to enable accurate asset location mapping and condition assessments during field inspections.
18. The bidder shall integrate maintenance alert functionalities to notify field personnel of upcoming or overdue maintenance tasks, ensuring timely interventions and asset performance monitoring.
19. The bidder shall develop features for warranty management within the mobile app to track asset warranties, schedule necessary repairs, and automate warranty-related notifications.
20. The bidder shall ensure that the app allows field personnel to monitor asset condition and performance, facilitating efficient condition-based maintenance and prioritization of high-priority tasks.
21. The bidder shall include capabilities for generating reports directly from the mobile app on asset health, maintenance status, and inspection results for analysis and decision-making.
22. The bidder must ensure that the mobile application provides easy-to-use functionalities for real-time data entry, including asset inspections, condition assessments, and updates on ongoing maintenance work.
23. The bidder shall ensure that the app supports work order creation, progress tracking, alert notifications, and real-time updates that are synchronized with the central asset management system.
24. The bidder shall develop functionality for regular physical audits of assets, ensuring field personnel can validate asset existence and condition through the mobile app, with results synchronized to the central system.
25. The bidder must provide regular software updates for the mobile app to ensure compatibility with evolving operating systems, security patches, and performance optimization for effective field use.
26. The bidder shall design, develop, and customize the asset management software to meet the specific requirements of the organization, aligning with the workflow for asset inspection, maintenance, and management.
27. The bidder must ensure integration between the proposed asset management system and existing enterprise systems (e.g., ERP, GIS) to enable smooth data exchange and synchronization across all platforms.
28. The bidder shall carry out User Acceptance Testing (UAT) to validate that the mobile app and asset management system function correctly and align with the organization's operational requirements before full deployment.
29. The bidder shall provide stabilization support during the initial period after system deployment to address any technical issues, performance concerns, or user queries promptly and ensure smooth operation.
30. The bidder shall ensure seamless integration of asset management functionalities with GIS to map and track assets geographically, enabling efficient asset location and serviceability analysis.
31. The bidder shall incorporate real-time inventory management features in the mobile app to enable tracking of assets, spare parts, and materials in the field, ensuring that all inventory movements are recorded accurately.
32. The bidder must ensure that asset data captured via mobile devices during field inspections and maintenance activities can be automatically synced with the central system for accurate record-keeping and analysis.
33. The bidder shall integrate field survey data into the GIS system to enhance asset mapping, network visualization, and spatial analysis for improved asset management decision-making.
34. There should be physical or logical separation of the services offered.

35. Proposed solution should be web-based application architecture.
36. Proposed web-based solution has ability to run on all modern browsers (Edge, Chrome, Firefox, Opera, Safari, etc.).
37. Proposed solution should be GIS Centric to integrate directly with GIS system without duplication or replication of data.
38. Software shall be customizable (existing fields, forms/interfaces, Create unlimited custom fields, Create custom templates for work orders/maintenance checklists, configure approval workflows, Create custom dashboards and reports
39. Software shall have multilevel approval cycle; Role based access control such as Read, Write, Read-Write, addition/deletion/updating/alteration of Assets, Asset properties/attributes.
40. Software shall support unlimited asset count & users.
41. Software should have dual factor authentication using OTP and also with self-service password reset.
42. Software should have audit trail capturing mechanism for all transactions (add, update and delete) using transaction log reports, so that errors in data, intentional or otherwise, can be traced and reversed, throughout the project duration.
43. The system shall contain audit logs which tracks system activity. This audit log will record what data was changed and by whom, the time it was changed as well as the data. This shall only be available to users with the administrator role. The system shall provide the ability to measure usage trends, daily average time spent in the application, days when each user is active in the application, and number of events/actions a user has performed.
44. Proposed system shall be able to manage personnel/users of the system, organizational structure, clear authority hierarchy, clear maintenance procedures, clear policies.
45. System will include administrative module allowing system administrators to add, edit, or remove users, create user roles, and assign permissions.
46. Software should provide granular control over user permissions, allowing to restrict access to specific features and certain types of sensitive data.
47. Software shall support different administrators for different types of Assets.
48. Software shall have advanced search facility based on different search criteria.
49. Software shall preserve all the transaction details and asset details during the contract period.
50. Software should have access controls measures to ensure that the databases are not tampered or modified by the system operators or database administrator.
51. Software should be bug free without any back door to the hacker and the selected bidder should submit the code audit report as and when changes are carried out in the software.
52. Software should comply with the laws of the land/guidelines/regulations/frameworks as per IT Act 2000, IT Act rules 2011 including all amendments thereon.
53. The ownership of all the systems & data always resides with purchaser. The bidder will only act as a custodian. No part of the data shall be used by the service provider for any purpose including marketing and data mining.
54. Proposed solution should encrypt the data in transit and at rest using atleast AES 256-bit encryption. In-transit and at-rest malware protection and remediation.(powerful data encryption, employ secure storage protocols, and regularly perform data backups)
55. The Train the Trainer model is adopted for imparting training for the proposed Software. Agency shall be responsible for imparting training to the master trainers on developed applications.
56. Online user guides will be available and accessible via the application. User guides will be available for both the mobile and the web application.
57. Agency should take periodic backup of the data to prevent loss of Data due to data corruption, data base crash etc.
58. Agency should handover the complete system after completion of contract period or upon termination.
59. Agency should conduct vulnerability assessment and penetration testing (VAPT) of delivered infrastructure through CERT-IN empaneled vendors and mitigate the vulnerabilities if any. The report has to be submitted every half year.
60. Agency should have well defined Business continuity plan in case of unforeseen emergencies.
61. Agency should provide helpdesk from 9.00 AM to 6.00 PM through e-mail and telephone on all working days of the Bank.
62. Agency shall provide 24/7 technical support for the life of the contract.
63. Agency will integrate the relevant modules, functions etc. of proposed Software with other applications of the purchaser as per the requirements.
64. Agency shall carry out As-Is Study of existing systems, IT Applications & Solutions, Business process, End user's competency etc along with requirement gathering workshops to identify the Gaps and areas of improvements in current state.
65. Agency shall ensure that complete documentation of proposed Software is provided with comprehensive user manuals, and adhere to leading documentation practices/ guidelines. The following documents are the minimum requirements:
    i. Software design document (SDD) containing complete architecture of the proposed solution
    ii. Technical Design Documents – HLD & LLD.
    iii. Business & Process Design Documents.

iv. Systems Manual Detailing the data structure, table, forms and report structures.
v. Operations Manual providing instructions for installing the application, troubleshooting, interpreting message logs, and FAQs (Frequently Asked Questions).
vi. User Manual providing detailed instructions on how to use the software. In addition, it shall describe how to access, submit inputs to, and interpret outputs from the application.
vii. A data dictionary listing out all the data elements shall be prepared.
viii. Detailed documentation on Database Management specific to the project and the applications deployed.
ix. All documentation will be supplied both in Hardcopy and Softcopy format.
x. Each process document shall clearly define the roles and responsibilities, detailed steps for execution the defined task, detailed configuration steps etc.

3.9 General Requirements

1. SI shall prepare and submit a detailed project plan for following:
   1.1. Software development /customization, implementation and development team deployment.
   1.2. Survey of assets and survey team deployment
2. The SI shall deploy a dedicated experienced team for software development, project management, installation, integration and testing, implementation required for deployment of the proposed system.
3. Every software development must be documented in detail and the code / script should be properly annotated with comments.
4. The proposed/developed software application system shall have common UI and data model. Proposed/developed software is intended to handle every aspect of the asset lifecycle, Store/Inventory management, GIS related requirements, Asset operations & Maintenance aspect and flexibility for integration with other systems.
5. The SI shall ensure that the proposed application software system provides adequate interfacing mechanisms (both at the application and data level) with a view to integrate future applications of NBPDCL. Such interfaces shall follow industry standards such as Application Programming Interface (API's) and web services, etc.
6. The SI shall develop, supply and install the application, database and related software, integration tools, along with the source code and requisite licenses. The SI shall also describe and document the process to be followed for installing and operating the same.
7. The SI shall consider stakeholder inputs when they are finalizing all processes including user interfaces, mode of data entry, storage and retrieval, output reports, queries, and the application design as a whole. Essentially it is expected that the SI shall follow a SDLC Agile framework in implementing the project establishing regular Conference Room Pilots.
8. SI to suggest industry standard best practices for backing up (archiving), purging and restoring current / future data.
9. The UAT shall be carried out in the Testing environment created. Bidder shall be responsible for setting up the Testing environment and also for creating / populating the necessary configuration data as well as master data as would be required for the purpose of UAT.
10. The patches/fixes shall be tested by the support team of SI in Development environment and subsequently UAT will be done in the Testing environment before they are implemented in production.
11. SI shall seek OEM's advice in using high-availability and other database features like partitioning, performance tuning etc. Database best practices like indexes, custom Partitioning (using relative merits of range, list, hash, composite partitioning etc.) should be utilized to get additional performance.
12. In the new system, as per industry standard practice, for any scanned documents created by user, images shall be stored outside the Billing system database in a different file server as a part of document management system and only the document link shall be available in the proposed system database.
13. The ownership of the data generated upon usage of the system, at any point of time during the contract or expiry or termination of the contract, shall rest absolutely with the NBPDCL.
14. Application End Users (Internal):
    14.1. Currently the total number of application end users are 8,000 plus (approximate)
    14.2. Overall end user growth would be 10% per year
    14.3. System will be designed for Minimum User Concurrency of 8000 concurrent users and should be capable of suitably scaling up to support concurrent operations beyond this minimum specification.

15. Design Considerations for proposed Solution Stack

a) Application Architecture Requirements:

i. The system should have adequate redundancies so as to have no single point of failure for the solution.
ii. The application and database tier should consist of clustered nodes on a fail-over configuration in order to provide a highly available system.
iii. The system should be flexible and scalable to support NBPDCL's future requirements.
iv. The architectural designs and patterns should be adapted to enable the high performance.

v. The solution landscape should be architected with following key drivers in mind:

   a. High Availability
   b. High Performance
   c. High Security
   d. Modularity
   e. Scalability
   f. Load Sharing
   g. Resource Optimization
   h. Usage Requirements
   i. Integration Requirements
   j. Maintainability

vi. Implementation of the Solution shall consist of the following-

   a. Proposed application design, development, and implementation of envisaged Solution.
   b. Deployment of Proposed solution components in DC & DRC of NBPDCL.
   c. Maintenance of proposed & implemented system.
   d. DC & DR ICT systems supply, install, and Commissioning.
   e. All DC & DR device supply, install & maintenance (Servers, Networking Devices, SAN Storage, SAN switches, Tape Library, Racks, Cyber Security Solutions (HIPS), OS/ Virtualization, DB, backup S/W, EMS/NMS, etc.) required to deliver services mentioned in RFP.
   f. Establishment of Network Connectivity within DC & DRC of deployed proposed solution.
   g. Application Training to end users of all power companies along with Capacity Building
   h. Operations and Maintenance of the proposed solution & systems for the entire project period.
   i. Bidder shall be responsible for all activities to make available proposed application services to the users like System Administration, Database Administration, storage and backups, Disaster Recovery, Integration support, Early detection of issues, correction and self-healing, Sizing, Application and Device monitoring etc.
   j. Bidder shall manage the underlying IT infrastructure and foundation services, the operating system, and the application platform etc..
   k. Bidder shall provide services for management of security environment to maintain performance at optimum levels on a 24 x 7 basis.

vii. The system should include a fully configurable and extensible data model that is maintained during upgrades.

viii. The system shall be dimensioned to accommodate the ultimate size of projected asset base for current and future requirements.

ix. The system should provide an intuitive user interface which is web browser structured, context-driven and process-centric user interface.

x. The system should be able to interface with other applications to extend the business flow across different applications.

xi. The Technology platform should support Interoperability & based on Open Standards It should be able to inter-operate with other heterogeneous platforms.

xii. The System shall support all standard web browsers (like IE Edge, Google Chrome, Firefox etc.).

xiii. All the products proposed and developed as part of the solution should be supported in India.

xiv. Agile standard development methodology should be adopted for Software Development, covering the entire SDLC (Software Development Life Cycle)

xv. Identify and Integrate with all internal and external systems and services as per the requirement of the proposed system.

xvi. The System shall be integrated with communication channels like SMS Gateways, Payment Gateway etc.

xvii. Bidder needs to provide SMS and e-mail services as per requirements mentioned in this RFP.

xviii. The System should have integrated security/ monitoring features with the following:

   - Designation-wise creation of roles and thereafter tagging the same with relevant user with restricted area of their place of authorization ie sub-division / section. Provision to allot a user one or more or all area of a company shall be made. A user shall be restricted for change / insert/ select data of allotted area only
   - Definition of Roles/user group/user type and Users
   - Define Role-wise add/ edit/ view/ delete rights for each Entry Form/ Report in all modules
   - Digital Time and User Stamping of each transaction
   - Online monitoring of the User activities using user activity logs.

xix. System shall maintain Audit Trail related to access to specific elements of the application. This audit trail should provide a facility to trace the path of changes in application software and provide indications of possible areas of misuse.

xx. As NBPDCL wants to rollout the proposed solution stack across state to enhance the service, the selected/ developed software must be able to meet all the requirements mentioned in this RFP.

xxi. All tools required for load testing and performance testing should be as per industry standards. In case any third-Party tools are required, the same are to be arranged by the SI for this project on its own cost.

b) Open and Industry Standards for Interoperability

The proposed solution must have highest degree of interoperability and the solution components should be standard based and adopt an open approach rather than support a specific technology or vendor. Proposed solution stack should integrate and be interoperable with Legacy existing systems for data flow, data updation etc.

c) Service Oriented Architecture (SOA)

Proposed solution components should support SOA principles to provide specific services using well defined interfaces. Identify opportunities for cross-functional components or subsystems and implement them in such a way that there is an opportunity for reuse. This defines integration architectures based on the concept of a service and becomes relevant especially when there are multiple applications in an enterprise and point-to-point integration between them involves complexity.

d) Integration and Support for API / Microservices Driven Design

NBPDCL envisages Proposed solution as a system API**/** Microservices driven architecture at the core of it. Proposed system features can be accessed via any user interface (internal or 3rd party applications) which shall work on top of these API/Microservices. Adoption of open API/ Microservices and open standards are of paramount importance for the Proposed system in NBPDCL. Data access should preferably be through API/Microservices, application should access data directly from the storage layer or data access layer with proper security. Openness must be supported by open standards and vendor neutral API/Microservices and interfaces for components should be used/built.

i. The integration middleware should use Service Oriented Architecture (SOA) and/or other forms of Application Program Interfaces/Services or Micro Services and use publish/ subscribe mechanism.
ii. The integration mechanism adopted must have minimal impact on the existing systems.
iii. The access to data will only be through business rules/validation/workflows.
iv. The integration middleware/interface must validate the Data to be integrated.
v. System must maintain integration logs that confirm the success or otherwise of the interface, complete with control totals

e) Support for Proposed Application Deployment

Application shall support various features built to delivers as microservices. The code shall be packaged with all dependencies (runtime, system tools, system libraries and settings) as containerized image and shall use tools like Docker Engines in run-time. Legacy applications that were made for datacenters environments and have binaries & libraries packaged as one single monolith shall not be used.

The application shall be delivered on one single metric including application and hardware infrastructure platform as below

- Infrastructure: The application be delivered with autoscaling infrastructure. This includes core compute, memory, network & IOPS to meet the SLA requirements. Bidder needs to keep sufficient ICT infra as spare to meet the scaling requirement as per SLA.
- Platform: The application shall be delivered all required platform tools such as operating systems, database, middleware, and other platform software required for application etc.

f) API based approach for Integration

Integration with other systems is a critical requirement for proposed system. NBPDCL envisages to adopt Open API as the guiding paradigm to achieve the dynamic integration goals. Proposed system would develop a portal (for all users) & Mobile app but that would not be the only way for interacting with the proposed system. NBPDCL envisages the below benefits from API based integration:

i. Consumption of services across technologies and platforms (mobile, tablets, desktops, Kiosks etc.) based on the NBPDCL's business requirements.

ii. Automated exchange (upload and download) of data.

iii. Ability to adapt to changing business rules and data exchange models.

g) Ease of Management

The solution must factor capabilities and features that allows for ease of management and trouble-shooting. The underlying technology needs to be user friendly. By having easy to use principle, training can be kept to a minimum thereby aiding IT change management and the risk of using a system improperly can be minimized. The solution should provide support:

i. Support maintenance, enhancement and refactoring of the solution should be possible with minimum or no architectural changes so as to minimize the time required for changes.

ii. Even where Architectural / DB Schema changes are required, the change implementation should be designed to be carried out in effectively minimal time.

iii. Administering the solution with minimal user intervention and using role-based administration, well defined user interfaces and access policies.

iv. Ability to log and report at a sub-system level state, health of the solution. It shall also log different events encountered by the subsystem.

h) N-Tier / Modular Design

The application user interface, logic, data must be separate. The logical design of components, subsystems, application systems and databases will be ideally partitioned. These partitions shall have well-defined interfaces established. Logical boundaries are needed to separate components from each other. Modular design is more adaptive to changes in internal logic, platforms, and structures. It is easier to support, is more scalable and supports interoperability.

i) Backup and Recovery

1. Objective of Data backup solution is to
    i. To maintain a centralized backup of all the transactions/activities carried out from each node in order prevent any data loss ease restoration of data as and when required
    ii. To make data restoration in case of any data loss.
    iii. The Bidder must implement suitable solution which will ensure that backup is done in fast, efficient & reliable manner without putting much load on the existing infrastructure
    iv. The solution should be for automating backup solution including latest features such as data encryption etc.
    v. It may also be noted that all the activities in the IT operation are subject to audit /inspection by Security Auditors. Selected Bidder must take same into consideration while delivering the desired services.
2. Backup and Restoration solution will be designed and sized to meet system data volume requirements optimally without any risk of data loss.
3. The Bidder shall provide the architecture of the proposed backup and recovery solution include features and functionality designed to minimize impact on production servers, applications, and network bandwidth and ultimately the end user of the production.
4. Backup should be fully managed backup solution that makes it easy to centralize and automate the backup of data across deployed infrastructure.
5. The Backup Solution should have Self check capability to confirm that the backup taken has not been corrupted over the network and is restorable/usable. Bidder shall periodically testing the reliability of the backup by performing restoration activity ICT infrastructure required for this needs to be provided by bidder without any additional cost to purchaser.
6. The Restoration solution should be able to restore the data without any loss from Previous Backup up to last minute of backup done, ensuring Zero Data Loss when restored.

7. Backup solution must have a console-based control which allows configuration of backup policies and monitor backup activity for all resources, such as Block Storages, Compute instances, relational databases, DB tables, file systems, and Storage Gateway volumes from a central location.
8. It should be able to automate and consolidate backup tasks previously performed service-by-service, eliminating the need to create custom scripts and manual processes and be able to create policies that automate backup schedules and retention management.
9. Backup solution must support disk-to-tape backup and must comply fully automated solution.
10. AGENCY after configuring and implementing the complete backup solution will demonstrate retrieval of data directly to the target server.
11. AGENCY will develop a schedule for Data Backup activities. There will be detailed status reporting and/or Dashboard of Back-ups being taken in scheduled manner.
12. Agency shall be responsible to take backup of all software applications including system software, application software stack, solution stack used in project and keep it backup copy up-to-date i.e. whenever there is change in application software backup needs to be taken and keep it in safe and secure place. These software applications will include all software used like OS, DB etc. The ultimate purpose of this backup is to restore the complete system from this software backup if required along data backup.

j) Technical Obsolescence

Bidder should not provide any component in proposed solution stack/ technology and all associated software like Middleware, DB etc. which is at the verge of sun set and becoming EOS/EOL. The Proposed systems including ancillary stack, which are at a risk of technical obsolescence over the next few years and over the operating life of the system should be identified and reported. The compatibility between the various elements of the system needs to be considered and mitigation options, not be limited to periodic update from OEM/system supplier, shall be indicated in detail. Bidder will submit yearly compliance certificate detailing inventory being used by them with upgraded Version detailing and confirmation that no component is technically obsolescent.

k) Dynamic Configurability of proposed solution stack

Configuration of proposed solution stack should allow NBPDCL to implement changes based on changing business requirement on the fly and dynamically. All configurations' items & parameters such as policy decisions, business rules, etc. shall be configurable centrally within proposed system. Managing configuration centrally shall ensure single source of truth is used across proposed application components & DB.

l) Proposed solution stack Security

1. System shall provide different and unique login IDs for all the users of the system and track all activities of all the logins and maintain audit trails.
2. User credentials for external and internal users shall be stored in separate repositories.
3. The system will be able to grant specific access rights to each login or group of logins as per the business requirement and policy. The application software shall be flexible enough to grant access to the users through a web enabled GUI.
4. The system should have Single Sign-On (SSO) feature (i.e., a user logs on once using individually defined user name and password, which permits the appropriate level of access to all applications).
5. The system should have two factor authentication feature (i.e. system needs to provide second level authentication such as OTP in additional to user id/password) for users making any changes in the system.
6. The application should avoid not allow usernames and passwords unencrypted over the network.
7. Authentication and Access to proposed solution stack should be as per industry best practices and NBPDCL's role hierarchy and security policy.
8. Support Workflow for various requests, review and approval required within various business processes.
9. Web based System Administration of entire proposed solution stack
10. Proposed solution stack should have Configurable Function Access Control
11. Proposed solution stack should have Configurable Data Access Control

12. Proposed solution stack shall have features to protect data at database level even DBA and administrator not have access to view the data (i.e. data stored in database should be encrypted and data in motion also secured). Users shall be allowed to access and see only data for which they are authorized to see and access.
13. Strong encryption capabilities for data in transit or at rest
14. Identity and Access Management (IAM): Control users' access to services. Create and manage users and groups, and grant or deny access
15. Managed Threat Detection: Managed threat detection service with a more accurate and easy way to continuously monitor and protect services and workloads
16. Certificate Manager: manage, and deploy Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificates.
17. SI must ensure that the non-production and the production environments are in separate VLANs so that users of the two environments are separated.
18. The SI needs to review and validate the security configurations, review the notifications and patches released by the OEMs and validate that the same is being taken into consideration during operations, confirm that the audit trails (e.g., who is accessing the services, changes to the configurations, etc.) are captured for supporting any downstream audits of the projects by the finance or audit organization such as STQC, CERT-IN etc.

3.10 Database Requirements

i. Bidders can propose any R-DBMS/DBMS solution of their choice which should be capable of supporting the large asset and user base as mentioned in RFP.

ii. Database solution/product choice should consider that a proven database is required which can maintain linkage between multiple asset attributes, values, type, categorizations and should facilitate seamlessly indexed data searches over a connected year on year accumulated asset data accessible by multiple system modules.

iii. The database management system shall at least have the following features:

- High performance rating
- High Availability
- High data concurrency
- High data security
- Data integrity
- Support for large data volumes

iv. The system shall be able to support:

- Periodical or yearly archival of transactional data
- In-built capability for backup and recovery with zero data loss
- Database replication on real-time basis

v. Data exchange formats shall address the requirements of error check, data validation and audit related requirements.

3.11 Solution Sizing

The SI will be responsible for adequately sizing the necessary compute, memory, and storage required, building the redundancy with horizontal and vertical scaling into the architecture (N+1) and load balancing to meet the requirements of their proposed solution and the service levels mentioned in the RFP. The utilization of underlying ICT infra should not exceed more than 60% at any moment, bidder needs to do the proper sizing considering this. The response time of all application pages/services at any time should be less than 3 millisecond. DR shall be 100% mirror image of the DC. SI to provision DR drill for a minimum of once in a year. In the event of a Primary site failover or switchover, DR site will take over the active role, and all requests will be routed to that site.

The total minimum DC and DR physical cores must be more than 1600 and SAN storage must be more than 200 TB SSD usable on raid 6 otherwise solution proposed by bidder may be rejected.
Bidder are free to use existing ICT infrastructure available at DC and DRC without affecting existing solutions running. Bidder shall be accountable to maintain all the used devices either new or existing (in case used old devices).

3.12 **Go-Live Acceptance**

The following table will be used to ensure compliance to all the activities prior to the Final Go-Live Stage before issuing the 'Go-Live Acceptance Certificate'

Sl. No.	Project Activities	Compliance (Yes/No)
1.	Unit Testing	
2.	Completion of Customized proposed solution stack	
3.	Execution of System Integration Testing	
4.	Execution of System Perform Test (Stress, Load, Disaster Recovery, Backup Tests etc.)	
5.	Commission of DC & DR Environment	
6.	Proposed solution Software Provisioning & Installation	
7.	Proposed solution System Installation on DC & DR Infrastructure	
8.	User Acceptance Testing (UAT)	
9.	Completion of Master Data	
10.	End User Creation with defined roles & authorization	
11.	Proposed System Accessibility to all End Users	
12.	Successful Completion of End-User Training (Rollout locations)	
13.	Successful Completion of Stabilization period after Proposed System Rollout	
14.	Error free operations and running of all Proposed System modules with real-time data for a period three (3) months.	
15.	Documentation of all the issues/problems that come up during the stabilization period and resolution methodology / solutions	
16.	Helpdesk Set-up	
17.	Establish Service Level Agreements	
18.	Go-Live Approval	

3.13 **Facility Management Services (FMS)**

The Bidder shall be required to provide the services to manage entire System installed & commissioned for NBPDCL and other power companies in order that the System have maximum availability to enable NBPDCL and other power companies to realize their desired business objectives.

a) System Management Services shall be provided by Bidder in order that maximum uptime and performance levels of installed System is ensured. As such, Bidder is expected to provide services as per ITIL (IT Infrastructure Library) standards with performance levels meeting or exceeding those mentioned in Service Level Agreement (SLA) agreed between NBPDCL and the Bidder.

b) The Bidder shall develop specific automated helpdesk with necessary ticketing tool to be able to log and resolve tickets pertaining to the System. To achieve the desired Service Levels, the Bidder may need to interact, coordinate, and collaborate with the other vendors of NBPDCL and other power companies. Bidder will act as the Single Point of contact for all issues relating to the Service Levels.

c) The Bidder will be primary responsibility of providing desired services during the project implementation period. The duration of Facility Management Services (FMS) shall be for 5 years which shall start immediately from the date of Enterprise wide Go-Live of System at all locations of NBPDCL and other power companies.

d) The Facility Management Services (FMS) would, include following major areas of services.

i) Ticket logging through Help Desk Services

ii) Technical Support Services

iii) SLA monitoring etc.

e) The Bidder shall provide adequate resources for supporting the above said services at the user locations. The Help Desk agents shall coordinate the assigning of user calls to FMS resources. An indicative number of resources required for this is mentioned in minimum resource requirement of this RFP.

f) Bidder shall provide the Facility Management Services for agreed duration for each day coinciding with the business hours of that particular location and Bidder shall also make arrangement for handling of emergency calls.

The NBPDCL and other power companies runs 24*7*365 days but the business hours of the utility may be considered as 08:00 AM to 6:00 PM.

g) The Bidder shall submit a comprehensive Facility Management Services process, plan and deliverables for the entire System including the field activities along with the proposal for approval of NBPDCL and other power companies.

h) Bidder shall perform periodic health check-ups and troubleshooting of all the System and implement proactive rectification measures as required.

i) FMS Team: Bidder shall appoint an FMS Helpdesk Coordinator of project in the Facility Management Services phase. FMS Helpdesk Coordinator will be single-point-of-contact for responding to all the queries or accepting its problem management requests from NBPDCL and other power companies. The FMS Helpdesk Coordinator would be stationed at Corporate Offices/ Head Quarters of NBPDCL and other power companies. The helpdesk team shall be stationed at NBPDCL and other power companies HQ. The space for setting up the helpdesk would be provided by NBPDCL and other power companies. All requisite infrastructure and resources required for smooth functioning of the FMS helpdesk would be provided by the Bidder at no extra cost to NBPDCL and other power companies.

j) The Bidder shall deploy enough and qualified, skilled manpower to carry out the FMS services. It is imperative for FMS staff to know the tender including scope of work, solution etc. and be able to deal with all the queries related to the System. The Bidder shall ensure replacement in not more than 7 days of the FMS staff whose performance is not found satisfactory by the NBPDCL and other power companies.

1) Functional Support

The Functional Support Services for application contemplated herein shall be provided for system implemented by Bidder. The Bidder shall render both on-site maintenance and support services to NBPDCL and other power companies.

The scope of the services is as below: -

a. **Enhancements and defect fixes.**

a) Bidder shall incorporate technological changes and provide enhancements as per the requests made by NBPDCL and other power companies. Bidder shall perform changes, bug fixes, error resolutions and enhancements that are incidental to proper and complete working of the application.

b. **Routine functional changes:**

a) The Bidder shall be responsible for user and access management, creating new report formats, and configuration of reports. Bidder shall provide user support in case of technical difficulties in use of the software, answering procedural questions, providing recovery and backup information, and any other requirement that may be incidental/ancillary to the complete usage of the application. The Bidder shall perform user ID and group management services. The Bidder shall maintain access controls to protect and limit access to the authorized End Users of NBPDCL and other power companies.

The services shall include administrative support for user registration, creating and maintaining user profiles, granting user access and authorization, and providing ongoing user password support.

c. **Tuning of the solution:**

a) The Bidder shall also undertake tuning of system, databases, any third-party software, and any other components provided as part of the solution to optimize the performance.

b) Deployment/Re-Deployment of software solution: The Bidder shall be responsible for deployment of the software solution and re-deployment in case of any upgrades to the underlying hardware or operating System and carry out any necessary testing.

c) The key service level requirements need to be ensured by the Bidder during the operations and maintenance period. These requirements shall be strictly imposed and either NBPDCL and other power companies or a third-party audit/certification agency shall be deployed for certifying the performance of the Bidder against the target performance metrics as outlined in the SLA's defined in the RFP.

2) **Operations and Maintenance support for System**

Bidder shall provide System application development and maintenance/support services on an ongoing basis, especially in response to support required for integration, data exchange along with requests for changes in the applications through an ATS. Support in software development and maintenance shall include:

a) Maintaining usage of deployed software applications to ensure its effective day to day operational usage. The job includes support maintenance of all the application modules along with system software.

b) Bidder shall debug and fix the operational problems, perform error handling while running the application during the project period.

c) Bidder shall generate the additional system report, modify existing reports and queries, as per user's requirement.

d) Bidder shall provide hands-on assistance to the users to resolve any operational doubts as and when needed while the application is in operations.

e) Bidder shall be responsible for Integration of deployed software applications with other applications/systems during the project period.

f) Bidder shall document all the changes incorporated in the application software and improve the documentation of existing user/system reference manuals of different modules wherever it is necessary and required.

g) Monitor underlying DC & DR services, performance reporting and metrics, and ensure the overall reliability and responsive operation of the underlying DC & DR services through both proactive planning and rapid situational response.

h) Agency shall create and maintain all the necessary technical documentation, design documents, standard operating procedures, configurations required to continued operations and maintenance of services at DC & DRC.

3) **User Management Services**

The user management services shall include Directory Services for NBPDCL and other power companies which comprises of the following services:

- Domain management
- Group management
- User management
- Implementation of domain policies and standards etc.

The above-mentioned directory services shall be implemented and used within the enterprise environment of NBPDCL and other power companies including DC and DR

4) **DC/DR Infrastructure Operations and Maintenance Services**: Bidder shall carry out the below mentioned activities

1. **Resource Management**

Bidder shall be responsible for adequate sizing, provision and maintain of the necessary compute, memory, and storage required, building the redundancy into the architecture (including storage) and load balancing to meet the service levels.

While the initial sizing and provisioning of the underlying infrastructure may be carried out based on the information provided in the tender, it is expected that the Bidder, based on the growth in the user load (peak and non-peak periods; year-on-year increase), will scale up or scale down the compute, memory, and storage as per the performance requirements of the solution and meet the SLAs.

a) In addition to scaling, for any major expected increase in the workloads, carry out the capacity planning in advance to identify and provision, wherever necessary, the additional capacity to meet the user growth and/or the peak load requirements to support the scalability and performance requirements of the solution.
b) The scaling up/scaling down has to be carried out with prior approval by NBPDCL and other power companies. Bidder shall provide the necessary details including the sizing calculations, assumptions, current workloads, and utilizations, expected growth /demand and any other details justifying the request to scale up or scale down.

2. **Patch and Configuration Management**

Bidder shall manage the instances of storage, compute instances, and network environments. This includes agency-owned and installed operating system and other system software. Bidder is also responsible for managing specific controls relating to shared touch points within the security authorization boundary, such as establishing customized security control solution examples include, but are not limited to, configuration and patch management, vulnerability scanning, disaster recovery, and protecting data in transit and at rest, host firewall management, managing credentials, identity, and access management, and managing network configurations.

3. **Security Administration**
   a) Appropriately configure the security groups in accordance with the Security policies.
   b) Regularly review the security group configuration and instance assignment to maintain a secure baseline.
   c) Secure and appropriately segregate/isolate data traffic/application by functionality using DMZs, subnets etc.
   d) Ensure that the infrastructure and all systems hosted on it, respectively, are properly monitored for detection of unauthorized activity.
   e) Conducting regular vulnerability scanning and penetration testing of the systems, as mandated by Government Agency's policies.
   f) Review the audit logs to identify any unauthorized access to the government agency's systems.
4. **Monitoring Performance and Service Levels**

Bidder shall provide and implement tools and processes for monitoring the availability of assigned applications, responding to system outages with troubleshooting activities designed to identify and mitigate operational issues.

a) Reviewing the service level reports, monitoring the service levels and identifying any deviations from the agreed service levels.
b) Monitoring of service levels, including availability, uptime, performance, application specific parameters, e.g., for triggering elasticity, request rates, number of users connected to a service.
c) Detecting and reporting service level agreement infringements.
d) Monitoring of performance, resource utilization and other events such as failure of service, degraded service, availability of the network, storage, database systems, operating systems, applications, including API access within service provider's boundary.
5. **Backup**
a) Configure, schedule, monitor and manage backups of all the data including but not limited to files, images, and databases as per the policy finalized by NBPDCL and other power companies.
b) Restore from the backup wherever required.
6. **Business Continuity Services**
a) Provide business continuity services from DR site in case the primary site becomes unavailable.
7. **Support for Third Party Audits**
a) Enable the logs and monitoring as required to support for third party audits
8. **Miscellaneous**

Prepare a comprehensive Facility Management Service plan for managing the services and keep it updated with any changes during the project. Create and maintain all the necessary technical documentation, design documents, standard operating procedures, configurations required to continued operations and maintenance of services.

5) **Storage and Backup Management**

The Bidder shall perform backup of data & information for System as per the requirement of NBPDCL and other power companies. This will include installation of backup software, managing the tape/disk library, regular backup and restore operations and assuring security of the media through appropriate access control. In addition, the Bidder shall also manage scheduled data replication. The activities shall include:

a) Backup of operating system, database and application shall be performed as per stipulated policies of NBPDCL and other power companies at the data center. The Bidder shall provide required tools for undertaking these activities.
b) Monitor and enhance the performance of scheduled backups, schedule regular testing of backups and ensure adherence to related retention policies.

c) Ensure prompt execution of on-demand backups of volumes, files and database applications whenever required by NBPDCL and other power companies or in case of upgrades and configuration changes to the system.
d) Real-time monitoring, log maintenance and reporting of backup status on a regular basis. The administrators shall ensure prompt problem resolution in case of failures in the backup processes.
e) The administrators shall undertake media management tasks, including, but not limited to, tagging, cross-referencing, storing, logging, testing, and vaulting in fireproof cabinets.
f) The Bidder shall ensure the physical security of the media stored in cabinets.
g) The Bidder shall also ensure that a 24x7 support for file, database and volume restoration requests is available at the data centers.
h) The Bidder shall also provide enough/adequate media (tape library) for daily, weekly, and additional backups for the duration of the contract.

6) **Data Center and Data Recovery Center Operations**

Bidder's responsibilities shall include but are not limited to the below

a) Monitor, log & report of entire IT Infrastructure Solution including servers, storage, supporting system, software, equipment & module operation etc. on 24x7x365 basis.
b) Perform periodic health checkup & troubleshooting of all systems & modules installed & implemented in adherence to the proactive rectification measures

7) **Server Administration/ Management**

Bidder's responsibilities shall include but are not limited to the below

a) Provide the server administration and monitoring service to keep servers stable, operating efficiently and reliably.
b) Provide administrative support for user registration, creating and maintaining user profiles, granting user access and authorization, providing ongoing user password support, and providing administrative support for print, file, and directory, services.
c) Setting up and configuring servers.
d) Installation of the server operating system and operating system utilities.
e) Re-installation on event of system crash/failures.
f) Administration of Operating System for IT system.
g) Manage Operating system, file system and configuration.
h) Ensure proper configuration of server parameters, operating system administration and tuning.
i) Regularly monitor and maintain a log of the performance monitoring of servers including but not limited to monitoring of CPU, disk space, memory utilization, I/O utilization, etc.
j) Regular analysis of events and logs.
k) Apply OS Patches and updates.
l) Monitor & verify logs files and periodically clean up log files.
m) Ensure proper running of all critical services on the servers. Schedule and optimize these services.
n) Maintain lists of all system files, root directories and volumes.
o) Resolving all server related problems.
p) Escalating unresolved problems to ensure resolution as per the agreed SLAs.
q) Responsible for periodic health check of the systems, troubleshooting problems, analyzing, and implementing rectification measures.
r) Logical access control of user and groups on system.
s) Responsible for managing uptime of servers as per SLAs.

8) **Database Administration Services**

Bidder's responsibilities shall include the below but are not limited to:

a) Undertake end-to-end management of database on an ongoing basis to ensure smooth functioning of the same.

b) Undertake tasks including managing changes to database schemes, disk space, storage, and user roles.

c) Setting and tuning system parameters.

d) Building appropriate indexes, specifying large enough buffers and caches, aligning the database implementation with IT infrastructure, monitoring databases and applications, re-organizing databases etc.

e) Manage database upgrade or patch upgrade as and when required with minimal downtime.

9) **Backup/Restore Management**

Bidder shall perform backup and restore management in accordance with mutually agreed to backup and restore policies and procedures, including performance of daily, weekly, monthly quarterly and annual backup functions (full volume and incremental) for data and software maintained on Servers and storage systems including interfacing with NBPDCL and other power companies 's specified backup media storage facilities

Bidder's responsibilities shall ensure the below but are not limited to

a) Backup and restore of data in accordance to defined process/procedure.

b) 24x7 support for file & volume restoration requests.

c) Maintenance and Upgrade of infrastructure and/or software as and when needed.

d) Performance analysis of infrastructure and rework of backup schedule for optimum utilization.

e) Generation and publishing of backup reports periodically.

f) Maintaining inventory of storage tapes at cloud locations.

g) Forecasting tape requirements for backup.

h) Ensuring failed backups are restarted and completed successfully within the backup cycle.

i) Monitor and enhance the performance of scheduled backups.

j) Real-time monitoring, log maintenance and reporting of backup status on a regular basis.

k) Management of storage environment to maintain performance at optimum levels.

l) Periodic Restoration Testing of the Backup.

m) Periodic Browsing of the Backup Media.

n) Management of the storage solution including, but not limited to, management of space, volume, RAID configuration, configuration and management of disk array, SAN fabric/switches, tape library etc.

o) Interacting with Process Owners in developing/maintaining Backup & Restoration Policies/Procedures.

p) To provide MIS reports as per agreement.

10) **Service Delivery Management**

Bidder shall provide detailed description for service delivery management for the complete project plan and deliverables and project management methodology.

1. Project Management

i. Bidder will assign Project Managers (For NBPDCL and other power companies) who will provide the management interface facility and has the responsibility for managing the complete service delivery during the contractual arrangement between NBPDCL and other power companies and the Bidder.

ii. Project Manager will be responsible for preparation and delivery of all monthly/weekly reports as well as all invoicing relating to the service being delivered.

iii. Project Manager's responsibilities shall essentially cover the following:

- Overall responsibility for delivery of the Statement of Works (SOW) and Service Level Agreement (SLA).
- Act as a primary interface to NBPDCL and other power companies for all matters that can affect the baseline, schedule, and cost of the services project.
- Maintain project communications through NBPDCL and other power companies' Project Leader.
- Provide strategic and tactical recommendations in relation to technology related issues.
- Provide escalation to Bidder's / NBPDCL and other power companies senior management, if required.
- Resolve deviations from the phased project plan.
- Conduct regularly scheduled project status meetings.
- Review and administer the Project Change Management with NBPDCL and other power companies Project Leaders.
- Identify and resolve problems and issues together with NBPDCL and other power companies's Project Leaders.
- Responsible for preparation and delivery of all weekly/quarterly/monthly reports as well as all invoicing relating to the services being delivered

11) **Help Desk**

Help Desk shall act as a single-point-of-contact for all service problems pertaining to software & network. The Bidder shall create and maintain a dedicated centralized online Helpdesk specific to system operations with a telephone number, E-mail and call/ticket tracking mechanism that will resolve problems and answer questions that arise from the use of the offered solution as it is implemented at NBPDCL and other power companies.

Users can log the queries/complaints, which shall be resolved as per the Service Level requirements. The helpdesk queries/complaints can be related to connectivity, security, software, configuration, and any other issues that arise in the System.

Help Desk software shall take care of classification, automatic escalation, management, and status tracking and reporting of incidents as expected by the service level requirements. Status tracking shall be available to users through telephone number as well as online through software.

a) The Helpdesk will respond to and resolve the problems as per the SLA.

b) Problems shall be classified into various levels of priority mentioned in the SLA. The assigned priority for each problem shall depend upon:

i. The extent of the problem's impact on the usability of the system

ii. The percentage of users affected by the problem

c) The initial assignment of priorities is the responsibility of the Help Desk's Problem Manager on basis of SLA. However, NBPDCL and other power companies can change the priority assigned to a particular problem and the procedures that exist for escalating a problem to progressively higher management levels, until agreement is secured.

d) The precise definition of problem priorities shall be documented in the Bidder's SLA.

e) Helpdesk shall troubleshoot on systems, applications (software), network, cloud services related issues, multimedia related issues, server administration, security policies, 3rd party coordination etc.

f) After problem resolution, the logged problem in help desk will be closed and notification will be sent to user for confirmation and rate the customer service on defined parameter in helpdesk.

g) Help Desk shall be responsible for change management like schedule up gradation of software components, cloud service components etc. Help Desk will co-ordinate and take approval from NBPDCL and other power companies for the same and will inform all users for such event in advance.

h) Help Desk shall also be responsible for managing problems/incidents related to network link at each Field/Substation location, offices, and HQ. Help Desk shall ensure timely response and assigning the problem/incident on priority basis.

Help Desk shall be ITIL compliant & shall implement ITIL compliant help desk processes like Change Control & Management Procedure, Incident & Problem management approach etc. The Bidder shall utilize help desk tools, which are ITIL complaint and are open for integration with other enterprise management tools like EMS/NMS system etc.

Providing Help desk solutions application

The Service desk/help desk module shall include the automate "Helpdesk Solution Application". A solution record is a predefined response to a problem or commonly asked question. A solution record consists of a symptom, a cause, and a resolution. The solutions can be associated with incident and problem records. The Solution application is used to create, approve, and manage solution records. Search Solution can be used to search for and view solution records. The Helpdesk Solution application shall include the following features:

a) Ability to specify which solution records shall be available to self-service users in the Search Solutions application

b) Ability to specify a Classification for the solution

c) Ability to indicate a Status for a solution. A solution record can have one of the following statuses: DRAFT, ACTIVE, or INACTIVE

d) Ability to attach documents or Web sites to a solution record

e) Ability to use the Solutions application to change the status of a solution record

f) Ability to create, update and delete a solution in Solutions Application.

Any event triggered shall be forwarded to service desk that submits & updates trouble ticket & also updates status of ticket back to EMS/NMS. The EMS/NMS shall automatically forward events to service desk. The EMS/NMS operator shall also be able to generate tickets & forward it to helpdesk. Helpdesk personnel must also be able to update ticket to EMS/NMS.

A. System Services

a) Provide Level One Support for System, including incident logging, assigning incident numbers, and dispatching the appropriate support personnel to remedy a problem.

b) Prioritize problem resolution in accordance with the severity codes and Service Levels specified.

c) Provide system status messages, as requested.

d) Maintain the defined help desk operational procedures.

e) Notify designated personnel of failure of any component of System, or of an emergency.

f) Initiate a problem management record ("PMR") to document a service outage to include (for example) date and time opened, description of symptoms, and problem assignment (Level Two/Level Three), and track and report on problem status, as required.

g) Monitor problem status to facilitate problem closure within defined Service Level criteria or escalate, as appropriate.

h) Monitor PMR closure, including documented problem resolution.

i) Provide NBPDCL and other power companies with complete and timely problem status through the problem tracking system, as requested.

j) Maintain an updated help desk personnel contact listing.

B. Management Services

a) Provide "ownership-to-resolution" of all help desk calls, monitor and report.

b) Progress of problem resolution confirm resolution of the problem with the End User and log the final resolution via the problem management system.

c) Analyze and report on calls received by the help desk, including

i. Call volumes and duration,

ii. Incident & Problem trends,

iii. Call resolution time.

d) Assign priorities to problems, queries, and requests based on the guidelines/SLA provided by NBPDCL and other power companies.

e) Monitor and report to NBPDCL and other power companies on maintenance performance.

f) Provide input to NBPDCL and other power companies on End User training requirements based on help desk call tracking and analysis.

g) Update contact list of users initially provided by NBPDCL and other power companies.

C. Install/MAC Services (Install Move Add Change)

a) Act as the point-of-contact for install and MAC requests and status.

b) Act as the interface for coordinating and scheduling all installations and MACs.

D. User oriented Services

a) Provide an interface for user requests, such as new user IDs, address changes, routing requests, and password changes.

b) Advise the End User to take reasonable steps to backup information, if possible, prior to attempting to affect a resolution either by phone or hands-on during Desk Side Support Service.

The NBPDCL and other power companies shall help Bidder to define the help desk call prioritization guidelines

12) **Vendor Management Services**

As part of this activity the Bidder's team will:

a) Manage the vendors for escalations on support.

b) Logging calls and co-ordination with vendors.

c) Vendor SLA tracking.

d) Maintain database of the various vendors with details like contact person, Telephone Nos., response time and resolution time commitments. Log calls with vendors Coordinate and follow up with the vendors and get the necessary updates/supports/spares exchanged.

e) Analyze the performance of the vendors periodically. (Quarterly basis)

f) Provide MIS to NBPDCL and other power companies regarding tenure of completion of ATS with outside vendors for the proposed system in order that NBPDCL and other power companies may take necessary action for renewal of ATS. Bidder shall also provide MIS regarding performance of said vendors during existing ATS.

g) Bidder shall provide Bidder with contact details of individual vendors.

13) **Anti-Virus Management**

This service includes virus detection and eradication, logon administration and synchronization across servers, and support for required security classifications.

14) **Network Monitoring & Management**

This service provides for the availability monitoring of the network environment. The network management includes proactive monitoring and management.

Bidder's responsibilities shall include:

a) Provide a single-point-of-contact for responding to NBPDCL and other power companies Network management queries or accepting its problem management requests. Bidder's Network management specialist will respond to NBPDCL and other power companies initial request within agreed service level objectives set forth.

b) Monitor availability & escalate to service provider and notify NBPDCL and other power companies for Network Outages.

c) Review the service levels of the Bandwidth service provider (as per pre-defined schedules on SLA performance) along with NBPDCL and other power companies.

d) Provide network availability incident reports severity wise to NBPDCL and other power companies in a format mutually agreed.

e) Provide SLA performance management report of the Network.

f) System performance is to be monitored independently by the Bidder and a monthly report mentioning Service up time etc. is to be submitted to NBPDCL and other power companies. The report shall include:

i. Network configuration changes

ii. Network uptime

iii. Latency report (both one way and round trip) times

iv. Historical reporting for generation of on-demand and scheduled reports of network metrics with capabilities for customization of the report presentation

v. Generate SLA violation alarms to notify whenever an agreement is violated or is in danger of being violated

g) Any other reports/format other than the above-mentioned reports required by NBPDCL and other power companies

h) The Bidder shall monitor the network on a continuous basis using the appropriate service tools and submit reports on monthly basis for system.

15) **Service Management Controls**

1. **Incident Management**

The Bidder must have:

a) Ability to create an incident record to document a deviation from an expected standard of operation.

b) Ability to create other ticket from the incident, if resolving the incident involves creating a service request, problem, or work order.

c) Incident could be created automatically from sources such as email, system-monitoring tools.

d) Ability to have ticket template containing data that agent can automatically insert in common, high-volume records. Instead of manually entering standard information each time, Bidder can apply a template that contains information such as owner, service group, service, classification, internal priority, activities, labor requirements, and activity owners.

e) The template can add the following information but can be modified to include the following: Priority, Owner or Owner Group, Service Group or Service, Classification; for Activities; Activity, Sequence, Job order, Site, Organization, Description, Owner or Owner Group, Priority, Vendor, and Classification.

f) Ability to assign ownership of an incident either to a person or a person group who is responsible for managing the work associated with that record.

g) Ability to assign ownership via workflow or an escalation process.

h) Ability to associate an asset for an Incident Record if the issue you are reporting or working on involves an asset.

i) Ability to view a list of related records and view the work and communication logs for all related records on one screen, on the global record.

j) Ability to create a service request from an incident with a relationship between the two records.

k) Ability to create a Problem from Incident application to record an unknown, underlying cause of one or more issues.

l) Ability to create a release in the Incident application when resolving the Incident involves releasing a set of bundled changes to users.

m) Ability to relationships between Incidents.

n) Ability to identify a global incident, which is the root cause of many other issues or that is something affecting many users.

o) Ability to automatically assign one or more SLAs via Workflow or Escalation process based on SLA's criteria.

p) Ability to apply an incident template which contains activities that can be viewed and edited.

q) Ability to find and attach Solution record containing information on resolving to an Incident record.

r) Ability to record Solution containing information on the symptom, cause, and resolution.

s) Ability to create and submit a draft solution from the Incident application screen which an agent can approve the solution for general use later.

t) The communication log stores inbound and outbound messages and attachments sent between users and agents.

u) Ability to view communication entries associated with a record.

v) Ability to use a communication template to fill in default data.

2. **Ticketing Management**

a) Ability to specify an Owner or Owner Group and Service Group or Service for the ticket.

b) Ability to specify a Classification for the ticket.

c) Ability to specify both a Reported Priority and an Internal Priority for the ticket.

d) Ability to list related assets on a ticket.

e) Ability to track time spent on a ticket

f) Ability to apply one or more service level agreements (SLAs) to a ticket.

g) Provide Self-Service Service Requests module to allow users to submit and view service requests.

h) Ability to create other ticket from the service request, if resolving the service request involves creating an incident, problem, or work order.

i) Ability to relate existing tickets to the service request.

j) Service requests could be created automatically from sources such as email, system monitoring tools.

k) Ability to add a classification to enable workflow processes, escalations, and service level agreements.

l) Ability to have ticket template containing data that agent can automatically insert in common, high-volume records. Instead of manually entering standard information each time, agent can apply a template that contains information such as owner, service group and service, classification, and internal priority. The template can add the following modifiable information: Priority, Owner or Owner Group, Service Group or Service, Classification, Vendor, and Organization.

m) Ability to assign ownership via workflow or an escalation process

n) Ability to select related asset by hierarchical view

o) Ability to filter the related asset list by value list: All, Public, or User/Custodian. The default User/Custodian is the affected person specified on the record.

p) Ability to show similar tickets to search for and relate other tickets to the current record. The purpose is for information only.

q) Ability to automatically assign one or more SLAs via Workflow or Escalation process based on SLA's criteria

3. **Problem Management**

The Bidder must develop an effective problem management system to reduce the impact of problem that occur and minimize its reoccurrence. It shall help in identifying the root cause of the problem and proper recording and tracking of the problem till its resolution. To systematically capture, record, track and resolve the calls, robust application tools with following functionalities/features shall be provided. The tools shall have following features:

a) Ability to apply a template to a Problem. The template contains common data such Priority, Owner or Owner Group, Service Group or Service, Classification, Vendor, and Organization.

b) The Problem template also can contain activities, labor requirements, and activity owners.

c) The Problem template also can contain Problem activity common data such as, Sequence number, Job Plan, Site, Organization, Description, Owner or Owner Group, Priority, Vendor, and Classification.

d) Ability to associate an asset for a Problem Record if the issue you are reporting or working on involves an asset.

e) Ability to select related asset by hierarchical view.

f) Ability to relate other tickets and work orders to a Problem.

g) Ability to show similar tickets to search for and relate other tickets to the current record.

h) Ability to show similar tickets, Problems to search for and relate other tickets, Problems to the current record.

i) The similar ticket search results only list service requests, incidents, and problems having the same Classification. Records are not included in the results if they either are global records or history records.

j) Ability to identify a Problem as global record. A global record captures information about an issue affecting many people. The record might be a created for a shared asset i.e., the root cause of many other issues, such as a failed network server.

k) Ability to relate a Problem to a Global record.

l) Ability to create a service request from a problem, creating a relationship between the two records.

m) Ability to create a Release in the Problem application when resolving the Problem involves releasing a set of bundled changes to users. The created Release will be related to the originating Problem.

n) Ability to identify a global Problem, which is the root cause of many other issues or that is something affecting many users. A global record might have many other records related to it.

o) Ability to automatically assign one or more SLAs via Workflow or Escalation process based on SLA's criteria.

p) When you apply an SLA that includes a response commitment to a Problem, value in the Target Start date field is set based on that SLA. and when an SLA that includes a resolution commitment to a Problem, value in the Target Finish date field is set based on that SLA.

q) Ability to relate existing service requests, incidents and problems to a global record and manage them via the global record.

r) Ability to manage the tickets via the global ticket, when linked with global relationships, so the statuses of related tickets can be changed by changing only the status of the global record.

s) Ability to change status of each activity individually.

t) Ability to apply a template, which contains activities that can be viewed and edited

u) Ability to select labor for activities on a Problem

v) Ability to report labor time either for a Problem as a whole, for activities on the Problem, or for both types of labor time

w) Ability to enter start and stop times

x) Ability to select an owner for each Activity individually

y) Ability to find and attach Solution record containing information on resolving to a Problem record

z) Ability to record Solution containing information on the symptom, cause, and resolution.

aa) Ability to create and submit a draft solution from the Incident application screen which an agent can approve the solution for general use later

bb) Ability to use the Work Log in the Problem application to document work that needs to be done or that was done to resolve the issue

cc) Ability to modify or delete Work Log with authorization protected

dd) Ability to create Communication action in Problem application to send communications about a record to a requestor or other user

ee) Ability to use a communication template to fill in default data, such as the identifier, subject from the originating record when create a communication

4. **Change Management**

The primary objective of change management is to:

a) Manage each change request from initiation through to closure.

b) Process Change Requests based upon direction from the appropriate authority.

c) Determine the Roles and Responsibility of the accountable personnel.

d) Communicate the impact of changes to appropriate personnel.

e) Allow small changes to be managed with a minimum of overhead.

The change control and management process shall be followed by the stakeholders constituting the 'Change Advisory Committee (CAC)'. This committee shall comprise of the key stakeholders who shall be involved from the stage of identification of a Change Request to its closure. Bidder shall detail its change management methodology and activities for proposed system implementation in its proposal. Bidder shall be evaluated based on its dedication to methodology and ability to stay focused on the business process change and expected outcomes/benefits.

A maintenance window shall be provided to the Bidder for incorporating the additional requirement or changes in a functionality. Bidder shall be responsible for implementing any additional requirement without any additional cost to purchaser.

Change Order describes the details of changes along with schedule for implementing the proposed change that the Bidder needs to complete a Change. The Bidder is expected to be able to carry out the below functionalities under change management

a) Ability to enter, modify the change order.

b) Ability to select a predefined change order (job order) and modify it as needed. The job order shall have all details of the change order copied to it.

c) Ability to create a ticket or work order from an existing ticket or work order (or change order).

d) Ability to create follow-up work orders. A follow-up work order is for when you complete a job but notice that additional work is needed on the same asset or location.

e) Ability to create a change from a change. It is needed when, for example, a technician completing a change discovers that additional work not specified on the change, such as a software upgrade, is required to solve a problem.

f) Ability to create an Incident, problem, release & work order from a change.

g) Once a change is approved, it cannot be deleted or modified.

h) Ability to change the status of the Changes to complete which indicates all the physical work is finished.

i) Ability to execute the move or modification of assets under change order.

j) Ability to view information about previous status changes.

k) Ability to change the status of the Change order's task.

5. **Release Management**

The primary objective of release management procedure is to deliver, distribute and track one or more changes for/during release into the live environment and

a) O1 – To plan and oversee successful rollout of software releases.

b) O2 – To communicate and manage expectations of NBPDCL and other power companies during the planning and rollout of new releases.

c) O3 – To ensure that software being changed is traceable, secure and that only correct, authorized and tested versions are installed.

d) The policy or procedural requirements arising out of the agreements signed or agreed between the Bidder and NBPDCL and other power companies would supersede the procedural requirements stated in this document. The applicability of the current procedure is for personnel or process deploying releases of software and/or System components into the production or live environment. While the responsibility to provide staffing (roles used as per rate card, effort required by role, effort by months or weeks as applicable) and timeline for a change request rests solely with the Bidder.

This is broad level of scope of work of Bidder with respect to the software applications.

a) Release of new software, hardware, systems, and services into live environment

b) Release of changes to System and services in the live environment

c) Quarterly release of functionalities

d) Publishing calendar for release – to be published by Bidder in consultation with the NBPDCL and other power companies

e) Decision on packaging and distribution of releases

f) Implementation of changes to software, hardware, systems, and services

g) Building the change request.

h) Provide staffing (roles used as per rate card, effort required by role, effort by months or weeks as applicable) and timeline for a change request.

i) NBPDCL and other power companies will absorb the added/modified functionality from operational perspective which are implemented as part of Release Management in 15 days from the date of release if there is no major issue reported by NBPDCL and other power companies.

6. **Performance Management**

The recording, monitoring, measuring, analyzing, reporting, and forecasting of current levels, potential bottlenecks, and enhancements of performance characteristics for the services, networks, applications, system software, and equipment within the scope shall be required. System tuning, and optimization is an inherent part of this contract.

Where warranted, the Bidder will utilize capacity management data in combination with performance management data to identify ways to improve performance levels of the resources, extend their useful life, and request NBPDCL and other power companies to approve revisions/upgrades to the computing and communications hardware, software, and other equipment such that higher levels of performance of the resources are obtained.

7. **Capacity Management**

The continuous monitoring, periodic analysis, and forecasting of the changes necessary to quantify capacity and configuration of finite resources comprising the computing and hardware/software (cloud) infrastructure supported under this initiative by the Bidder. The categories of resources to be capacity managed include but are not limited to servers & system software.

8. **Security Management**

The protection from unauthorized usage, detection of intrusions, reporting as required and proactive prevention actions are to be provided by the Bidder.

9. **Resources for Project and Service Management**

As mentioned in Minimum resource requirement in the Tender.

10. **Preventative Maintenance Activity**

The preventive maintenance activities shall be performed by the Bidder to keep the system running at optimum level by diagnosis and rectification of all System failures and would broadly include:

a) Configuration routine checking as part of a preventive maintenance which would include checking of functionality System software,

b) Monitoring of the performance of the system and doing necessary tuning for optimum performance to accommodate any changes such as addition of new components.

c) Providing all necessary assistance to NBPDCL and other power companies for addition and modification of database and user interface & consumer portal displays and Database sizing activities.

d) Take Backup of the system at regular interval

Restoration of the systems upon its failure and to restore the functioning of the various systems

3.14 Project Management Services

The supply, development & customization, implementation, roll out and Go-Live of the proposed system is envisaged to be completed within a period of 20 Months. The implementation of entire proposed system would consist of proposed Business Solution, Procurement of DC & DR systems & services and Other Services to meet the requirements of purchaser.

1. Project Management Plan

The Bidder is expected to follow the approved schedule. Each of the milestones should be accompanied with a presentation on the deliverables by the Bidder, related to that milestone.
The submission of deliverable will be deemed complete after the submission of the hard / soft copy of the deliverable and the presentation by the Bidder.
The “Expected Date of Completion” as mentioned in the schedule is the date by which the deliverable shall be submitted to NBPDCL and other power companies. The Bidder shall ensure that the deliverable is accepted by NBPDCL and other power companies as per schedule post review.
The Bidder shall follow prudent project management practices commensurate with the best international standards during the course of the project implementation. While the actual process of application customization will remain an internal activity of the Bidder, it is important that NBPDCL and other power companies or their nominated agencies shall have adequate visibility into such processes.
The following are some of the major guidelines to be kept in mind for Project Management.

2. Scope Management

The requirements in general and the customization requirement in particular, shall be collected and documented clearly. The scope and requirements shall be controlled against a baseline and any changes shall be communicated to NBPDCL and other power companies and documented.

3. Time Management

The Bidder shall prepare a detailed project schedule conforming to the stake-holder expectations and exercise stringent control of the schedule. A periodic report on the progress and deviations should be shared with NBPDCL and other power companies. Any schedule conflicts with respect to project and/or deliverable timelines will have to be resolved by Bidder in consultation with NBPDCL and other power companies and/or its nominated

agencies and approved by NBPDCL and other power companies. Thereafter the approved timelines will have to be adhered to by the Bidder, unless specified otherwise.

4. Quality Assurance and Quality Control

A detailed Quality Assurance Plan shall be prepared and shared with NBPDCL and other power companies. The same shall be monitored and Bidder shall share a periodic report on the quality activities. These shall include:

i. Architecture and Design Review Reports
ii. Test Plans Review Reports
iii. Test Execution Review Reports

5. Project Risk management

The Bidder shall document the risks during implementation and share the same with NBPDCL and other power companies. This shall be periodically reviewed and shared with NBPDCL and other power companies. A report on the periodic risk analysis, risk responses planned, mitigation strategies executed shall be shared with NBPDCL and other power companies.

The Bidder shall store all the Project Management and Delivery artifacts into a secure configuration database and give access to NBPDCL and other power companies for view purposes. During the O&M period, any change requests and enhancements to the software shall be similarly documented so as to create a comprehensive repository of all artifacts relevant to NBPDCL and other power company's stakeholders. This will serve as a valuable knowledge input during Exit Management and also for any statutory audit.

6. Roles and Responsibilities

a) Responsibilities of the Purchaser

The Chairman/ Managing Director of Utility or any other person designated by the Chairman/ Managing Director of NBPDCL and other power companies shall act as the nodal point for the implementation of the Contract and for issuing necessary instructions, approvals, commissioning, acceptance certificates, payments etc. to the Bidder. The Utility shall:

- Whenever implementation of any component of the Solution requires that the Bidder obtain permits, approvals, and import and other licenses from local public authorities, if so, required by the Bidder, make its best effort to assist the Bidder in complying with such requirements in a timely and expeditious manner;
- Approve AS-IS, TO-BE, GAP Analysis and UAT documents required for project progress, within 15 (fifteen) working days from the date of submission of such documents;
- Provide updated AS-IS business process document and on Bidder's request, particulars/ information / or documentation that may be required by the Bidder within 30 (thirty) days from date of execution of the Contract to enable preparation of the Project Implementation plan by the Bidder;
- Review and approval of Bidder's Project Implementation Plan;
- Provide necessary approvals for enterprise data archiving, purging and migration as required for implementing the Software System;
- Provide support and personnel required for testing the system during implementation, acceptance, rollout, and the FMS period;
- Provide A.C. power supply inputs in DC & DR;
- Provide all required documents for delivery of material at site;
- Providing necessary processes and procedures and approval for entry of all operating personnel and for working on 24x7 timeframe in all facilities that would demand such presence;
- Implement minor civil works as required for the equipment and help desk;
- Provide the required integration interface details of the legacy applications and related information required for integration with the Software system, within 1 (one) month from date of execution of the Contract;
- Review the specifications of the Goods proposed to be used to ensure compliance with the provisions of this Contract.
- Provide reasonable support to the Bidder for the Operational Go-Live in terms of the provisions of this Contract;
- Provide necessary support to Bidder in the Project area, in relation to (amongst others) access to Utility's premises, installation of Software system, repair and maintenance services, etc. Utility shall also:
    i. Give access to Bidder supervisor or its operation & maintenance staff to work in the Project area during the Contract Period;
    ii. Provide an office space for Bidder personnel within the Utility premises;
    iii. Give access to Bidder to use existing power and water supply, and other necessary equipment, as mutually agreed with the Bidder;

- Participate in periodic review meetings as per the project governance structure and shall support with the required interventions requested;
- Permit Bidder to perform the project activities during working hours, and also after working hours as necessary, to meet the requirements of Project Implementation Plan;
- Promptly notify the Bidder of any events or circumstances that could affect the Project outcomes, or the Bidder's Services and obligations under this Contract;
- Appoint and notify to Bidder of the names and contact details of the Utility representative and its dedicated staff for the Project, which would include:
    i. An engineer-in-charge for each business function of the Project who shall render full support to Bidder for Service delivery during the Term of this Contract;
    ii. A nodal officer, Utility Project Manager, to co-ordinate with Bidder in relation to the Project.
- Certify Installation Milestone in accordance with the provisions of this Contract.
- Facilitate Bidder for the timely implementation of the Project and for its successful operation and maintenance during the Contract Period;
- Release payments to Bidder as per agreed terms;
- Provide all other necessary support as may be required time to time.

b) Responsibilities of the Bidder

- Preparation of Detailed Project Plan along with the AS-IS, TO-BE and GAP Analysis documents in line with the overall plan provided in the RFP. The same should be prepared in consultation with NBPDCL and other power companies.
- Procure, install, commission, operate and maintain:
    i. Requisite hardware & system software at Data Center/Disaster Recovery Center
    ii. Workstations, printers, UPS, etc. required for software development, maintenance, helpdesk, survey etc. to complete the scope of services at various locations as per the requirements mentioned in this RFP
- Meet the defined SLAs for the performance of the system.
- Implementation of Software System (including 3rd party) as per the requirements mentioned in this RFP document
- Ensure the entire hardware deployed at various locations for the entire duration of the agreement against vandalism, theft, fire and lightening etc.
- Keep all system software i.e., OS, antivirus, office applications etc., for Servers, PCs etc. at Data Centre and DRC, up to date by installing regular upgrades / patches
- On-going maintenance support, upgrades, and enhancements of the solution (including 3rd party components as applicable)
- Setting up and operations of centralized help desk as mentioned in this RFP document and provide necessary support for the resolution of bugs, patches & upgrades of the solution
- Submit documents & deliverables as defined in the RFP
- Ensure training material for trainers to train the other users of NBPDCL and other power companies as mentioned in this RFP
- Delivering training for NBPDCL and other power companies employees
- Periodic testing of readiness of DRC
- Recovery in case of failure of DC/DRC
- Data Digitization and Migration as mentioned in this RFP document
- During the maintenance phase the responsibility of overall system and version control will continue to be vested with Bidder only and should not be outsourced
- Provide onsite handholding as mentioned in this RFP document
- Maintaining the SLA requirements as mentioned in this RFP document
- Analyzing & managing system performance, network performance, call logs, etc., as well as providing the means of monitoring the SLA metrics
- Regular backup of the solution data
- Generation of MIS reports as per the requirements of NBPDCL and other power companies
- Generation of the report for the monitoring of SLAs
- Providing Help features on the Application Modules that can be used by stakeholders such as Frequently Asked Questions (FAQ), etc. including various tests and audits as mentioned in this RFP
- Any Other as mentioned in this RFP document

3.15 Annual Technical Support (ATS)

a) All software should be supplied with applicable OEM warranties and support (including back-to-back) for the entire duration of the project. During warranty period vendor must provide updates and patches.
b) Annual Technical Support (ATS) will start from the date of acceptance of the installation. ATS should cover 24 by 7 escalation supports from OEM for all software products to be provided through Phone, Email or Onsite visit depending on the criticality and nature of the problem. The support must be ensured by the Bidder.

c) The Bidder must carry out any requisite adjustments / changes in the configuration for implementing different versions of the application software.
d) The Bidder shall provide from time to time the Updates/Upgrades/New releases/New versions of the software and operating systems as required. The Bidder must provide free upgrades, updates & patches of the software and tools to NBPDCL and other power companies as and when released by OEM. The Bidder will implement from time to time the Updates/ Upgrades/ New releases/ New versions of the software and operating systems as required after necessary approvals from NBPDCL and other power companies about the same at no additional cost without disturbing the implemented system.
e) The Bidder shall provide and apply regular patches to the licensed software including software, operating system, databases, and other applications.
f) The Bidder shall provide for software license management and control. Bidder shall maintain data regarding entitlement for software upgrades, enhancements, refreshes, replacements, and maintenance. The Bidder must perform periodic audits to measure license compliance against the number of valid End User software licenses consistent with the terms and conditions of site license agreements, volume purchase agreements and other mutually agreed upon licensed software terms and conditions and report to NBPDCL and other power companies on any exceptions to Bidder terms and conditions, to the extent such exceptions are discovered.
g) The Bidder shall manage complete OEM technical support for all the licensed software problems and/or questions, technical guidance, defect, and non-defect related issues. The Bidder shall provide a single-point-of-contact for software support and provide licensed software support including but not limited to problem tracking, problem source identification, problem impact (severity) determination, bypass and recovery support, problem resolution and management reporting etc.
h) The Bidder shall undertake regular preventive maintenance of the licensed software. If the Operating System or additional copies of Operating System are required to be installed / reinstalled / de-installed, the same shall be done as part of ATS.

3.16 **Training Requirements**

The primary objective of the training is to achieve 100% user adoption through technical and behavioral competencies covering all end users of NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL. Training shall be provided in both Second Language & English Language as required, mostly in Second Language to Field Staffs. The SI shall propose a training plan (including training curriculum and calendar) so that there is a proper transfer of knowledge about the deployed proposed systems to staff.

The audience of the trainings shall vary for each type of training. The IT Solution training will cover all identified users employees of the NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL. The end user training for various proposed System Modules and Other associated systems shall be for the users of the respective modules of the system. The SI shall provide training sessions to all identified employees from lower level to higher level including officers from NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL on the domains listed in below table.

Training for Employees of NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL on proposed System on below areas:

a. Professional Training (Implementation team) - This is the training for the core group of implementation team of the NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL. The Implementation/Core team will comprise of members from IT domain. Each member would be trained in the relevant function / module. This Training would be required to be given to approximately 30 to 60 personnel for proposed System. It is the responsibility of the SI to deliver this training. Standard curriculum designed and agreed by the purchaser for proposed Solution, hardware, software, and network by well trained professional shall be arranged for each group.

b. End User Training - The SI will provide training to identified end users of proposed Systems. The End Users/Business Users team will comprise of members carrying out day-to-day operation and task at NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL for proposed System. Each member of End User/Business user group would be trained in the relevant function / module.

On instruction & approval of Nodal Officer, the train the trainer approach shall be adopted by the SI for training & handholding. The Certified Functional, Technical, System administration and Database management training for core team of NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL should be arranged by the SI.

The Training Curriculum along with Calendar need to be included as a part of technical proposal. The details of minimum training curriculum and important consideration for training is mentioned below:

a) Training Curriculum – Proposed System Modules [Tentative]

Category	**PROPOSED**	**Training for Utility**

	Modules	**Training of Business users (End Users)**	**Administration Trainings (Core Team)**			**Application Development & Integration (Core Team)**		**Cyber/ IT Security (Core Team)**
			Server	**Database**	**Network**	**proposed Modules**	**Mobile Application**	
Basic	Day to Day Business Operations on proposed Modules	√	√	√	√	√	√	√
Network	Basic Network Management	√			√		√	√
	Advance Network Management & Administration				√		√	
- IT Infrastructure	Basic Cloud, Hardware & Server Management	√	√		√		√	√
	Advance Cloud, Hardware & Server Management		√					
Database Systems	Basic Database Management	√		√				
	Advance Database Administration & Management			√				
Proposed System – Module Stack Software's	Basic Trouble shooting & Operations Training	√				√		
	Advance Trouble shooting & Operation Training					√		
	System Source Code Development, Customization, Integration & other associated activity to develop in-house competency for maintenance & development of Proposed System					√		

Category	PROPOSED Modules	Training for Utility						
		Training of Business users (End Users)	Administration Trainings (Core Team)			Application Development & Integration (Core Team)		Cyber/ IT Security (Core Team)
			Server	Database	Network	proposed Modules	Mobile Application	
	Modules							
Proposed Modules Mobile – Software	Basic Mobile - Applications Operations	√					√	
	Basic Mobile - Applications development	√					√	
	Advance Mobile Applications Development						√	
Software Testing Training	Detailed software testing training must be imparted. The course can be finalized in discussion with NBPDCL and other power companies.	√	√	√	√	√	√	√
Train the Trainers (Super Users)		√	√	√	√	√	√	√

Table 1: Training Curriculum Proposed System

Note:

1. The Training Curriculum for Proposed system mentions the indicative subjects on which trainings should be imparted by the SI.
2. The Training Curriculum for Proposed Modules mentioned above are indicative and will be finalized based on agreement and discussion between NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL and the successful Bidder i.e., SI.
3. The Business Users and Core users will be identified by NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL and shall be picked from the entire organization and from all levels.

The training activity for Proposed System shall comprise of the followings:

a. Training material must include documents and videos for usage of Proposed System - Modules (Bilingual - Second Language/English). These materials will be uploaded to the Proposed System itself and should be

available as ready reckoners to the end users. The content should be updated regularly and kept up to date as when changes take place to the Proposed System modules.

b. Training sessions shall cover more hands-on training rather than instructive mode.
c. The training and delivery options shall be on-line, CBTs (Computer based trainings), instructor led classrooms. Training material will be organized by functional process that will serve as the training documentation for a particular functional area.
d. Necessary handholding and change management support shall be provided post training.
e. Feedback exercise shall be conducted for each training and accordingly evaluation will be used for improvement of further trainings.
f. The SI in consultation and convenience of the purchaser shall workout the training program and all the other modalities of the training.
g. The SI is required to submit the plan accordingly accommodating training requirements to cover entire user base.
h. The SI shall provide associated documentation for all deployed systems to ensure a smooth transition from deployment to post-deployment operations and maintenance of the system.
i. The ideal approach of the training should be formulation and involvement of core implementation group from the very start of the project to ensure maximum retention and adequate technical competency level.
j. Subsequent trainings and re-trainings should be conducted for identified groups/personnel.
k. Handholding during pre-implementation, implementation, Go Live and Post Go live should be done by the SI.
l. Training calendar should be published to stakeholders and training sessions should be organized either on site or over the web as per the requirement of purchaser.
m. Knowledge sharing strategy should be adopted.
n. Training staff would be deployed at purchaser offices during the course of the project as per requirement of purchaser.
o. Training shall be planned in stages as required - before the implementation, during the implementation and post implementation depending on the frequency as finalized by purchaser.
p. The SI shall carry out the capacity building of core team including functional and technical employees with intent to create a team of experts capable to independently handle the application operations & maintenance task and issues, if any.
q. The SI shall carry out the training of purchaser team on reports development, configuration of application setups and other skill sets as required to create a team of experts capable to independently handle the maintenance & support requirement by purchaser.
r. The SI shall carry out the hands-on training of core team members & end users on Proposed System and Other associated applications including training on system configuration, database administration, backup & restoration, development, and maintenance task etc.
s. The SI shall formulate user manuals of Proposed System and Other associated applications by considering the specific configuration of implemented solution.

1. Scope of training for Proposed System to end users

a. The SI along should propose comprehensive end user training plan for adoption of the applications developed/proposed to purchaser.
b. The plan should incorporate a consistent, enterprise-wide user adoption strategy focusing on the following five key areas:
    - Business Alignment
    - Communication
    - User Training
    - Performance and Management
    - Reinforcement
c. As content may vary across key business units, the degree to which the actual process, tools, and rollout strategy are consistent will provide added economies of scale, as well as levels of skill standardization. In summary, the end goal is striving to achieve 100% user adoption of the Proposed System application through behavioral and technical competencies.

2. Training Needs Analysis

Conduct a Training Needs Analysis to determine the training and development needs for all the job roles that will be affected by the Proposed System technology initiative at purchaser. The SI consultants will collect the appropriate data on user groups, functional and process requirements per user group, required skills and knowledge, existing training culture and training resources through workshops and interviews with purchaser business owners and key business users. This will result in a Training and Development Plan including:

a. The training requirements per user group.
b. Recommendations on the most appropriate training delivery methods and channels.
c. Identification of the criteria for training success along with any challenges and risks.
d. Plan and responsibilities for the development of the training materials, such as instructor guides, participant guides, media-based training, and quick-reference guides.
e. Knowledge sharing strategy to enable to perform future customizations internally.

3. Content Development

Development of customized, modular training materials based upon user roles and business process, and customized application. The SI will work together with purchaser Core team members and Project team to enable transfer of knowledge. The following materials will be developed:

a. Paper-based classroom participant guides for each identified user group. These guides include hands-on exercises and are based upon 'Day in the Life' scenarios.
b. Paper-based classroom instructor guides including instructor notes with additional background information and points to be highlight during the training.
c. Media-based training simulations for pre-class preparation, in-class practicing and knowledge and skills validation.
d. The SI can also be required to provide context sensitive on-line help, which includes all materials provided in the hard copy manuals. Where possible, users should be able to add their own on-line help documentation.
e. Usage of Proposed System must be documented in video form and made available/distributed to all users of Proposed System. All training manuals will be uploaded to Proposed System software, also as FAQs etc. for ready reference.

4. Train-the-Trainer Program

Development and delivery of a Train-the-Trainer program to prepare Organization for the delivery of the training program. This program will include:

a. Training the purchaser Core Team members on the customized version of the Proposed System application's as it would be trained to an end-user, allowing the training team to model the approach.
b. Opportunity for knowledge sharing in the areas of leading practice, concepts, new business processes and knowledge to the purchaser Core Team members.
c. Sharing of leading practices on creating an effective classroom and an appropriate learning environment.
d. Sharing of leading practices on classroom communication to enable the purchaser Core Team members to encourage student involvement and student interaction.
e. The program includes instruction on non-verbal behavior, listening skills, questioning techniques, how to manage difficult behaviors, interpreting body language, and general presentation tips.

5. End user Training responsibilities to include the following

Task	Deliverables
Role Analysis	Training needs analysis matrix, identifying and defining the end-users of all locations affected by the implementation of new technology and associated processes
Curriculum Design	Finalized-course designs, including: • List of business processes and system tasks • Outline of role-based training courses • Plan for incorporating business process and policy information.
Education Project Plan	A project plan detailing: • Timeline for entire project. • Ownership and responsibilities for training material development and delivery. • Work efforts and resource requirements from the purchaser.

Table 2: End User Training Responsibility

a. Onsite training and support

Task	Deliverables
Content Development Tool training	• Hands-on training to enable participants to create course outlines, record topics, edit topics and publish & deploy content
Prototype Development	• Develop standards, design, and develop prototype content deliverables utilizing the customer's application environment. Practice the review and revision lifecycle

Table 3: Onsite Training & Support

b. End user content development

Task	Deliverables
Content Development for the topics identified	• End User training content in the form of simulations and Paper Based content and video sessions • Developing test material for topics identified

Table 4: End User Content Development

c. Train-The-Trainer Program

Task	Deliverables
Content Publishing	• Role-based training media courseware • Role-based instructor and participant guides
Train-the-trainer workshop	Training the purchaser's Core Team members on the customized version of the Proposed System as it would be trained to end-users, allowing the training team to model the approach to train End Users • Opportunity for knowledge sharing in the area of leading practice, concepts, new business processes and knowledge to the purchaser. • Each workshop will have at least 30 people. The workshop will be conducted in batches. The SI will award a certificate of completion, after completion of each training workshop. • All the training material in soft and hard format will be handed over to the purchaser and will be treated as utility property.
Technical training	• Training the purchaser's Core Team members on proposed solution & Technology, HLD, LLD, Master Data Management etc. • This training will be given to the purchaser's Core Team members responsible for carrying out technical activities related to the system like maintenance of database, operating system, backups etc.

Table 5: Train the Trainer Program

6. Training for Higher Management of purchaser

a. **Proposed Sensitization workshop**: Sensitization workshop will be provided to members of higher management of purchaser. The training would provide high level understanding of the proposed system and its functionalities. The session will also highlight the unique requirement of the proposed system.
b. **Proposed Management Dashboard Training**: This entails training provided to Senior Management of purchaser to be able to access and extract reports and other relevant analytical data for quick decision making.
c. **Locations of training:** The training shall be provided at the location(s) at Corporate Office and Site office locations of NBPDCL, SBPDCL, BSPTCL, BSPGCL & BSPHCL. The space and furniture at these locations would be provided by the purchaser.

The training center facility with seating capacity shall be provided by the purchaser. The SI shall arrange the necessary equipment's and peripherals to carry out the training of end users.

3.17 Change Management

Purchaser considers implementation of proposed system will have significant impact on its business processes and people. Effective change management activities will be required to ensure that Purchaser employees are aware about the proposed Project and the change in work practices. The SI will be required to carry out activities as part of change management initiatives by focusing on the change management and capacity building approach and plan so as to be able to tackle the issues that might arise due to new processes of the proposed system.

Training for proposed will allow multiple stakeholders to participate in the day to day management of the solution and ensure sustainable programs to cover specific proposed programs in order to ensure adoption of the system at each level.

Introducing radical reforms has to be necessarily accompanied by efforts to energize and orient the mindsets of the people – both within and outside the department. For instance, the Purchaser staff should be skilled to operate and work in a significantly newer and different way. A well-calculated and well-designed strategy has to be followed for the people to be trained to work effectively in the new environment. It is necessary to formulate a change management plan with appropriate interventions for capacity building, training, and stakeholder communications. A successful Change Management Program will ensure:

a. A smooth transition to the new way of working
b. The organization/people support the changes implemented

c. Individuals know how the changes affect them and the role they have to play
d. Stakeholders to understand the benefits of the changes and internalize it
e. The new system and its underlying concepts are understood
f. People are aware of how roles and responsibilities are changing
g. Everyone is motivated and committed to the change program
h. The success and progress of the program is monitored and measured

1. Key Change Management Implications

The implementation of a new proposed system, Purchaser will have several change implications emanating from the following changes:

a. Process and procedural (necessary introduction of some new process and systems emanating from the need of changing core functional information flow in a few cases)
b. Technical and technological (introduction of new technologies for enabling the new /unaddressed business requirements)
c. Organizational (transformation of existing organizational structure and redefined roles and responsibilities)

2. Change Management Plan

SI will formulate a comprehensive Change Management Strategy built on three key components as mentioned below:

- **HR Plan:** The Human resources Plan will focus on the people in the organization. It will have four main components as described below:
  - Capacity Building Plan
  - Appraisal Workshop
  - Mentoring & Coaching Schemes
  - Feedback and Review
- **Operational Plan:** The Operational Plan will focus on putting Change Management into action. It starts with a formal appointment of a Change Management Team and defines a phased implementation approach.
- **Communication Plan**: The Project communication plan outlines the communication regarding the project. This includes reporting of status and change control communications. In addition to providing information on the project status and progress – which will increase the sense of involvement for everybody, the Change Management Communication plan will include material on all other aspects of the program implementation, including technology, process, etc. A high-level sample communication plan is indicated below:

Type	Description / Purpose	Frequency
Project Status Meetings	Purpose – This reports the accomplishments and results of the project at selected milestones in the project. It also gives plans for the next week, status of activities and significant issues for the project. This report provides insight into any delays in the schedule.	Weekly
Internal Project Meetings	Purpose – To discuss progress of projects and any issues/concerns Frequency – As required, and at least twice a week	As Required
Change Control Board (CCB) Meeting	Purpose – To review proposed changes to the project scope	As Required

- **Data collection, feedback analysis and corrective action:** Employee Involvement is an integral part of change management. Feedback from employees is very much essential. Analysis and corrective action based on this feedback helps in implementation of change management.
- **Responsibilities of Change Management Teams:** The key responsibilities of Change Management Teams which include both SI and Purchaser would be as follows:
  a. Assessing and building staff capability to implement change quickly and effectively
  b. Preparing key officers and their direct reports to meet the challenges and opportunities they will encounter as they implement new processes
  c. Implement and monitor training plans
  d. Helping to increase individual skills, and knowledge
  e. Developing and implementing change communication plans

f. Facilitation to concerned staff for transition to new roles

- **Change Management Phase Wise Deliverables**

Project Preparation

a. Prepare a detailed change management & communication strategy along with plan covering the entire lifecycle of the project
b. Provide support to Purchaser in identifying change managers and change agents including preparation of key skill requirements

Business Blueprint

a. Prepare change management related materials such as newsletters, booklets, etc.
b. Conduct change management workshops at corporate office and agreed field locations
c. Identify process level changes and/or role level changes due to PROPOSED implementation and support Purchaser in effectively conveying the same
d. Prepare Key Performance Indicators (KPIs)

Design and Customization

a. Management awareness workshop
b. Risk assessment and Business Impact Analysis
c. Continuous communication & measurement of communication effectiveness.

Pre-Go-Live

a. Train the Trainer on Change Management Activities
b. Measurement of training effectiveness
c. Readiness assessment
d. Continuous communication

Go-Live

a. Cut-over Strategy
    - All transitional data from legacy & physical systems
    - Sunsetting of Operations on Legacy System to proposed System
b. Go-live communications

Help Desk assessment

3.18 Integration requirement of proposed system

SI shall ensure that the Proposed system is able to share data in industry acceptable protocols and formats. The proposed solution shall be based on an open architecture and supports various types of interoperability and integration methods including viz. SOA, API, EAI, Messaging Queuing, XML based file transfer, Flat file transfer etc.

Proposed system must maintain integration logs that confirm the success or otherwise of the integration interface. All external systems should be integrated with the Proposed system based on a consistent, real-time or batch processing data exchange methodology operating in an automatic manner without any manual intervention unless specifically required.

The Bidder is expected to make note of the following application modules which are already implemented at power companies of Bihar.

[The details of the existing IT applications is provided in 1.1(ee) of Section 2 of this RFP]

SI needs to propose appropriate middleware solution for integration between proposed system and other supporting system including but not limited to the followings:

1. All required data residing in existing legacy applications to be identified and transferred / integrated with Proposed system.
2. End to End Integration of supplied Proposed system and supporting solution with existing IT /Business Solutions and applications implemented across the value chain of power companies of Bihar.
3. Integration with any upcoming IT/Business systems at power companies of Bihar Metering-Billing-Collection (MBC) Solution, ERP system etc.
4. All interfaces should self-checking so that any exceptions or data validation errors are reported by the system.
5. The integration middleware should be based on Service Oriented Architecture (SOA) and other forms of Application Program Interfaces (API) and use publish / subscribe mechanism.
6. The Solution to be proposed as part of the bid will need to be integrated with any or all the above-mentioned application modules
7. To ensure that the integration is seamless with other applications would also be in the scope of Bidder

8. Any adapters, licenses, tools, scripts etc. required for integration with the existing and upcoming IT solutions of power companies of Bihar will need to be arranged by the Bidder
9. Since all the existing IT Solutions & application modules are already in production and are business critical applications which bring in huge revenue for power companies of Bihar, it will be SI's responsibility to ensure minimal downtime for integration and flawless integration which doesn't disrupt any of existing business processes or cause any revenue loss to the purchaser.
10. The integration mechanism adopted must have minimal impact on the existing systems.
11. The access to data will only be through business rules i.e., the applications will not access data directly without going through APIs managed by business rules/validation/workflow.
12. The integration middleware/interface must validate the Data to be integrated
13. It must maintain integration logs that confirm the success or otherwise of the interface.
14. NBPDCL and other power companies can arrange for a session with existing SI in case the SI need to understand any of the existing solutions and clarify their doubts.
15. Integration with existing SAP ERP implemented in BSPTCL for seamless data/information transfer between all BSPHCL and its subsidiary companies.
16. Automatic collection of all relevant revenue data from existing and upcoming Billing systems of SBPDCL and NBPDCL to create financial books (balance sheet, P &L etc.), Ledgers/Accounts etc.

3.19 Audits and IT Security

3.19.1 Audits & Reporting

Proposed system being deployed as a part of this project, will require an auditing and validation both initially as well as on an ongoing basis. The audit activities are mandatory and shall be carried out periodically inline to the timelines/frequency captured as per audit requirements of RFP. However, in case of any exception the audit and validation activities can be carried out in an ad-hoc basis, at the discretion of purchaser. The SI must understate to cooperate and support such audit or validation activities conducted by purchaser or any of its appointed agencies.

SI will be responsible for facilitating and extending full cooperation for audits by any internal authority, Product OEM, or any Third-party agency.

To carry out Proposed system audit, the cost for first 4 iterations shall be borne by The SI including the cost to incorporate any post audit suggestions /recommendations.

However, for any other third-party audits, the cost will be borne by purchaser. If in case, due to un-fulfilment of requirement due to SI, multiple iterations (more than 1) are required to be carried out for any third-party audit, then the cost of further audits will be charged to SI for any subsequent iterations or visits of third-party auditors.

The audit and validation activity will be carried out to identify, assess, evaluate, and recommend on but is not limited to, the following:

a. Performance
b. Security
c. Manageability
d. Customized Source Code
e. OEM Standard and Compliance
f. Availability of Services
g. Functional and Technical Specifications
h. Policy and Procedure
i. Service level requirement
j. Software and supporting system
k. Hardware and other components

l. Project Documentation etc.

3.19.1 **Auditing**

The purpose of audit will be to assess, evaluate and assure to the management of purchaser, that the implemented proposed system, process, policy, and elements of systems are functioning properly and effectively to achieve the planned objectives. In case, any element of the solution is not functioning in line to the specific requirements and standards, then audit shall recommend the required corrections and corrective action.

The audit activity shall include verification, examination, and evaluation of overall solution with objective evidence to assess, that Proposed system solution has been designed, developed, implemented, and documented in accordance and in conjunction with specified requirements.

The audit and validation activities under this will include but is not limited to, the following mentioned activities:

Service Level Agreement (SLA) Audit:

The quarterly monitoring and performance review of The SI against the monthly formulated reports for SLA.

a. A designated third party or personal from purchaser will review the performance of The SI against the SLA.

b. The SLA reports shall be formulated based on the automated system generated reports.

c. The SI shall submit the system generated monthly SLA report to the designated Nodal officer as per agreed frequency and timeline.

d. For requirement of SLA audit, the purchaser may perform a visit either by internal department or by an external contractor at respective Data Center and Disaster Recovery Center locations.

e. The review / audit report will form a basis of any action relating to imposing penalty on or breach of contract of the SI.

Proposed system Audit

This audit activity shall include the validation and assessment of entire Proposed system and supporting systems. The required activity shall be performed on the entire implemented solution to certify that all necessary standards, precautions, and guidelines has been adhered to achieve the optimal performance of the solution.

A. **First Iteration of Audit** – Blue Printing and Designing of Proposed system

a. Review of AS-IS, TO-BE, Gap analysis, Solution mapping document and technical design document along with any other related document

b. Prepare module wise detailed observations covering & including but not limited to process coverage, usage of Proposed system functionalities, risks in customized processes (if any).

c. Data Migration and Digitization strategy with the proposed data conversion templated and migration strategy for existing IT Solutions, if required.

d. Shall include recommendation on industry best practices for purchaser as appropriate e.g., organization structure, codification etc.

e. Audit to ensure installation of proper versions and licenses Proposed system including, but not limited to Proposed system Software's licensing, integration middleware, supporting systems, any other layer of software etc.

f. Verification of standard Proposed system functionalities including module, sub-module which can be used to meet purchaser's requirements

g. Verification and review of the custom development approach and methodology as per standards recommended by Proposed system. Further, SI will also identify risks for purchaser in such developments

h. Review of all custom developed components / objects / process etc. with risk assessment (if any)

i. Proposed system audit process will include review of solution documents and on-site discussions with SI and purchaser.

j. SI will prepare a detailed audit report and submit the same to purchaser.

B. **Second Iteration of Audit** – Posts Development, Configuration and Rollout of Proposed system

Proposed system OEM will verify the specification and configuration to confirm, but is not limited to, the following mentioned activities:

a. The SI will verify and confirm before Go-live, the technical preparedness of the system is appropriate for Go-live

b. The SI will review technical & operational procedures, system performance, user support documents & structure is as per scope and standards

c. Shall verify that the implemented solution is in line with the standard practices

d. The SI will conduct audit to confirm that the solution is performing as per SLAs. The audit report will be a pre-requisite to the completion of Proposed system stabilization phase.

e. The SI will have to take corrective actions based on recommendations. Post incorporation of the recommendations the Proposed system SI will verify the compliance of the same.

f. SI will ensure closure of all audit observations to purchaser's satisfaction and provide final report to purchaser.

3.19.2 **IT /Cyber Security Audit**

A yearly audit of IT security and Cyber security practices by CERT-IN certified Third-party agency to assess and evaluate the implementation of security policy and vulnerability assessment. The report shall include the parameters as per the agreement with purchaser and rate the security implementation in three grades i.e., Satisfactory, Requires Improvement and Unsatisfactory.

a. Security Audit shall include but not limited to vulnerability assessment, penetration testing, application security assessment, application assessment for entire infrastructure.

b. Third party agency shall be responsible for implementation of information security controls and perform periodic assessment.

c. It shall propose ways to enhance the protection of Proposed system & supporting IT Infrastructure.

d. Secure Configuration Review: Third Party Agency shall review the security configuration of Proposed system and provide the detailed report that include the recommendations for remedial actions.

3.19.3 **Business Continuity Plan (BCP)**

A yearly audit of Business Continuity Plan (BCP) to ensure the adequacy, completeness, and appropriateness of plan through various means including availability of technologies, processes, and people to implement the plan that all broadly covered under the umbrella of business continuity and disaster recovery. The audit of business continuity plan shall validate its major components and parameters as per agreement of purchaser shall rate the performance of BCP activities in three grades i.e., Satisfactory, Requires Improvement and Unsatisfactory.

The overall audit activities shall be carried out with an intent of "As-Is" assessments to assess the current operational capabilities of Data Center and Disaster Recovery Center Services, NBSP Services, SDWAN, Help Desk Service Centers, Services suppliers etc. This activity shall take support of extensive use of data analytics to enhance the audit coverage and focus on "risks that matter". The auditor shall follow the 360-degree approach to identify and mitigate risks related to both operations and legal compliances. To benchmark against industry peers to implement the most efficient practice and policies.

It should be a rigorous program management and quality monitoring mechanism to ensure seamless delivery of assessments despite large volume of system. The audit program shall be structured to complete the reviews in minimum time with no disruption to daily business activities.

3.19.4 **Follow-up Audit**

Post completion of audit assessments (Internal or external) may have the findings that require corrections and corrective action. Since most of the corrective actions cannot be performed at the time of audit.

Purchaser may require a further follow-up audit to verify that corrections were made, and corrective actions were taken. The purchaser may also conduct the follow-up audits to verify the preventive actions taken because of performance issues that may be reported as opportunities for improvement.

3.19.5 **Reporting**

The SI shall provide the necessary support and co-operation for overall monitoring of the Proposed system. For purpose of monitoring the SI shall provide the system generated reports with a provision of further detailed analysis, if required.

The SI shall formulate an exhaustive list of required reports and seek the concurrence purchaser. The SI should submit

the reports on a regular basis in a mutually agreed format. Each report shall be circulated and submitted to the designated Nodal Officer of purchaser in the format mutually agreed upon. An indicative list and frequency of such reports are as following:

1) Weekly reports
    a. Backup and restoration
    b. EMS / NMS Report
    c. New Software Patches
    d. Resource utilization of critical components
    e. Data Migration Report
    f. Changes Made in Database
    g. Changes Made in Middleware
    h. DC and DR Replication Report
    i. DC and DR Access Reports etc.
2) Monthly reports
    a. Summary of resource utilization for all components in DC/DR
    b. Log of preventive / break-fix maintenance undertaken
    c. Summary of usage of storage media provisioned
    d. Summary of major and minor changes undertaken in DC/DR
    e. DC and DR Availability and Operations Report
    f. Database Growth Report
    g. Summary of Incidents reported
    h. Consolidated SLA / Non-conformance Report
    i. Integration Services
    j. Help Desk Services
    k. Project Management
    l. IMAC Services
    m. Resource Attendance
    n. Service Management Controls Report
    o. Change and Release Management
    p. System Maintenance Reports etc.

3) Quarterly Reports
    a. Asset database report and Asset audit report
    b. Feedback report from users for services rendered.
    c. Security Audit Report

4) Incident Reporting (as and when it occurs)
    a. Any system/component failure with root cause analysis

b. Peaking of resource utilization on any component

c. Bottlenecks observed in the system and possible solutions and workarounds.

5) Security Incident Reporting (as and when it occurs)

a. Detection of security vulnerability with available solutions/workarounds for fixing.

b. Hacker attacks, Virus attacks, unauthorized access, security threats, etc. — with root cause analysis and plan to fix the problems.

c. Any hazards or events like Fire, environmental conditions, physical security, etc. at DC / DR.

Indicative Schedule for Audit

Sl. No.	Activity	Frequency	Audit Agency
1	SLA Audit	At discretion of purchaser	Internal/Third Party
2	Proposed system Audit	**Twice:** 1. Post Solution Design 2. Before Proposed system Go-Live 3. Remaining two audits as per choice of purchaser	Proposed system by OEM/designated agency by purchaser
3	IT/ Cyber security Audit	Yearly	Internal/Third Party
4	BCP Audit	Yearly	Internal/Third Party

Table 6: Schedule for Audit

3.19.6 **Security Requirements and Features**

The SI will have to establish all the necessary procedures / infrastructure/ technology / personnel to ensure that the Proposed system Security is not compromised.

Broad Security requirements are:

a. Security features should be compliant with the e-Governance Security Guidelines (e Gov Security Standards Framework (www.egovstandards.gov.in), National Cyber Security Policy (NCSP 2013) and NCIIPC Guidelines All systems should have integrated security features that are configurable by the system administrator to control access to the application, functional modules, transactions, and data.

b. Public key verification methods should be followed for verifying that the contents of a document have not been tampered with and allowing the receiver to confirm the identity of the sender.

c. The applications should require the use of unique user IDs and passwords for authentication purposes and digital signatures, Biometric and other devices as applicable.

d. The application should allow for the following:

a) The enforcement of password standards

b) The establishment of a specified period for password expiration, and

c) The prohibition of recent password reuse

e. System administrator should be able to define functional access rights and data access rights by assigned user ID, functional role, and owner organization.

f. The systems should permit the system administrator to assign multiple levels of approval to a single user.

g. System administrator should be able to restrict access to sensitive data elements by named user, groups of users, or functional role.

h. System should be auditable as per requirements from time to time.

i. System should have audit logging capability to record access activity, including the following:

   a) All log-in/log-out attempts by user and workstation

   b) User-submitted transactions

   c) Initiated processes

   d) System override events; and direct additions, changes, or deletions to application-maintained data

j. System should provide the ability to query the audit log by type of access, date and time stamp range, user ID, IP address and terminal ID.

k. All the information assets (information and information systems) should be classified, and security should be defined according to criticality of the information asset. All the data / information contained within systems or in hard copies related to this project, are owned by purchaser. No information should be made public either directly or indirectly nor allowed to be accessed by unauthorized persons.

l. System audit should be enabled for all the information assets to establish detective controls. System should have evidence, like audit trails, logs, registers, proof of background checks, approvals from purchaser or its designated agency, support for various decisions, support for accounts etc. for the purpose of third- party security audit.

m. System should have security incident management procedures. This incident management procedure has to use Technical Support facilities and should be reported in the incident management System.

n. Should have system development and change control procedures including effective segregation of duties and environment.

o. Proper protection against malicious software should be ensured. This would include implementation of an effective anti-virus solution, scanning viruses at regular intervals or on certain triggers and updating the solution as and when new patch is received from the anti-virus solution provider.

p. Should have proper logical access security for all the information assets. Entire network including servers, communication links, database etc., should be logically segregated from rest of the networks.

q. Should ensure suitable technical and procedural controls to protect the network. Wherever the proposed system network comes in contact with an untrusted network, additional security measures should be taken like HIPS Services, DMZ, proxy server, encryption etc.

r. Should have a business continuity plan and a disaster recovery plan that should be implemented before commencement of the operations. Robust backup procedures should be established for the same.

3.19.6.1 Cyber Security

The SI shall provide end-to-end cyber security services to meet IT security challenges for Proposed system based on the proven frameworks and security best practices. It is vital that the processes and technology supporting the Information Security function for Proposed system are proven and compliant to best practices/ standards. It is envisaged that the cyber security operations shall be centralized, structured, coordinated, and responsive resulting in effective cyber threat prevention and detection, thereby securing Proposed system from attackers. The Information Security functions shall respond faster, work collaboratively, and share knowledge more effectively.

3.19.6.2 Security during Development & Integration Phase:

The SI shall meet the security requirements listed below (including but not limited to) during the development and integration stage:

a. The SI shall address emerging cybersecurity vulnerabilities in their software coding under System Development Life Cycle (SDLC). This should be done by taking into consideration the SANS Top 25 Most Dangerous Programming Errors and the OWASP Top 10 Projects.

b. The SI shall propose a legacy data cleansing approach.

c. The SI shall propose a security mechanism to be used for API and adopt the best practices such as OWAPS guidelines to ensure security.

d. The SI shall promptly notify purchaser when vulnerabilities are found in their code.

e. The SI shall apply security related patches and updates.

f. Remote access by the SI will only be performed using technology authorized purchaser.

g. Any data interfaces implemented or built by the SI will be required to have encryption and authentication (strong authentication when possible.)

h. Files containing purchaser information will be transferred using encrypted file transfer techniques agreed upon by both parties.

3.19.6.3 Security during Operations phase

3.19.6.3.1 Security Policy

SI will adopt leading information security framework (like ISO 27001 (Information Security Management System)) and business continuity management systems requirements (such as ISO 22301) to define, monitor and update security policies (including network, server, application, and website/mobile app security).

3.19.6.3.2 Incident Response

SI shall do the analysis of application and network incidents, do post-incident reporting, and implement practices to ensure rapid response to attacks.

The SI shall do a proactive review of incident response plan to improve incident response time and implement continuous improvement process to strengthen overall effectiveness of security.

3.19.6.3.3 Distributed Denial of Service (DDOS) Protection

SI should secure proposed system against DDoS attacks such as network and application level attacks with minimal business disruption. For DC/DR, it must keep the businesses up and running at high performance levels even under attack, avoiding any monetary losses and serious reputation damage.

3.19.6.3.4 Malware Analysis

SI shall conduct analysis of newly discovered malware to uncover its scope and origin. Perform dynamic real-time analysis of advanced malware identified and prevent true zero-day and target attacks which can aggressively evade signature-based defenses through various channels such as Web, Email & Files. SI shall perform the threat analysis of unwanted or suspicious malwares by the behavior or signature-based deduction and take input from the logs, detection, vulnerability, or suspicious activities feeds IOC.

3.19.7 User Authentication and Control

SI shall define and implement highest level of access governance. The proposed solution shall have an enhanced user role security where access should be restricted to only authorized users with multi-factor or two-factor authentication.

The system should have access control features for controlling the access rights over the system and over the various functions/features available for different types of users. Best practices from enterprise security including password strength, password aging, password history, reuse prevention etc. must be followed for access control.

Application user authentication and authorization related transactions should be encrypted and used a wide array of authentication schemes, standards, or token types to ensure that only valid users and applications get access.

a. The SI must ensure that end user access to DC/DR at server is through SSL, VPN.

b. The SI must ensure DC/DR have built-in user-level controls and administrator logs for Transparency and audit control.

c. DC/DR shall have access control policy and ensure role level access control employed with ability to manage roles & identity centrally.

3.19.8 Hardening

All unnecessary packages must be removed and/or disabled from the system. Additionally, all unused operating system services and unused networking ports must be disabled or blocked. Only secure maintenance access shall be permitted, and all known insecure protocols shall be disabled.

a. SI shall provide consolidated view of the availability, integrity, and consistency of the Web/App/DB tiers on DC/DR.

b. SI must ensure Database nodes (RDBMS) should be protected with higher security layer at DC/DR.

3.19.9 **Security Audit**

The SI shall engage with the Cert-IN empaneled agency. The auditors shall be responsible to conduct the following activities:

a. Security Audit that includes (but not limited to) vulnerability assessment, penetration testing, application security assessment API testing and Mobile application assessment and DC/DR ICT infrastructure.

b. Implementation of information security controls and perform periodic (once in a year) assessment.

c. Propose ways to enhance the protection of Proposed system & Supporting IT Infrastructure.

d. Ensure the applications are free from OWASP Top 10/SANS and CERT-IN web/mobile application vulnerabilities as released from time to time.

e. SI is responsible for mitigating all security risks found and continuous monitoring Activities. All high-risk vulnerabilities must be mitigated within 15 days from the date vulnerabilities are formally identified.

f. **Source Code Review**: Third party agency shall review the source code of web and mobile applications for hidden vulnerabilities and design flaws. It shall also verify whether security controls are implemented appropriately.

g. **Secure Configuration Review:** Third Party Agency shall review the security configuration Proposed system and provide the detailed report that include the recommendations for remedial actions and submit the results to purchaser.

3.20 **Project Implementation Methodology**

The methodology to be deployed by the SI to implement the Proposed system will have different work elements and activities.

All these activities and the work elements should coherently focus on achieving the following key results

- Quality of the solution deployed
- Customer satisfaction while deploying and during usage
- Successful implementation in terms of completeness and timely accomplishment of the outcome

While there are different techniques and tools available as part of the methodology, the following are expected to be part of the implementation methodology to be adopted by the SI

a. Workshops with different stakeholders for capturing business requirements, creating awareness of best practices, communicating the changes, building consensus on process design, for signing off the deliverables etc. These need to be organized at different intervals and in different places throughout the duration of the project as demanded by the context.
b. Stakeholder consultation other than workshops, with those stakeholders who will be identified by the purchaser, for the purpose of critical inputs, review, suggestions, process description etc.
c. Review sessions with different stakeholders for signing off the deliverables, walking through the deliverables for facilitating quick understanding.
d. Internal review mechanisms of SI for ensuring the quality of the solution and the deliverables.
e. Adoption of the review comments - effective mechanisms to adopt the changes suggested.
f. Documentation of proceeding – recording the developments, discussions, deliverables, using standard methodology
g. Work standards/practices for documentation, configuration, testing, data migration etc.
h. Training different stake holders on a continuous basis

3.20.1 **Implementation and Support Services**

Implementation Services till Go-Live

a. Commissioning of necessary Infrastructure
b. Realization Configuration
c. Customization
d. Unit Testing
e. System Integration testing
f. User Acceptance Testing
g. Data Migration
h. Training and Change Management
i. Audit Services
j. Documentation
k. Cutover and Go-Live

3.20.2 **Commissioning of Necessary Infrastructure**

a. The SI will be responsible for providing a full range of services in implementation of the proposed system including integration and supporting the operation of the proposed solution during implementation.
b. The SI will provide required software and system applications for DC & DRC
c. The SI shall commission the complete landscape of hardware both at DC and DRC for purchaser .

3.20.3 **Configuration / Customization**

The SI shall be responsible for installation of Proposed software, database, tools, and any other hardware component required for making the Proposed system successfully operational as per the requirements of purchaser. The system is to be a single instance; centralized installation servicing the all organizations. The Proposed system will be installed at the DC & DR of the purchaser.

Configuration: Based on the approved Business Design Document, the SI will undertake the system configuration and customization. After completion of configuration to the proposed system, SI shall carry out a trial run. If needed or/and the result is not up to the expectation of purchaser, further reconfiguration will be done by the SI in order to close any gap left in meeting the desired objective.

Customization: purchaser intends to implement proposed functionalities and the leading practices available in the proposed solution, as far as practically possible. The SI is required to undertake customization that may be needed in line with the changed, improved, or specific business processes requirement prepared during Business Design phase of the proposed system implementation. However, the same must be tested, accepted, and approved by purchaser.

All custom development should be carried out in a controlled and planned manner with adherence to prescribed coding standards and naming conventions. The SI needs to provide configuration, customization, and installation documents to purchaser. SI should follow disciplined approach for configuration and customization which should not restrict purchaser for any future upgrades to its proposed system to this effect, the SI should provide a customized source code/configuration scripts required to upgrade and maintain the system in future and it will not stop purchaser from future upgrades.

For all development agency should submit following details:

a. User Requirement Specifications
b. Functional Specifications Document
c. Complexity Classification under Simple/ Medium/ High, with justification
d. Any impact to Standard functionality/ features and future upgrade
e. Effort and Time-line Estimation

Purchaser reserves the right to seek customization to meet its unique requirements and validate the design or findings suggested as custom development by the SI . In case it is difficult to arrive at the reasonableness of these requirements on customization during the implementation, the same shall be resolved through discussions. In case the issue is not settled, the same shall be referred in the first place to the Steering Committee. The committee may at its discretion co-opt any subject expert internal/external of purchaser who in its opinion may help in resolving the dispute. The decision of the Steering Committee and or the subject expert internal/external of purchaser appointed by the Steering Committee is final.

Purchaser reserves the right to get the functional specifications and effort reviewed by an external consultant.

3.20.4 **Testing**

As part of testing, the SI shall cover all activities during the implementation process (configuration of business processes, development such as conversions, interfaces, reports) which prove that system settings are correct as per business requirement of purchaser. In doing so, the SI shall include test plans, tests cases, and testing report.

The SI shall create the test strategy document that defines the requirements and goals of proposed system configuration, determines the tools and methods used to check that the system responds correctly, determines how and when the test will be performed and recommends how the approval process should occur.

The test strategy document shall guide the project team through the implementation to ensure that planning and conducting testing activities in the various phases of proposed system implementation as mentioned below.

3.20.4.1 Base Line Testing

The purpose of Baseline Scope testing activities is to plan and conduct testing to validate the Baseline configuration. Baseline Scope testing shall ensure that Baseline configuration is valid and supports the business processes defined in the Blueprint.

Baseline Scope Testing shall include:

- Unit Testing: Testing of transactions and functions within modules and
- Scenario Testing: Testing of business processes and scenarios

Baseline Scope testing shall be carried out in three steps:

1) Define Baseline test cases:
    a. SI shall develop the baseline test plan with scenarios and test data to be used for testing based on the test templates.
    b. For simple transactions, testing (unit testing) shall be done straightforward during configuration and the results shall be recorded.
    c. For transactions that are very complex involving multiple screens, functions, and variations to run, the transactions shall be documented and tested with a Business Process Procedure, maintaining the test section with test conditions and variations of the standard transaction, or with case procedures, maintaining the test section.
    d. SI shall use the Test Scenario template entering every single step (transaction) with input and output data to document process flows.
2) Create Baseline test plan
    a. SI shall organize and follow up the unit and scenario testing at the Function/Module level during Baseline scope testing.
    b. SI shall assign timeframes and resources for testing.

3) Test Baseline
    a. SI shall use the Baseline test plan and the test cases to test Baseline configuration.
    b. SI shall update the Baseline worksheet with status and completion date information.

3.20.4.2 Development Testing

The SI shall after development and customization/configuration of the proposed system, conduct tests to demonstrate that the system meets all the requirements (functional and Non-Functional) specifications as brought out in this RFP and would be in accordance with the procedures detailed in the approved process document.
Based on these tests, a report would be submitted by the SI for review and approval purchaser. The test results and response times should be demonstrated by the SI during the testing phases (System, integration & Stress and Load testing) at each purchaser location in an environment/infrastructure as mutually agreed upon purchaser and the SI.
The development testing shall cover testing of:

a. Unit testing of customer-specific development
b. Conversions
c. Enhancements (User-exits and other code enhancements)
d. Reports

Development should be tested by the process owner to make sure that the test results (output data) are correct and reflect the business processes defined in the Business Blueprint Design.
After development unit testing is completed, all customer-specific programs and forms shall be included in the Final Integration Test

3.20.4.3 Integration and System Testing

The purpose of the Integration Test shall be to plan and execute the integrated components, including simulation of live operations, and analyze the results, important for the functional verification of the production system.
Integration testing shall be accomplished through the execution of predefined business flows, or scenarios, that emulate how the system will run the processes of purchaser. These business flows, using migrated data from the pre-existing systems, shall be performed in a multifaceted computing environment comprising of proposed system, third-party software if any, system interfaces and various hardware and software components. The integration tests shall build the necessary level of confidence that the solution is complete and will perform the processes of purchaser.
Integration testing shall focus on cross-functional integration points, as well as end-to-end business processes. The Final Integration test plan shall start with the testing of the cross-functional integration points (touch points) and end with the end-to-end testing of critical business processes identified within the Business Blueprint.
Integration testing shall be done in two iterations.

a. The first iteration (Integration Test) shall concentrate on testing all important business processes inside the proposed system, starting with touch point scenarios, and ending with end-to-end-scenarios. It will be done by SI 's functional consultants. Customer specific development like user-exits and transactions and authorizations and user roles would also be tested in the Integration Test.
b. System Testing, as a second iteration, shall focus on the most important cross-enterprise scenarios with touch points to external components, including testing of conversions, interfaces, reports, and the necessary authorizations. It will be conducted purchaser users with the guidance of project operations committee.

Integration and System tests need to be an evolutionary process that is driven from the previous testing efforts. The test cases and scenarios that were used for Baseline need to be reviewed and enhanced for the integrated and System test.
These selected cases will be combined to represent a business process flow. Problems encountered during these efforts also need to be tested under an integrated environment.

3.20.4.4 Load and Stress Testing

Load, scalability, and stress testing would be conducted prior to commissioning & Go-Live once the System Integration testing of the configured and customized solution has been conducted successfully. SI should use suitable simulation tools in accordance with the agreed test procedures keeping in view purchaser ’s projected future load of transactional users as proposed by SI and agreed by purchaser . After successful testing and its clearance with purchaser, the solution would then be considered as ready for commissioning.

3.20.4.5 System Acceptance Testing

The SI will develop acceptance test procedures and the same will need to be approved by relevant stake holders of purchaser . The purpose of this acceptance is to ensure conformance to the required process operations response time, the integrity of the application after installation, and to eliminate any operational bugs.
This will include:

a. Fine tuning of the application, ensuring all required related component software are installed and any debugging required.
b. SI shall conduct all tests as a part of Standard Software Testing Life Cycle (STLC)
c. SI shall facilitate purchaser or its nominated agencies to conduct User Acceptance Testing, Application Security testing (vulnerability testing and penetration testing) and Infrastructure Security.
d. Purchaser shall nominate a team to carry out acceptance testing of the various solution modules supplied by SI .
e. SI shall provide training to the Acceptance Testing team prior to the commencement of the acceptance testing of system.

f. SI shall setup testing environment at the hosting facilities and use test servers for the same.
g. SI shall provide necessary tools for logging of defects and carrying out testing if required.
h. SI should provide detailed test scripts for carrying out the acceptance test of various systems supplied.
i. SI shall resolve all the defects/issues identified purchaser 's acceptance testing team during solution acceptance procedure/phase.
j. The software would be re-tested to ensure closure of identified defects/issues.
k. The acceptance tests will be carried out before Go-Live at site.

At the satisfactory conclusion of these Acceptance tests to the satisfaction of purchaser, the implementation of the Proposed system shall be considered to be complete, and a 'System Acceptance Certificate' shall be issued by the purchaser within 7 days of completion. However, if any bug/error is reported by purchaser , the SI shall be responsible for taking the corrective action immediately.

3.20.5 **Pilot Go-Live**

a. After the Proposed system is customized and developed in line to the requirements of the purchaser and all the system audits and tests are successfully cleared, a Conference Room Pilot is conducted to ensure the proper operation of the implemented Proposed system before an organization-wide rollout.
b. Once the Conference Room Pilot is successfully completed, the Proposed system is issued the Pilot Go-Live.

3.20.6 **System Rollout**

1. After the Proposed system is customized and developed in line to the requirements of the purchaser, it should be deployed at the Data Center and Disaster Recovery Center.
2. The Proposed system should be rolled out at all locations with after required customization, development and after the successful completion of and User Acceptance Testing (UAT), which is defined by the SI.

3.20.7 **Go-Live**

Purchaser will consider Final Go-Live date of the Proposed system once the SI has completed Stabilization Period after the successful rollout of the Proposed system at all the locations specified by the purchaser . Purchaser shall provide the "Go-Live Acceptance Certificate" on following acceptance criteria:

a. Error free operation and running of all proposed system modules with real-time data during the Stabilization Period at all the purchaser locations.
b. Resolution of all Proposed system related issues (Not limited to software application, Data Center & Disaster Recovery Center)
c. Documentation of all issues/problems that come up during the stabilization support period and resolution methodology / solutions

The following table will be used to ensure compliance to all the activities prior to the Final Go-Live Stage before issuing the 'Go-Live Acceptance Certificate'

Sl. No.	Project Activities	Compliance (Yes/No)
1.	Unit Testing	
2.	Completion of proposed solution stack	
3.	Execution of System Integration Testing	
4.	Execution of System Perform Test (Stress, Load, Disaster Recovery, Backup Tests etc.)	
5.	Commission of DC & DR Environment	
6.	Proposed software Provisioning & Installation	
7.	Proposed solution System Installation on DC & DR Infrastructure	
8.	User Acceptance Testing (UAT)	
9.	Completion of Master Data & Transactional data like user, office hierarchy, assets, Stock Balances,Vendor etc.)	
10.	End User Creation with defined roles & authorization	
11.	Proposed system Accessibility to all End Users	
12.	Completion of Proposed system Configuration	
13.	Successful Completion of End-User Training (Rollout locations)	
14.	Tuning of Proposed System	
15.	Successful Completion of Stabilization period after Proposed System Rollout	
16.	Error free operations and running of all Proposed modules with real-time data for Stabilization period.	
17.	Documentation of all the issues/problems that come up during the stabilization period and resolution methodology / solutions	
18.	Operational Tools Readiness IVR, ITSM & IT Operations	
19.	Helpdesk Set-up	

Sl. No.	Project Activities	Compliance (Yes/No)
20.	Establish Service Level Agreements	
21.	Go-Live Approval	

The system is considered 'Operational' for all purposes of Payments and SLA compliance after the purchaser has issued the 'Go-Live Acceptance Certificate' and the FMS period is ongoing. The purchaser will also be responsible to issue the 'Project Completion Certificate' post the completion of the FMS period as defined in this RFP.

3.20.8 **Post Go-Live Stabilization Support**

The SI shall provide post Go-Live support, as part of this scope, by continuing the deployment of the same technical and functional consultants at site for full three months after implementation and Go-Live. During the stabilization period the SI would help purchaser users to correct any errors/bugs incurred while executing transactions, generating reports, handholding. The SI will update the user manuals and configuration manuals accordingly.

3.20.9 **Additional requirement for proposed system Implementation**

The requirement for proposed system Implementation which the SI will be responsible for are as follows:

1. The solution should support multitier architectures.
2. System architecture should allow infrastructure simplicity and standardization.
3. The solution software including operating system should be certified for different types of hardware.
4. The infrastructure should be capable of supporting disaster recovery.
5. The solution should have capability to present all business process and data via familiar relevant office applications and should offer integration with all relevant Forms.
6. The system should support latest OS versions and provide compatibility to future versions
7. All purchaser components must be maintained with an ease, such that corrective and preventive maintenance can be performed on the system without affecting the entire working of the system.
8. The system should be designed to remove all single points of failure. The system should provide the ability to recover from failures and should also provide clustering features, thus protecting against many multiple component failures.
9. The system should have the ability to scale up as and when the new business applications and services are added without compromising the performance of the overall solution. The architecture should be proven to be highly scalable and capable of delivering high performance as and when the transaction volumes increase.
10. The system should provide application architectures that are highly granular and loosely coupled. The solution architecture design should promote flexible business process management for future scalability. The solution should be interoperable in nature and design and development should be based on Service Oriented Architecture (SOA).
11. The system is required to cover critical business function and process modules and provide modularity that should support addition / removal of one or more modules as and when required. However, these modules should be seamlessly integrated in the core application system. The solution architecture should allow minimum modifications to preserve the upgrade path.

a. The system should support standard interfaces such as adapters, APIs to interface with standard application and legacy applications.
b. The system should support real-time data updates and interfaces with software from other vendors.
c. Operating systems should have longer product life cycle (10 years or more) to avoid non-availability of various device driver (current and future) support as well as telephonic and web-based support infrastructure in place directly from OEM. The OS should be the latest version available in the market.
d. The system should support export and import of data possible from different legacy systems/other systems/databases in different file formats and on specified time intervals.
e. The proposed application should support SSL and digital certificates.
f. The system should be compatible to remote access integration.
g. The system should support the use of fault-tolerant multiprocessor architecture and cluster processing.
h. The system should support auto-switching failover to other available server in case of server failure.
i. The system should support distributed processing.
j. The system should support load balancing.
k. The Enterprise grade Server operating system should support the essential network services like Directory Services, DNS, DHCP, Radius, Web Server, Application server, Cluster services (High Availability and Fail over Support), Global File system support and virtualization.
l. The infrastructure technology stack (database, application server and other components) used by the application should be commonly used for developing and running custom applications.

3.21 **Exit Management and Knowledge Transfer**

At the end of Contract period, the SI will be required to provide the necessary handholding and transition support including all information as may be necessary and reasonable to effect as a seamless handover as practicable in the circumstances to Purchaser or designated staff or any other agency that is selected for maintenance of Propose system post completion of Contract with the SI.

The SI will provide all information, handholding, and support for all the activities and information in its possession or control at any time during the exit management period. Anything in the possession or in the control of SI, associated entity or sub OEM is deemed to be in the possession or control of the SI. The transition and handholding process will include but not be limited to, conducting a detailed walkthrough and demonstrations of the Proposed system, handing over all relevant documentation, addressing the queries/clarifications with respect to the working/performance levels of the DC/DR systems & Infrastructure, Software Licenses, handover of customized source codes, policies, and procedure document, conducting training sessions etc.

The Knowledge transfer activity is an integral part of the scope of work assigned to SI. This knowledge transfer activity will have to be carried out effectively, even in the case of end of Contract with the SI or is terminated before the planned timelines.

Please note that this is an indicative list, any other activity, over and above these, as may be deemed necessary by the Purchaser or designated staff or any other agency that is selected for maintenance of Proposed system to meet the service levels and requirements specified in the contract are also required to be performed by the SI at no additional cost.

In the case of closure or termination of the project, the Parties shall agree at that time whether, and if so during what period, the provisions of this schedule shall be applied. The Parties shall ensure that their respective associated entities will carry out their respective obligations set out in this Exit Management Schedule.

3.21.1 **Transfer of Proposed system**

a) The purchaser shall be entitled to serve notice in writing on the SI at any time during the Exit Management period requiring the SI and/or its sub-contractors to provide the Purchaser with a complete and up to date list of the assets and System configurations, License details, Customized Code within 30 days of such notice.

b) Purchaser shall also be entitled to serve notice in writing on the SI at any time prior to the end of Exit Management period requiring the SI to transfer the overall control to Purchaser or its nominated agencies.

c) In case of contract being terminated prematurely by Purchaser, the Purchaser reserves the right to ask SI to continue running the project operations for a period of 3 months after termination orders are issued. In case of contract being terminated by SI, Purchaser reserves the right to ask selected SI to continue running the project operations for a period of 6 months after termination notice is served by SI.

d) Upon service of a notice under this Article, the following provisions shall apply:

   i. All title to the assets shall be transferred to Purchaser, on or before the last day of the exit management period.
   ii. Payment to the outgoing SI shall be made to the tune of last set of completed services/deliverables, subjected to the approval and compliance on contractual and SLA terms & conditions.

3.21.2 **Transfer of Agreements**

On the request of Purchaser or its nominated agency the SI shall effect such assignments, transfers, licenses and sub-licenses as Purchaser may require in favor of the Purchaser or its replacement implementation agency in relation to any equipment or service, maintenance or service provision agreement between selected SI and third party lessors, service providers, and which are related to the services and reasonably necessary for the carrying out of replacement services by the Purchaser or its nominated agency or its replacement SI.

3.21.3 **Exit management plan**

The SI shall prepare an Exit Management Plan for transfer of operations to the Purchaser or its nominated agency or its replacement SI. In the event of termination or expiry of contract with Purchaser, without affecting services to stakeholders adversely. The SI shall get this process approved by Purchaser. The Exist Management Plan shall include, but not be limited to, the following:

a) A detailed program of the transfer process that could be used in conjunction with a replacement SI including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer.

b) Plans for the communication with such of the SI 's sub OEM, Bidder, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Project’s operations as a result of undertaking the transfer.

c) Plans for provision of contingent support to Purchaser and Replacement SI for a reasonable period after transfer.

d) The SI shall re-draft the Exit Management Plan annually thereafter to ensure that it is kept relevant and up to date.

e) Each Exit Management Plan shall be presented by SI to the Competent authority at Purchaser and approved by Purchaser or its nominated agencies.

f) In the event of termination or expiry of Agreement, Project Implementation, or Service Levels, each Party shall comply with the Exit Management Plan.

g) During the Exit management period, the SI shall use its best efforts to deliver the services.

h) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule and Contractual conditions or as mutually agreed between the SI and Purchaser .

i) An Exit Management plan shall be furnished by the SI in writing to the Purchaser or its nominated agencies within 90 days from the date of signing the contract.

3.21.4 **Facilities to be provided by Client**

1) Providing required details of existing Legacy system and any other Systems which are required for Integration.

2) Providing necessary approvals and signoffs on mutually acceptable conditions.

3) Arranging any meeting or workshop with the Legacy Application Owners or Vendors.

4) Space for implementation of Centralized IT - Help Desk.

5) Necessary sitting space provided by Purchaser at Corporate Headquarters.

4. Eligibility and Qualification Requirements

1. The Bid can be submitted by a Sole Bidder as an individual entity or a Consortium of maximum two (2) firms/companies (specific requirements for Consortium are given under Clause 5 below) who are eligible to participate in tenders for public procurement in India in accordance with Applicable Laws including any amendments or modifications to the same from time to time.
2. If at any stage of the bidding, any order/ ruling is found to have been passed in the last 1 (one) year preceding the Bid submission deadline by a competent Court of Law or any appropriate Commission or any Arbitral Tribunal against the Sole Bidder/ Lead Bidder/ any Consortium Members or its Affiliates for breach of any Contract awarded by any Government agency/department, then Bids from such Bidders shall be liable to be rejected. All Bidders shall confirm in accordance to Form 4 given in RFP that no such order(s)/ ruling(s) have been passed by a competent Court of Law or an appropriate Commission against it or its Affiliates. In case of any such order/ ruling, it is the duty of the Bidder to inform NBPDCL for the same during the Bid submission.
3. Technically qualified Bidders shall continue to maintain compliance with the Eligibility and Qualification Requirements specified herein. Failure to comply with the aforesaid requirements shall make the Bid from such Bidders liable for rejection at any stage of the bidding process.
4. To be eligible to bid, the Bidders must ensure compliance to the following, failing which they shall not be eligible:

Restrictions under Rule 144 (xi) of GFR 2017: Restrictions on procurement from a bidder of a country which shares a land border with India

a) Any bidder from a country which shares a land border with India will be eligible to bid only if the bidder is registered with the Competent Authority.
b) "Bidder" (Seller / Service Provider) means any person or firm or company including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
c) "Bidder from a country which shares a land border with India" for the purpose of this Order/ Rule means: -
   a. An entity incorporated, established, or registered in such a country; or
   b. A subsidiary of an entity incorporated, established, or registered in such country; or
   c. An entity substantially controlled through entities incorporated, established registered in such a country; or
   d. An entity whose beneficial owner is situated in such a country; or
   e. An Indian (or other) agent of such an entity; or
   f. A natural person who is a citizen of such a country; or

g. A consortium or joint venture where any member of the consortium or venture falls under any of the above

d) The bidders are required to ensure compliance to the directions issued by Ministry of Power, Government of India vide OM No: A-1/2021-FSC-Part (5) dated November 16, 2021 pertaining to "Public Procurement (Preference to Make in India) to provide for purchase preference (Linked with local content) in respect of Power Sector" and other OM's/directions/circulars issued by appropriate Ministries' in this regard and subsequent amendments thereof.

e) The beneficial owner for the purpose of (III) above will be as under:
   1. In case of a company or Limited Liability Partnership, the beneficial owner, or the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercise control through other means. Explanation—
      a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of shares or capital or profits of the company;
      b. "Control" shall include the right to appoint majority of the directors to control the management or policy decisions including by virtue of the shareholding or management rights or shareholders agreements or voting agreements;
   2. In case of a partnership firm, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
   3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
   4. Where no natural person is identified under (1) or (2) or (3) above, beneficial owner is the relevant natural person who holds the position of serving managing official;
   5. In case of a trust, the identification of beneficial owner(s) shall include the identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercise ultimate effective control over the trust through a chain of control or ownership;

f) An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

g) The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor registered with the Competent Authority.

5. Eligibility Requirements for Consortium

5.1 Members of the Consortium shall enter into a binding Consortium Agreement, in the form specified at Form-1 (the "Format of Consortium Agreement to be entered amongst all Members of a Bidding Consortium") given in RFP Document, for the purpose of submitting Bid. The Consortium Agreement, to be submitted along with the Bid, shall, inter alia:

(a) convey the intent to comply with the terms and conditions of the System Integrator (SI) Contract in the event selected to undertake the Project; and

(b) Clearly outline the proposed roles and responsibilities, if any, of each member.

5.2 Every Consortium Member shall provide consent to the Lead System Integrator (SI-Lead) and make itself aware of all the proceedings of the bidding process and Project implementation through legally enforceable Consortium Agreement, power of attorneys, legal undertakings, etc. (if applicable) entered amongst all members of that Bidding Consortium including but not limited to those as prescribed in Form-1, Form-2 given in RFP. In the absence of duly executed formats, the Bid shall not be considered for evaluation and shall be rejected.

5.3 The SI-Lead shall be liable for the execution of the entire obligation in the System Integrator (SI) Contract in accordance with the terms and conditions thereof. Only the Lead Consortium Member, who must be a System Integrator (SI), shall have the authority to conduct all businesses for and on behalf of the Consortium during the bidding process.

6. The Bidder, individual entity in case participating in the bidding as Sole Bidder, or as a Consortium Member or as SI-Lead in case participating in the bidding as Bidding Consortium, and its Sub-Contractor(s) should not be blacklisted by any Govt. Organization or regulatory agencies or Govt. Undertaking as on date of submission of the bid. Bidder should submit a self- undertaking signed by its authorized signatories for the same as per the format prescribed in RFP.

7. The SI-Lead/ Sole Bidder shall submit the Bid after submitting the Tender Fees and Bid Security as per the various terms, schedules and formats prescribed in this RFP. Further, The SI-Lead shall be the point of contact for the Consortium during the Bid process before award of the Project to the SI for the project execution and NBPDCL shall communicate directly to the contact person appointed through the Power of Attorney as per Form-3 given in RFP.

8. The Technically Evaluated Entity may be the Sole Bidder or the SI-Lead/2nd Member of a Consortium, as the case may be. The Consortium may consist of 2 members at the maximum (i.e., the SI-Lead and the SI-2nd). The OEMs, and survey agency are all sub-contracted.
9. No further sub-contracting other than as mentioned in Pre-qualification and Technical evaluation criteria will be allowed during any stage of the project implementation without prior consent of purchaser.

4.1 Qualification Requirements

The prospective Bidder (referred as SI-Lead) and the 2nd consortium member (in case of a consortium; referred as SI-2nd member) shall have to enclose all documentary evidence. The technical and financial requirements of qualification for the System Integrator (SI) are as follows:

Sl. No	Requirements	Supporting Documents
1.	The Sole Bidder should be a company registered under the provisions of the Indian Companies Act, 1956 / 2013 or a partnership firm under the Indian Partnership Act, 1932 or the Limited Liability Partnerships Act, 2008. In case of consortium, the consortium members should be a company registered under the provisions of the Indian Companies Act, 1956 / 2013 or a partnership firm under the Indian Partnership Act, 1932 or the Limited Liability Partnerships Act, 2008.	• Certificate of incorporation / Partnership deed • GST Registration • Certificate of commencement of business (if applicable) *(Such supporting documents should be submitted for Bidder/ all the consortium members, as applicable)*
2.	The Bidder should have at least CMM/CMMI level 5 valid certification. In case of a consortium, this requirement needs to be met either by the Lead or consortium partner and other member must be ISO/ IEC-9001: 2008/2015 or above certified.	Copy of certification from authorized certification body valid as on date
3.	The bidder/SI-Lead or consortium partner should not be blacklisted or debarred by any govt. organization or public sector organisation as on the date of submission of bid.	SI-Lead & SI-2nd shall submit self-declaration on non-Judicial stamp paper of Rs. 100/-
4.	The bidder must have more than 500 full time resources. on its payroll. In case of a consortium, the requirement may be met jointly by SI-Lead and the SI-2nd Member.	Certificate from HR Head/ Company Secretary.
5.	Minimum Average Annual Turnover (MAAT) for last three years of the bidder should not be less. INR 200 Crores. In case of a consortium, Lead bidder and 2nd partner combined should meet this requirement of turnover, with Lead bidder meeting minimum 51% INR 102 Crore, the 2nd member meet at least 26% of the MAAT i.e. INR 52 Crore . .	Copy of Annual Audited Financial Statements certified by Chartered Accountant for the preceding five years containing related information to verify the eligibility conditions. *(Such supporting documents should be submitted for Bidder/all the consortium members, as applicable)*
6.	Net Worth for the each of the last three Financial Years should be positive. In case of a consortium, both the SI-Lead and SI-2nd should have positive net worth in each of	Copy of Annual Audited Financial Statements certified by Chartered Accountant for the preceding three years

	the last three audited financial years. '*Net-worth' will consist of 'paid up equity capital, free reserves, balance in share premium account and capital reserves representing surplus arising out of sale proceeds of assets but not reserves created by revaluation of assets' adjusted for 'accumulated loss balance, book value of intangible assets and Deferred Revenue Expenditure, if any'*.	Net worth calculations to be done as per the given definition and certified by an Auditor/ Chartered Accountant *(Such supporting documents should be submitted for Bidder/all the consortium members, as applicable)*
7.	The bidder must have successfully implemented at least one (1) Turnkey IT System Integration (TSI) project within the last 10 financial years for a Central/State PSU or Government organization in India, involving: • Installation, configuration, customization, implementation, and roll-out • Facility Management Services (FMS), or system operation support • Preferably including supply of hardware, or cloud services, or software, or licenses The bidder must meet any one of the following project value criteria: • One project valued at INR 20 Crore or more, OR • Two projects each valued at INR 11 Crore or more, OR • Three projects each valued at INR 8 Crore or more **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	Necessary Purchase order/LOI/Contract/Certification on client letterhead/Completion certificate as on date of Bid as proof of services provided.
8.	The bidder must have successfully executed at least one project within the last 10 years involving any of the following: • Preparation and implementation of a Fixed Asset Register (FAR) • Execution of FAR-related assignments such as asset identification, tagging/geo-mapping or Enterprise Asset Management • GIS-based solutions for survey and mapping • Large-scale, multi-location surveys or project studies At least one such project must have been implemented for a Central/State PSU or Government organization in India. The project(s) must meet either of the following criteria: Condition A – Project Awarded Value • One project valued at ₹80 Crore or more, OR • Two projects each valued at ₹40 Crore or more, OR • Three projects each valued at ₹27 Crore or more Condition B – Project Asset Value Coverage • One project covering assets worth of ₹10,000 Crore or more, OR	Copy of work order/client certificate as documentary proof for the stated criteria and implementation status;

	• Two projects cumulatively covering assets worth of ₹12,000 Crore or more, OR • Three projects cumulatively covering assets worth of ₹15,000 Crore or more **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	
9.	The bidder should have experience of minimum one project in Power Sector (Generation, Transmission or Distribution) in Central/State PSU or Govt. Organization in last 10 years from date of submission of bid to establish that bidder have domain knowledge power sector. **Note:** The projects must be live or completed. In case of a consortium, this requirement needs to be met either by the SI-Lead or SI-2nd Member.	Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client.

4.2 **Technical Evaluation Criteria**

The prospective Bidder (referred as SI-Lead) and the 2nd consortium member (in case of a consortium; referred as SI-2nd member) shall have to enclose all documentary evidence in support of technical evaluation criteria

Sl. No.	**Criteria**	**Max Marks**	**Supporting Documents**
1	**Technical Presentation**	**10 Marks**	
1.1	Presentation by the bidders on their understanding of the following: 1.Business & functional requirements of purchaser 2.Proposed solution and implementation approach 3.Methodology adopted by agency for conducting the survey work, survey team deployment & management strategy, survey completion duration, strategy for survey data quality/validation etc. 4.Proposed methodology & technology for application software development, implementation, maintenance, testing, quality of team deployment, team management etc. 5.Proposed Technical Solution, Resource Planning, Project Governance & Key personnel proposed Bidder has to get minimum 5 marks to technically qualify in 1.1 section.	10	Presentation delivered by the Project Manager and Assistant Project Managers who are proposed to be deployed on full time basis at client locations and should depict Bidder's understanding of the business/functional requirements of the purchaser, the proposed solution and implementation approach.
2	**Human Resource / Manpower**	**25 Marks**	
2.1	Project Manager (Project In-charge) Should have worked as a Project Manager for Large Projects of System Integration (More than INR. 20 Cr.) with Central / State Govt./Private Organizations in Power Sector: • More than 2 projects= 2 Marks • 2 projects= 1 Mark	6	Self-Certified CV

Sl. No.	Criteria	Max Marks	Supporting Documents
	Total Years of Experience: • >= 20 Years: 2 Marks • >=15 and < 20 Years: 1 Mark Relevant experience in FAR/EAM system: • >= 15 Years: 2 Marks • >=10 and < 15 Years: 1 Mark		
2.2	Associate Project Manager (Project Coordinator at NBPDCL and other power companies) Worked as a Project Manager for Projects of System Integration (More than INR. 20 Cr.) with Central / State Govt./Private Organizations in Power Sector: • 2 or more projects= 2 Mark • 1 Project = 1 Mark Total Years of Experience • >= 10 Years: 2 Mark • >=5 and < 10 Years: 1 Marks	4	Self-Certified CV
2.3	Functional Expert (Asset Management/Operation Management/GIS system) Worked as a Functional lead/expert for Projects (More than INR. 5 Cr.) with Central / State Govt./Private Organizations in Power Sector: • 2 or more projects= 2 Mark • 1 Project = 1 Mark Total Years of Experience • >= 10 Years: 2 Mark >=5 and < 10 Years: 1 Marks	4	Self-Certified CV
2.4	Financial Expert (Asset Valuation) Worked as a Financial Expert for Projects (More than INR. 5 Cr.) with Central / State Govt./Private Organizations in Power Sector: • 2 or more projects= 3 Mark • 1 Project = 2 Mark Total Years of Experience • >= 10 Years: 2 Mark >=5 and < 10 Years: 1 Marks	5	Self-Certified CV
2.5	Survey expert 5 years' experience – 1.5 mark Greater than 5 years' experience – 2 marks	2	Self-Certified CV
2.6	Data Base Administrator 5 years' experience – 1 mark Greater than 5 years' experience – 2 marks	2	Self-Certified CV
2.7	IT Infrastructure expert 10 years' experience – 1 mark Greater than 10 years of experience – 2 marks	2	Self-Certified CV
3	**Turnkey System Integration (TSI) Experience**	**10 Marks**	

Sl. No.	Criteria	Max Marks	Supporting Documents
3.1	The bidder must have successfully implemented at least one (1) Turnkey IT System Integration (TSI) project within the last 10 financial years for a Central/State PSU or Government organization in India, involving: •Installation, configuration, customization, implementation, and roll-out •Facility Management Services (FMS), or system operation support •Preferably including supply of hardware, or cloud services, or software, or licenses The bidder must meet any one of the following project value criteria: •One project valued at INR 20 Crore or more, OR •Two projects each valued at INR 11 Crore or more, OR •Three projects each valued at INR 8 Crore or more For projects value not less than INR 20 crore • One (1) project – 5 Marks • Two (2) projects – 8 Marks • More than two projects-10 Marks OR, For projects each costing not less than the amount equal to INR. 11 crore • Two (2) projects – 5 Marks • Four (4) projects – 8 Marks • More than four projects-10 Marks OR, For Projects each costing not less than the amount equal to INR. 8 crore • Three (3) project 5 Marks • Six (6) projects – 8 Marks • More than six projects-10 Marks **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	10	Copy of Work / Purchase Order & Certificate of Go-Live / Certification for project being operational as on date of Bid Submission as proof of services provided
4	**Project Implementation Experience**	**40 Marks**	
4.1	The bidder must have successfully executed at least one project within the last 10 years (in India) involving any of the following: • Preparation and implementation of a Fixed Asset Register (FAR) • Execution of FAR-related assignments such as asset identification, tagging/geo-mapping or Enterprise Asset Management • Deployment of GIS-based solutions for survey and mapping activities • Large-scale, multi-location surveys or project studies Out of two (2) eligible projects one must have been implemented in Central/State PSU or Govt. Organization in India.	**30**	Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client. *(*Completion Certificate for completed projects shall be issued after the Go-Live)*

Sl. No.	Criteria	Max Marks	Supporting Documents
	Marks shall be awarded based on either Condition A (Project Awarded Value) [Clause 4.1.1] or Condition B (Project Asset Value Coverage) [Clause 4.1.2], whichever yields the higher score. **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.		
4.1.1	**Condition A (Project awarded Value)** For projects awarded value not less than INR 80 crore • One (1) project – 10 Marks • Two (2) projects – 20 Marks • More than two projects-30 Marks OR, For projects each costing not less than the amount equal to INR. 40 crore • Two (2) projects – 10 Marks • Four (4) projects – 20 Marks • More than four projects-30 Marks OR, For Projects each costing not less than the amount equal to INR. 27 crore • Three (3) project 10 Marks • Six (6) projects – 20 Marks • More than six projects-30 Marks		Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client. (*Completion Certificate for completed projects shall be issued after the Go-Live)
	OR		
4.1.2	Condition B (Project Asset Value Coverage) For projects of Asset of value coverage at least ₹ 10,000 Crore or more considering Projects each Asset of value coverage not less than the amount equal to INR. 10,000 crore • One (1) project – 10 Marks • Two (2) projects – 20 Marks • More than two projects-30 Marks OR, For projects of Asset of value coverage at least ₹ 12,000 Crore or more considering Projects each Asset of value coverage not less than the amount equal to INR. 5000 crore • From Two (2) projects – 10 Marks • Four (4) projects – 20 Marks • More than four projects-30 Marks OR, For projects of Asset of value coverage at least ₹ 15,000 Crore or more considering Projects each Asset of value coverage not less than the amount equal to INR. 5000 crore • Three (3) project 10 Marks • Six (6) projects – 20 Marks • More than six projects-30 Marks		Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client. (*Completion Certificate for completed projects shall be issued after the Go-Live)
4.1a	• 1 Survey related project in Power sector – 5 Marks. • 2 Survey related project in Power sector – 10 Marks **Note:** The projects must be live or completed in Central/State PSU or Govt. Organization in India in last 10 years. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	**10**	Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client. The successful completion shall include at least one year FMS subsequent to Go-Live.
5	**Bidder's Cloud/DC/DR Experience (Cloud & In-Premises DC/DR)**	**5 Marks**	

Sl. No.	Criteria	Max Marks	Supporting Documents
5.1	The Bidder(s) should have experience of Cloud based solution hosting projects (any cloud hosting project experience allowed)/Bidder should have experience of Data Centre projects (supply, installation, Commissioning) in Central/State PSU or Govt. Organization in India in last 10 years. • 1 project – 2 Marks • 2 projects – 3 Marks • 3 projects – 5 Marks **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	5	Work Orders / Purchase Orders and Successful Completion Certificates of the project mentioning the cost of cloud component issued by Officers not below the rank of Executive Engineer. *(*Completion Certificate for completed projects shall be issued after the Go-Live and at least one year FMS period is over)*
6	**Bidder's experience in Power Sector (Generation, Transmission or Distribution)**	**10 Marks**	
6.1	The bidder should have experience of minimum one project in Power Sector (Generation, Transmission or Distribution) in Central/State PSU or Govt. Organization in last 10 years from date of submission of bid to establish that bidder have domain knowledge power sector. • 1 project in Power sector – 5 Marks. • 2 projects in Power sector – 10 Marks **Note:** The projects must be live or completed. In case of a consortium, the criteria may be fulfilled by either the Lead SI or Second Member SI.	10	Bidders must provide the Necessary Purchase Order/ LOI/ Contract Agreement. Further, the bidder must provide the successful completion letter from the client. The successful completion shall include at least one year FMS subsequent to Go-Live.

a) Maximum 100 marks shall be awarded under Technical Evaluation and marking for the same is defined in the Technical Evaluation Criteria above.

b) Those Bids which obtain
   a. minimum 70 marks out of 100 in Technical Evaluation and
   b. [minimum of 5 marks in clause (1.1) in the table above]

   will be considered further for financial evaluation process. However, if none or less than 3 numbers of bidders achieve score of 70 or above marks in technical bid, then top 3 ranked bidders will be considered qualified and financial bids of those bidders shall be opened.

c) The bidder is supposed to give a Technical Presentation and demonstration after the opening of the Technical Proposal of their bid, which shall be carried out only for the bidders who fulfil the Eligibility Criteria.

d) The marks scored by the bidder in the presentation/ demonstration shall become a part of the technical evaluation criteria of total 100 marks

5. Timeline & Milestones

1. The System Integrator (SI) is expected to follow the schedule as mentioned below. Each of the project activity should be accompanied with a presentation on the deliverables by SI.
2. The submission of deliverable will be considered complete only after the submission of hard/soft copy of the deliverables and presentation by SI.
3. The SI must submit a detailed project implementation schedule including but not limited to the below mentioned project activities and list of deliverables that would be delivered during the project implementation.
4. The table gives a set of high level of activities and corresponding expected timelines, which NBPDCL envisions to be required as a part of this project. The SI should use this list only as an indicative guideline expected in terms of activities. The SI is required to furnish detailed information regarding each step of activities proposed during and after the implementation of the project.
5. The project activities and timelines (In Months) as mentioned in the table below is the schedule by which the required project activities shall be completed with corresponding and required deliverables. (Where, T – Agreement Signing Date)

S.No.	**Project milestone**	**Timeline (In Months)**
A	**Activities related to Development & implementation of application software**	
1.	Project Initiation	T+1
2.	Requirement study & Business Blueprinting	T+2
3.	Completion of Asset survey application software (mobile app & related systems) [Design, Develop & Customization of Asset survey application software (mobile app & related systems) to be used for survey related work]	T+4
4.	Completion of Phase-1 UAT: User Acceptance Testing (UAT) of Asset survey application software (mobile app & related systems)	T+5
5.	Phase-1: Roll Out of Asset survey application software (mobile app & related systems)	T+6
6.	Procurement of Infrastructure (DC, DRC)	T+3
7.	Procurement satellite imagery	T+4
8.	Installation & Commissioning of Infrastructure (DC, DRC)	T+5
9.	Phase-2: Completion of other software applications systems [Design, Develop & Customization of other remaining systems as per scope of work]	T+12
10.	Integration of proposed system with other existing systems	T+13
11.	Completion of Phase-2 UAT: User Acceptance Testing (UAT) of Asset survey application software (mobile app & related systems)	T+14
12.	End user Training	T+15
13.	Phase-2: Roll Out of other Application software System	T+16
B	**Milestones related to Asset Survey & preparation of Fixed Asset Register**	
14.	Completion of all pre-survey activities required for timely completion of survey	T+4
15.	Survey team deployment & Training	T+5
16.	Circle wise survey completion for all 35 circles (DICOM:20. Transmission:15)	T+16
17.	Completion of GIS system (Plotting, Geotagging of assets like HT lines, GSS, PSS, DT, Poles, Offices atc., SLD creation, Different layers as per business requirement, Other GIS services)	T+17
18.	Preparation of Fixed Asset Register for all companies	T+18
19.	Application software System - Stabilization Support	T+20
20.	Facility Management Support	5 Years from the date of Go-Live of Phase-2 after Stablilization
21.	Deployment of Support Maintenance team for Maintenance of DC/DR ICT infra, Application Support Maintenance, Circle level manpower for Delta change in assets, Help Desk	5 Years from the date of Go-Live of Phase-2 after Stablilization

The summary of tentative activities to be covered in different milestones is given below along with other details in RFP:

1. Project Initiation

- 1.1. Project Kick Off
- 1.2. Onsite Office Setup
- 1.3. Team Mobilization
- 1.4. Project Charter
  - 1.4.1. Detailed project plan with work breakdown structure along with dependencies
  - 1.4.2. Resource schedule & deployment plan
  - 1.4.3. List of complete deliverables
  - 1.4.4. Project Governance structure & escalation matrix
  - 1.4.5. Stakeholder communication matrix
  - 1.4.6. Project management templates such as Project reports, SLA monitoring, Attendance etc.
- 1.5. Detailed survey to Identify End User Base, License Requirement, Network Communication Feasibility study, Change readiness Assessment etc.
- 1.6. Training & Organization change management strategy & schedule.
- 1.7. SLA and Performance Monitoring Plan.
- 1.8. Asset Survey Strategy and plan
- 1.9. Develop Project Risk Assessment and Define Quality Assurance Plan
- 1.10. Define Project Methodologies, Tools and Project Governance Standards
- 1.11. As-Is Study report including existing business process, workflows, reporting requirement, process maps etc.
- 1.12. Gap analysis report with identified gaps & areas of Improvement.
- 1.13. Strategy for requirement gathering for application software development, conduct asset survey, preparation of FAR etc.

2. Requirement study & Business Blueprinting

- 2.1. Requirement gathering workshops with findings for updated requirement specification.
- 2.2. Detailed To-Be report including:
  - 2.2.1. Business Blueprint/design documents. (High Level Design & Low-Level Design)
  - 2.2.2. Business Process Master List (BPML)
  - 2.2.3. Business Process Re-engineering
  - 2.2.4. Development Scope: Reporting, Interfaces, Conversions, Enhancements
  - 2.2.5. FRS & BPML mapping document
  - 2.2.6. Business Solution Design Document
  - 2.2.7. Updated Functional Requirement Specifications
  - 2.2.8. Updated Technical Requirement Specifications
  - 2.2.9. Requirements Traceability Matrix
  - 2.2.10. Non-functional Requirements Specifications Documentation
  - 2.2.11. Module based Roles & Responsibilities (Authorization Matrix) etc.
  - 2.2.12. Mapped Organogram of BSPHCL & its subsidiaries
  - 2.2.13. List of role-based End users of application software system,
- 2.3. Finalize Development Scope
- 2.4. Business Continuity /Disaster Recovery Plan
- 2.5. Cyber Security Policy
- 2.6. Release Management and Change Management Strategy.
- 2.7. Initiation of Training & Handholding
- 2.8. Change Management Workshops.

3. Completion of proposed application software (mobile app, web applications & other related systems)

- 3.1. Procurement, installation & commissioning of ICT infrastructure at Data Center & Disaster.
- 3.2. Set-up of Data Center Environment.
- 3.3. Setup of Test & Development Environment
- 3.4. Phase-1: Design, Develop & Customization of proposed application software solution related to Asset survey and asset management services (mobile app & back end systems) to be used for survey related work.
- 3.5. Phase-2: Design, Develop & Customization of proposed application software solution related to Asset survey and asset management services (mobile app & back end systems) to be used for survey related work.
- 3.6. Design of Enterprise GIS application for different users/Departments
- 3.7. Solution Testing (Phase-1 & Phase-2)
- 3.8. Configured User Profiles and Roles
- 3.9. Develop and execute Integration Test Plan(s)
- 3.10. System Integration with Existing Solutions (Legacy, Other Systems)
- 3.11. Setup and Install Quality Assurance (QA) Environment
- 3.12. Conference Room Pilot (CRP)
- 3.13. Approved End-User Training Strategy (along with End-User Training Curriculum, Manuals, and Schedule)
- 3.14. Train Core team members and technical users
- 3.15. Strategy for System implementation & rollout
- 3.16. User Acceptance Testing (UAT)
- 3.17. Documentation for Customization of RICEFW (Reports, Interface, Conversion, Enhancements, Forms and

Workflow) Development Objects

3.18. Incorporation of UAT changes

3.19. Implementation Strategy, including Site Readiness Assessment and Change Process Improvement

4. Pre-survey activities: Completion of all pre-survey activities required for timely completion of survey as mentioned below but not limited to:

4.1. Development the survey plan

4.2. Survey team deployment plan

4.3. Development survey strategy

4.4. Development data capturing formats for different asset

4.5. Development input data capturing quality checks

4.6. Development instruction manual for field survey work

4.7. Development of asset codification mechanism, asset valuation mechanism etc.

4.8. Deployment of survey team at all locations after domain training, survey mobile app training

5. Application software System - Roll Out

5.1. Set-up of Data Center Environment

5.2. System - Software licenses

5.3. Application System Performance testing (Execute Stress, Volume, Disaster Recovery and Backup Tests)

5.4. System Roll out

5.5. Tuning of System

5.6. Demonstration & Acceptance

5.7. Incorporation of Changes & Observations

5.8. Stabilization Support

5.9. Go-Live - All Locations

Note:

2. *The Project timelines and schedule mentioned above is indicative and will be finalized based on discussion and agreement between NBPDCL and the successful Bidder (SI).*
3. *Initially, the SI will provide draft schedule with respective deliverables to NBPDCL for their review and feedback within stipulated timelines.*
4. *NBPDCL will provide feedback within the agreed timelines to make necessary changes, corrections, if required. The SI will be required to resubmit the revised schedule document.*

Feedback and revision of documents and deliverables will be an iterative process.

6. Payment Terms

The payments shall be strictly made based on acceptance and quality of deliverables, performance and timelines of services delivered by the System Integrator, Consortium Partner and Other Third-party agencies. (As applicable)

The System Integrator (SI) should produce a completion/ installation certificate indicating "Ready-for-use" status (i.e., delivery, installation, commissioning, and successful operation of system) for respective deliverable/services for system, duly signed as accepted by the NBPDCL & other power companies.

6.1 Mobilization Advance

Sl. No.	Activity	Payment Terms	Payment Milestones
1	**Mobilization advance**	5% of the Implementation phase Cost quoted for Project against a BG of 105% of equivalent value. (System Implementation Phase cost)	• Submission of BG of 110% of equivalent value • Signing of Contract agreement • After successful completion of Project Initiation Phase • Approval by NBPDCL as project mobilization advance • Deployment of resources in NBPDCL & other power companies

6.2 DC & DR System Hardware (DC & DR Infra -Part E)

Sl. No.	Activity	Payment Terms	Payment Milestones
1	**Supply of Hardware**	40% of cost of Part E	• Supply requisite hardware at DC & DR of NBPDCL • Acceptance accorded of receipt by NBPDCL, in form of email or letter.
2	**Installation and Commissioning of Hardware**	40% of cost of Part E	• On installation and commissioning is of the requisite hardware at Dc & DR. • Acceptance of installation accorded by NBPDCL , in form of email or letter
3	**UAT Completion**	10% of cost of Part E	On successful UAT completion and sign off by NBPDCL
4	**Completion of Stabilization Period**	10% of cost of Part E	Submission of Stabilization Period Report

6.3 Software Development & Implementation and training (Software Development & Implementation Cost Cost- Part C & D)

Sl. No.	Activity	Payment Terms	Payment Milestones
1.	Requirement study & Business Blueprinting	**10%** of the cost of Part C	Requirement study & Business Blueprinting approval by NBPDCL
2.	Completion of Phase-1 UAT	**20%** of the cost of Part C	Completion of Asset survey application software (mobile app & related systems) Successful UAT completion and sign off by NBPDCL Roll Out of Asset survey application software
3.	Completion of Phase-2 UAT	**30%** of the cost of Part C	Completion of other software applications systems Successful UAT completion and sign off by NBPDCL
4.	**Completion of GIS system**	**20%** of the cost of Part C	• Completion of geotagging of assets on MAP as per business requirement and accepted by NBPDCL. • On submission of 'System Acceptance Certificate' issued by the NBPDCL & SBPDCL as defined in the Sub-Section 12.4 of Section 6

Sl. No.	Activity	Payment Terms	Payment Milestones
5.	**Rollout**	**10%** of the total cost of Part C	Completion of end user training • Complete and **successful rollout of the system at all locations and** deployment of the all the requisite software along with licenses • Testing and acceptance of the System by NBPDCL & other power companies
6.	**Stabilization & Go-live**	Balance **10%** of the total cost of Part C	• Submission of Stabilization Period Report
7.	**End User Training**	40 % of the total cost of Past D	• Submission of Training Plan , End-User Training Strategy (along with End-User Training Curriculum, Manuals, Schedule) • Successful Completion of end user training
8.	**Core User Training**	30 % of the total cost of Past D	• Submission of Training Plan , Core user Training Strategy (along with core user Training Curriculum, Manuals, Schedule) • Completion of core user training
9.	**Train the trainer Training & Change Management**	30 % of the total cost of Past D	• Submission of Training Plan , Trainer Training & Change management Strategy (along with Training Curriculum, Manuals, Schedule) • Completion of training and change management workshop.

6.4 Map procurement Cost

Sl. No.	Activity	Payment Terms	Payment Milestones
1	**Supply of Satellite Imagery**	40% of cost of Part A	• Supply requisite Satellite Imagery • Acceptance accorded of receipt by NBPDCL, in form of email or letter.
2	**Installation and Commissioning of Satellite Imagery**	40% of cost of Part A	• On installation and commissioning is of the requisite hardware at Dc & DR. • Acceptance of installation accorded by NBPDCL , in form of email or letter
3	**UAT Completion**	20% of cost of Part A	On successful UAT completion and sign off by NBPDCL

6.5 Field Survey & Preparation of Fixed Asset Register (FAR)

Sl. No.	Activity	Payment Terms	Payment Milestones
1	**Completion of Field Survey**	30% of cost actual field survey work completed	The payment of "Field Survey" shall be done monthly/bi-monthly/quarterly on actual field survey work completed as per rates discovered in BOQ "**Field Survey "** Part B. The survey work shall be eligible for payment once logical unit of field survey work completed like completion of entire section/sub-division/division/circle etc.
2	**Verification of Field Survey**	30% of cost actual field survey work completed	The payment of "Field Survey" shall be done monthly/bi-monthly/quarterly after verification by NBPDCL & other power companies as per as per rates discovered in BOQ "**Field Survey "** Part B. The survey work shall be eligible for payment once logical

Sl. No.	Activity	Payment Terms	Payment Milestones
			unit of field survey work completed like completion of entire section/sub-division/division/circle etc.
3	**Preparation of Fixed Asset Register (FAR)**	30% of cost actual field survey work completed	QR Code printing of identified assets On successful UAT completion and sign off by NBPDCL & other power companies for FAR.
4	**On completion of stabilization period**	10% of cost actual field survey work completed	Submission of Stabilization Period Report

6.6 System Operation & Maintenance Phase Cost
(After Successful Go-Live of System)

Sl. No.	Activity	Payment Terms	Payment Milestones
1.	**Annual Maintenance Contract (AMC)/Annual Technical Support (ATS)**	20% of **part F.1 (**Annual payments at the start of each year)	Receipt of confirmation of renewal and invoices from the SI.
2.	**Facility Management Services (FMS)**	5% of **part F.2 (**Quarterly payments at the end of each quarter)	• Receipt of invoices from the SI. • After submission of SLA report by SI and acceptance by NBPDCL & other power companies & adjusting penalty if any.

Note: ***The payment shall be made in the following manner:***

i. The bidder shall submit all the Key deliverables and services to NBPDCL as per the contract agreement.
ii. The completion of work and services shall be verified by NBPDCL designated technical committees
iii. Payment shall be made after due verification and acceptance of completed work and services and issue of completion certificate from the NBPDCL
iv. The Bidder must accept the payment terms proposed by NBPDCL. Any deviation from the proposed payment terms would not be accepted. NBPDCL shall have the right to withhold any payment due to the Bidder, in case of delays or defaults on the part of the Bidder. Such withholding of payment shall not amount to a default on the part of NBPDCL.
v. The scope of work is divided in different areas and the payment would be linked to delivery and acceptance. All/any payments will be made subject to compliance of Service Levels defined and submission of all deliverables in the RFP document. If any of the items / activities as mentioned in the price bid is not taken up by NBPDCL during the course of the assignment, NBPDCL will not pay the fees quoted by the Bidder in the price bid against such activity / item.
vi. Mobilization advance excluding GST shall be paid after contract agreement signed against submission of an irrevocable Bank Guarantee of 110% of the value of mobilization advance issued by any Nationalized Bank or Scheduled Bank to the satisfaction of EMPLOYER as per Annexure. The Bank Guarantee shall be valid upto scheduled completion period which will be extended till recovery of entire advance amount.
vii. The interest rate on advance payment shall be RBI's Base Rate prevailing on the date of disbursement of advance payment. The interest accrued on interest bearing advance shall be adjusted first before releasing any payment.
viii. The advance shall be deducted on pro-rata basis from the running bills of the Bidder. At a later stage, if the Bidder deposits revised irrevocable B.G. corresponding to balance mobilization advance, the same shall be accepted and the original/previous B.G. shall be released. On adjustment of complete amount of mobilization advance from the bills, the B.G. submitted against advance payment will be released
ix. The Firm shall submit a bill in triplicate along with all deliverables as per deliverables section to Chief Engineer (P&E), NBPDCL.
x. The Bill will be verified by IT Team & counter signed by Chief Engineer (P&E), NBPDCL.
xi. Work Completion certificate will be issued by Chief Engineer (P&E), NBPDCL for every milestone.
xii. Senior Manager (Finance), NBPDCL will release the payment.
xiii. The net payment done shall take penalty (as per Penalty Terms) to be deducted into account.
xiv. The Payment shall be made by the Senior Manager (Finance), NBPDCL, upon receipt of the invoice from the successful bidder, after deducting any applicable penalties. NBPDCL shall internally adjust the invoice amount from SBPDCL and BSPTCL as applicable.
xv. The reasons like non-familiarity with the site conditions and/ or existing IT infrastructure will not be considered as a reason for any delay or extra claims whatsoever.
xvi. Any objection/ dispute to the amounts invoiced in the bill shall be raised by NBPDCL within reasonable time from the date of receipt of the invoice. Upon settlement of disputes with respect to any disputed invoice(s), NBPDCL will make payment within reasonable time after the settlement of such disputes.

7. Minimum Resource Requirement from SI

- SI should ensure deployment of enough specialized and experienced manpower throughout the project to complete the scope of work mentioned in RFP (like field survey, development & implementation of enterprise asset & Maintenance management, GIS and related systems) in time successfully.
- At no stage, manpower (with requisite qualification and experience) shall be less than that committed in the bid. Such manpower shall be maintained from start of the project up to complete Go-Live stage and further during Facility Management Support phase.
- SI must propose a team consisting of experienced and skilled professionals with relevant experience in the proposed areas. The minimum desired qualification for the key personnel has been indicated below:

Sl. No.	Position	Responsibilities	Desired Qualification
1.	Project Manager (Project In-charge)	The Project Manager will serve as SPOC and will be responsible for the overall coordination to ensure the satisfactory fulfilment of the requirements and Scope of work including supply, implementation, roll out, acceptance, change management and facility management services etc. for proposed solution. He/she shall act as the representative of System Integrator (SI) on all matters relating to the work. He/she shall keep a close contact with NBPDCL & other power companies and will be responsible for the timely submission of deliverables as per define project plan.	Shall possess an MBA/ M.Tech/ B.E./ B.Tech / MCA /MBA or its equivalent. Shall have more than 12 years of experience and minimum 3 years of relevant experience in large scale Trunkey IT Implementation & survey related Projects. Resource with relevant Project Management Certification like PMP /Prince 2 are preferable
2.	Associate Project Managers (BSPTCL, SBPDCL, NBPDCL)	The Associate Project Manager will serve as Team Leader for BSPTCL, SBPDCL, NBPDCL and will be responsible for the overall coordination for field survey, software implementation, roll out, acceptance, change management and facility management services etc. for proposed solution stack. He/she shall act as the representative of System Integrator (SI) on all matters relating to the work at the respective utility/NBPDCL. He/she shall keep a close contact with respective companies and will be responsible for the timely submission of deliverables as per define project plan.	Shall possess an MBA/ M.Tech/B.E./B.Tech/ MCA /MBA or its equivalent. Shall have more than 8 years of experience and minimum 3 years of relevant experience in IT Implementation & survey related Projects. Resource with relevant Project Management Certification like PMP /Prince 2 is preferable.
3.	Technical & Functional Experts - Application & Modules (Process & Applications)	The Functional expert shall be responsible for Understanding / Identification of NBPDCL & other power companies Business Requirements, Mapping of Existing Business Process, Alignment of Software Solution with NBPDCL & other power companies Business needs and Overall implementation of proposed solution stack & Associated Software Solutions. He/she will interact with NBPDCL & other power companies users and work towards analyzing user related, acceptance related, technical and functional issues of solution	Shall possess MBA/ M. Tech / B.E. / B.Tech / MCA /MBA or its relevant equivalent. Shall have more than 8 years of experience and minimum 3 years of relevant project experience in IT Implementation Projects.

Sl. No.	Position	Responsibilities	Desired Qualification
		stack and work towards closure of them. This will also involve identification of key technical risks associated with the various Functional/Technical areas/modules and work with developers/SI Team towards closure. He/she shall assist NBPDCL by coordinating for IT audit activity and closure of gaps and findings.	
4.	Financial Expert	Shall be responsible for do validation and valuation of all identified asset and related systems as per accounting principles & other guidelines. Shall be responsible for setting up asset codification framework etc.	Shall be Chartered Accountant having minimum 10 (ten) years of experience. Having minimum 5 years of experience of valuation of assets and related systems.
5.	Electrical Domain Expert	Shall be responsible for resolving issues of SI team related to Electrical domain, conducting training to survey team, helping software team in development of required application software etc.	BE/ B. Tech in Electrical Engineering with minimum 8 (Eight) years of experience in the Power Distribution/Transmission Sector.
6.	Enterprise Software Architect	The Solution Architect shall be responsible for analyzing existing and designing upcoming business, information, application, and technology architecture operating at a tactical level for resolution of BSPHCL & its subsidiaries business problems. He / She shall analyze the Enterprise specific requirements, formulate solution framework, technology selection, Overall IT solution development, solution prototype etc. Shall be responsible for planning and implementation of IT equipment's at identified locations, installation and maintenance of hardware, software & network, development of business continuity plan, evaluation of system performance and tracking of project deliverables & progress etc. with overall project management support.	Shall possess B.Tech/B.E./ MCA degree in Computer Science or its relevant equivalent with at least 10 years of experience. Shall have relevant experience of 5 years as solution architect/design. Industry standard and recognized certification on proposed technology platform system is preferable.
7.	Data Centre ICT infrastructure Expert	The DC ICT infrastructure Expert shall be responsible for analyzing existing and designing upcoming DC/DR technology architecture for resolution of NBPDCL business problems. He / She shall analyze the Enterprise specific requirements, ICT sizing, formulate solution, technology selection, implementing overall IT solution etc. Shall be responsible for planning and implementation of IT equipment's at identified locations, installation and maintenance of hardware, software & network, development of business continuity plan, evaluation of system performance and tracking of project deliverables & progress etc. with overall project management support	Shall possess an B. Tech/B.E./MCA/MSc or higher qualification or its equivalent in Computer Science with at least 10 years of experience. Shall have relevant experience of 5 years on DC/DR ICT devices (Servers, Networking, San storage, Virtualisation etc.)Relevant certification from recognized institution shall be preferred

Sl. No.	Position	Responsibilities	Desired Qualification
8.	Cyber Security Expert	Security expert shall be responsible for Data security and data protection, OS hardening, Analysis of logs pertaining to network, storage, server devices to identify potential threats and weakness. He/she shall be responsible for planning, designing, maintenance, management of technical solutions with consideration of IT/Cyber security for overall solution stack	Shall possess MCA / M.Tech / B.Tech/ B.E. degree in computer science or its relevant equivalent with minimum 8 years of experience and 3 years relevant work experience as information security expert. Industry standard and recognized certification like CISSP/CISA certified is preferable.
9.	DC/DR Network & Storage Expert	Network Expert shall be responsible for designing, installation, commissioning and management of networking & Storage requirements which will include configuration, maintenance and upgrade of networks/Storage, networks/Storage security and connectivity, performance monitoring, testing, networks/Storage user account management, define policies and procedure	Shall possess M.Tech / B.Tech/ B.E. / MCA degree or its relevant equivalent with minimum 8 years of relevant work experience as Network/ Storage Administrator.
10.	Application Developer	The application developer shall have experience in successful design / development / customization / implementation of proposed solution stack etc. He / She shall be responsible for development, customization and resolution of technical issues pertaining to the proposed software solutions.	Shall possess B.E. / B.Tech / MCA/ M.Sc. in Computer Science or its relevant equivalent. He/she shall have minimum 6 years of experience as a developer with expertise on software solutions. Certification on platform / language quoted by SI is preferable.
11.	System/ Database Administrator	Shall be responsible for all the requisite System/ Database Administration & Facility Management work required for proposed Database Servers, User configuration, Account management, Network management, Management of software, security and network solutions on 24X7 basis. System/Database Experts shall have experience in Server/Database Solution like monitoring and maintenance of Servers, databases, installation of Server/database software patches/upgrades, monitoring of database backups, database replication techniques, standardization and implementation of Server/ databases to improve the management of production and test environments. Shall support users by resolving problems with applications' databases with monitoring and allocate volumes, analysis of utilization and resources, performance tuning, monitor DB replication, archival, coordination of system upgrades or fixes.	Shall possess B.Tech/B.E./MCA/M.Sc. in Computer Science or its relevant equivalent with at least 5 Years of work experience as System/Database administrator with End-to-End implementation and support for IT Solution Systems.
12.	Solution Tester	The Solution Tester shall be responsible for	Shall possess B.E. / B.Tech / MCA/

Sl. No.	Position	Responsibilities	Desired Qualification
		Requirement analysis, Creation of Test plans, Writing & Reviews of Test Scenarios/Test Plan/Test Case, Identifying of Test data requirements, Test automation, Test Execution, Defect logging/follow-up, Formulation of test reports, Summarizing the release with learning from the project. He/she shall ensure that all testing related work is carried out as per the defined standards and procedures.	M.Sc. in Computer Science or its relevant equivalent. He/she shall have minimum 4 years of experience as a Software Solution tester.
13.	Mobile Application Expert	The Mobile Application Expert shall have experience in successful design/development/customization /implementation of the Mobile application and Mobile Device Management platforms/applications including Android, IOS etc. He/she shall be responsible for planning, designing, customization, maintenance and management of Mobile Applications for proposed System with proposed systems feature on mobile or Other Supporting Application deployed during the project.	Shall possess B.Tech/B.E./MCA/ M.Sc. in Computer Science or its relevant equivalent with minimum 5 years of relevant work experience in areas of Android, IOS etc. application design, development, customization etc. Industry standard and recognized certification in mobile application development is preferable.
14.	Change Management Professionals	End User Training expert shall be responsible for developing change management strategy, providing required training to the end users, conducting change management workshops for proposed Solution Stack implementation, roll out, acceptance and handholding etc. by the end-users. Conducting change management workshops, developing change management strategy and ensuring it implementation at NBPDCL & other power companies.	MBA/ M.Tech/ B.E./ B.Tech / MCA/MBA or its equivalent. Minimum 8 years of experience, including experience of Conducting change management workshops, developing change management strategy for IT-Implementation Projects.
15.	Field Survey Lead	The Field Survey Lead shall be responsible for overall field survey activities including data collection, data preparation, data cleansing, data entry etc. He /She shall interact with Line-of-Business Process and data owners to drive coordination of field survey, data collection, data quality assurance and data availability in target system related activities. He /She will lead, co-ordinate and supervise the central and field team for survey and interface design, conducting of the survey, and act as a focal point to the NBPDCL throughout the duration of the Project He/She will be responsible for:	Shall possess Master's Degree (or equivalent) in Economics, Statistics, Econometrics, Population Demographics, Developmental Studies or related field(s) with at least 10 years of Relevant Professional Experience.

Sl. No.	Position	Responsibilities	Desired Qualification
		o Overall execution of the Project from data collection plan to data analysis, report writing and presentation o Accountable leadership providing supervision and guidance, problem solving support and leading discussions with senior stakeholders o Project management of the project as per agreed activities, timelines and deliverables o Supervise framing of all survey activities as per the deliverables and milestones, and ensuring such deliverables & milestones are satisfactorily delivered/met o Communication related activities o Working with the client project team and stakeholders o Sending periodic updates, and highlighting challenges in project execution	
16.	**Field Survey Supervisor**	The supervisor will supervise, monitor, and coordinate the day-to-day operations and work of field team responsible for the survey. • He/She will report the day-to-day operations of the field team responsible for the survey to the Field Survey Lead of the survey. • He/She will conduct quality checks of conducted surveys, field inspections and compile the recorded surveys in the allocated area and reports to the central team. • He/She will ensure that the data is uploaded/updated at the backend system post collection and is available to the NBPDCL & other power companies in real time.	Shall possess Graduate Degree (or equivalent) preferably in Economics, Statistics or related field(s) with at least 5 years of Relevant Professional Experience.
17.	Field Surveyor	He/She will be responsible for collecting the data. • The field surveyor shall coordinate with the officials of the NBPDCL & other power companies and collect the requisite data, in accordance with instructions and guidelines outlined in the project. • He/She will ensure data is collected from the eligible sources and is in the required format. S/He will capture the data in mobile and submit it in central system report the same to the supervisor. • HE/She will identify and resolve inconsistencies if any by discussion with NBPDCL & other power companies officials	Shall possess Graduate Degree (or equivalent).

Sl. No.	Position	Responsibilities	Desired Qualification
		• He/She will ensure data collection as per the specified time schedule. • She/He shall identify and report to supervisors, problems in obtaining valid data.	
18.	Facilities Management (Support & Maintenance After Go-Live)	Responsible for System Management Services of devices and systems installed at DC & DRC for maximum uptime and performance levels of installed System is ensured as per SLA. Responsible for other managed services like backup, restore, cyber security monitoring, performance monitoring etc. Responsible for Management Services of proposed software applications and systems installed at DC & DRC for maximum uptime and performance levels of installed System is ensured as per SLA. Responsible for implementation of new requirements as per business need in proposed software applications.	MCA / B. Tech / BE / Diploma (IT or CS) with minimum of 3 years of experience in related field.
19.	Circle Level Support (Support & Maintenance After Go-Live)	Responsible for completion of delta change in fixed assert register, identify new incremental assets and include the same in FAR. Responsible for resolving end user issues.	B. Tech / BE /MBA or its equivalent with minimum of 3 years of experience in related field.
20.	Help Desk Staff/ IT Support Staff	Help Desk Staff/ IT Support Staff shall be responsible for facilities management support for software provided to NBPDCL & other power companies. They will also coordinate with other vendors for hardware, network and other infrastructure provided by NBPDCL. They will also assist in end user training and handholding for carrying out day to day operations.	Graduate / Diploma (IT or CS) B. or its equivalent with minimum 3 years of experience in support role for an IT project

7.1 Initial Composition, Full Time Obligation; Continuity of Personnel

a) The SI shall ensure that Key resources required for project execution and management devotes substantial working time to perform the services to which that person has been assigned.

b) The SI shall not make any changes to the composition of the Key Resources or request any member of the Key Resource to cease or reduce his or her involvement in the provision of the Services during the Term (or agree to any request other than from NBPDCL that would have the same effect):
   - unless that person resigns, is terminated for cause, dies, is long-term disabled, is on permitted mandatory leave under Applicable Law or retires; and
   - Without NBPDCL prior written consent. The clauses of non-disclosure agreement shall always operate in any such case.

c) The SI must provide the minimum number of resources at the locations as specified by the NBPDCL However, the number of resources and locations provided below are only indicative, the SI shall carry out an assessment and propose actual number of resources requirements with appropriate approval from NBPDCL.

d) SI will be responsible for deploying the manpower during the Project Implementation phase to meet the project timelines and during the Facility Management Service (FMS) phase to meet the SLA requirements. Therefore, for calculation of actual number of resources, the SI shall factor the project implementation timelines and SLA's requirements after Go-Live of proposed solution stack at NBPDCL.

e) The Bidder needs to submit detailed CVs of each of the resource and Project Manager of the proposed project team. The Project team provided by the SI must be on their regular roll and SI shall certify the authenticity of their regular employment.

f) The SI shall deploy the minimum **16 resources for** Facility Management Services and Help Desk support at the centralized help desk of NBPDCL.

7.2 Before proposed System Go–Live

SI shall deploy the Project Manager (Project In-charge) including Technical, Functional Experts and Other Support Staff at the identified project locations during the implementation and roll out of System.

The Key project resources including Project Manager and Functional Expert shall be based at NBPDCL headquarters. Also, the SI shall deploy/depute requisite no. of survey manpower/IT/Subject matter resources before and during Go-Live of sites for coordination and user handholding. This is an important ask as the end users may face many problems during Roll Out and Go-Live declaration of individual sites.

The resources required before Go-Live is mentioned below.

Sl. No.	**Position**	**Min No. of Resources Required (Before Go- Live)**
1.	Project Manager	1
2.	Associate Project Managers	3
3.	Proposed solution Module – Functional Leads (Asset Management, Operation Management, GIS system)	3
4.	Financial Expert	As required (Minimum one)
5.	Power Sector Specialist	As required (Minimum one)
6.	Data Centre ICT infrastructure Expert	As required (Minimum one)
7.	Enterprise Software Architect	As required (Minimum one)
8.	Application Developer /Programmer	As required (Minimum 12)
9.	System/Database Administrator	As required (Minimum one)
10.	Change Management Expert	As required (Minimum one)
11.	Solution Tester	As required (Minimum 6)
12.	Network/storage Expert	As required (Minimum one)
13.	Cyber Security Expert	As required (Minimum one)
14.	Mobile Application Expert	As required (Minimum 4)
15.	Field Survey Lead	Minimum one
16.	Field Survey Supervisor	Minimum one at each circle/division
17.	Field Surveyor	A minimum of 250 surveyors shall be deployed, or additional surveyors as required, to ensure timely completion of the survey. Multiple teams to be deployed at circle/division/sub-division level to complete the survey within time.

Table 7: Manpower Requirement before Go-Live

7.3 Post System Go-Live

SI shall deploy the Project Manager (Project In-charge) including Technical, Functional Experts and Other Support Staff at the identified project locations during the post Go-live and Facility Management support Phase.

The Key project resources including Project Manager and Experts shall be based at NBPDCL headquarters. Also, the SI shall deploy adequate no. of IT/Subject matter resources for overall support post Go-Live and FMS phase of project which may be increase/decrease as per requirement. After System Go-live, the SI should provide necessary resources and support staff for NBPDCL & other power companies.

The minimum resource requirement post Go-Live is mentioned in table below:

Sl. No.	**Position**	**Min No. of Resources Required (After Go- Live)**
1.	Project Manager	1
2.	Proposed solution Module – Functional Leads (Total XX - Resources one for each Module)	(One Resources for each Module)
3.	Proposed solution Module – Functional Leads (Asset Management, Operation Management, GIS	As required

Sl. No.	Position	Min No. of Resources Required (After Go- Live)
	system)	
4.	Financial Expert	As required
5.	Power Sector Specialist	As required
6.	ICT Infrastructure Lead	As required
7.	Data Centre IT services expert	As required
8.	Application Developer /Programmer	As required
9.	System/Database Administrator	As required
10.	Enterprise Architect/ Integration Expert	As required
11.	Solution Tester	As required
12.	Network Expert	As required
13.	Cyber Security Expert	As required
14.	Mobile Application Expert	As required
15.	IT managed services at DC & DRC	As required (Minimum 4)
16.	IT application software support services	As required (Minimum 4)
17.	Help Desk Staff/ IT Support Staff	As required (Minimum 4)
18.	Division Level Support (Support & Maintenance)	One at each division (124) for Delta change of FAR and other related work

Table: Manpower Requirement After Go-Live

8. Documentation and Deliverables

To ensure that the proposed System & overall solution conforms to the requirements, specifications, and delivery schedule, the SI shall submit the documentation and deliverables for review and approval by NBPDCL.
The SI shall obtain the approval on the relevant deliverable at each stage of project before proceeding for solution purchase, provisioning, deployment, testing, roll out, training etc. at NBPDCL.
As part of solution implementation, the SI shall submit all required deliverables as necessary for successful completion of project and required by the purchaser.

8.1 Deliverables Acceptance Procedure

The acceptance procedure of deliverables & overall solution for proposed system shall include:

- Initially, SI will provide draft deliverable for proposed system & Overall solution by considering the approved project timelines for review and feedback of NBPDCL within stipulated timeframe.
- NBPDCL will provide feedback within the agreed timeframe to make necessary change corrections (if required).
- SI shall be required to re-submit the revised documents/deliverables.

8.2 Key Deliverables

The indicative list of project deliverables which are required to be submitted by the SI shall include, but not limited to the following:

Project Phase	Key Deliverables	Frequency
Project Initiation	2. Project Kick-off with presentation on Proposed solution System overview to Senior Management.	Once
	3. Project Charter. a) Detailed project implementation plan with work breakdown structure along with dependencies b) Resource schedule & deployment plan c) List of complete deliverables d) Project Governance structure & escalation matrix e) Stakeholder communication matrix f) Project management templates such as Project reports, SLA monitoring, Attendance etc. g) Detailed Survey Report with Identify End User Base, License Requirement, Network Feasibility, Change readiness Assessment etc. h) Roles & responsibilities	Once
	4. Detailed training/Organization change management strategy & schedule	Once
	5. SLA and Performance Monitoring Plan	Once
	6. Survey plan & Strategy	Once
	7. Risk Management & Quality Assurance Planning Reports	Once
	8. As-Is Study report including existing business process, workflows, reporting requirement, process maps etc.	Once
	9. Gap analysis report with identified gaps & areas of Improvement.	Once
	10. Specifications for DC and DRC Infrastructure.	Once
	11. Exit Management Plan	Once
Procurement of Infrastructure (DC, DRC)	1. Technical & Functional Specs, Bill of Materials/Bill of Quantity, Scope of Services, SLA etc. for procurement, installation & commissioning of the infrastructure i.e., Data Center & Disaster Recovery Services	Once
Business Blueprinting	1. Requirement gathering workshops with Updated requirement specification document	Once

Project Phase	Key Deliverables	Frequency
	2. Detailed To-Be report including: a) Business Blueprint/design documents. (High Level Design & Low-Level Design) b) Updated Bill of Material/Bill of Quantity c) Business Process Master List (BPML) d) Business Process Re-engineering e) Development Scope: Reporting, Interfaces, Conversions, Enhancements f) FRS & BPML mapping document g) Business Solution Design Document h) Updated Functional Requirement Specifications i) Updated Technical Requirement Specifications j) Requirements Traceability Matrix k) Non-functional Requirements Specifications Documentation l) Module based Roles & Responsibilities (Authorization Matrix) etc. m) Mapped Organogram of BSPHCL and its subsidiaries n) List of role-based End users of proposed system,	Once
	3. Business Continuity/Disaster Recovery Planning Report	Once
	4. Cyber Security Policy	Once
	5. Release Management and Change Management Strategy Document	Once
	6. Training & Handholding Activity	Monthly
	7. Refined Data Conversion and Migration Strategy	Once
	8. Change Management Workshops	Quarterly
	9. Business Blueprint/Elaboration phase closure report	Once
Design & Customization	1. Test & Development Environment	Once
	2. System – Design, Development & Customization Report	Once
	3. Baseline Configuration and Documentation	Once
	4. Customization and Configuration documentation	Once
	5. Documentation on User Profiles and Roles	Once
	6. System – Testing Report (Load, Stress, Integration, Performance Etc.) a) Test Plan, b) Roles & responsibilities, c) Test Scripts, d) Issue log, e) Issue Resolution Report	Once
	7. System Integration with Existing Solutions (Legacy, Other Systems)	Once
	8. System – Integration Test Report	Once
	9. Quality Assurance System	Once
	10. Conference Room Pilot (CRP) Report	Once
	11. Approved End-User Training Strategy (along with End-User Training Curriculum, Manuals, and Schedule)	Once
	12. Trainings to Core Team/Nodal Officers	As per training plan
	13. System implementation & rollout strategy	Once
	14. User Acceptance Testing (UAT) Report	After software and hardware delivery and after implementation
	15. Documentation for Customization of RICEFW (Reports, Interface, Conversion, Enhancements, Forms and Workflow) Development Objects	Once
	16. Data Archiving Plan	Once
	17. Refined End User's training plan	Once
	18. User Training Manual, FAQ etc.	Once
System -	1. Cut-over Communication Strategy	Once

Project Phase	Key Deliverables	Frequency
Stabilization Support	2. Pre-Go-Live Assessment Report	Once
	3. Enterprise wide Go-live completion report	Once
Facility Management Services	1. System Performance Report (SLA compliance)	Monthly
	2. Monthly activities report (including Issue tracker, Helpdesk ticket analysis, Change Request status and Status of all service requests logged with Offered Product etc.)	Monthly
	3. Solution usage reports - transactions and users	Monthly
	4. User Manual with necessary revision.	Once
	5. Change Management & Release Management Reports	Quarterly
	6. Issue log and resolution report	Monthly
	7. Revised Exit Management Plan	Once

Note:

- *The Project deliverables mentioned above are indicative and shall be finalized based on discussion and agreement between System Integrator and* NBPDCL & other power companies
- *SI will provide respective deliverables as per the captured schedule for their review and feedback of NBPDCL*
- *NBPDCL will provide feedback within the agreed timelines to make necessary changes, corrections, if required. SI will be required to resubmit the revised deliverables.*
- *Feedback and revision of documents and deliverables will be an iterative process.*

8.3 Documentation Requirements

a) End-User Documents

Documentation will be supplied and maintained by SI during the project. The ownership of all documents, supplied by SI, will rest with *NBPDCL*. The electronic copies shall be submitted along with all the paper documents and manuals, required for operating and configuring the system. The documents provided must include at least:

a) User Manual (both online and paper copies) providing detailed instructions on how to use the proposed system. In addition, it describes how to access, submit inputs to, and interpret outputs from the application
b) System installation guide including the configuration of the supplied infrastructure.
c) User will have the rights to duplicate the hardcopy and soft copy for the documents created by the SI without any financial and legal implications
d) Module wise - Application Training Manuals

b) Technical Documents

SI shall supply operation and maintenance manuals for all deliverables. These shall be in such details as to enable NBPDCL & other power companies to operate, maintain, adjust, and fix the system etc.

SI must ensure that the proosed system components being developed are thoroughly documented with comprehensive manuals and adhere to standard methodologies in software development as per ISO and/or CMMi models. The documents including but not limited to are:

a) Product installation and configuration steps
b) Application access procedures
c) User screen layout and content
d) Transaction entry procedures
e) Batch job setup, processing, and recovery/restart procedures
f) Error codes with full descriptions and recovery steps
g) Standard report layout and content
h) Internal processing controls
i) Application security
j) Operating specifications and system flowcharts
k) Database entity relationships, table formats, and data element descriptions; and Program module descriptions
l) Quality Assurance Plan Documenting the planned and systematic pattern of all actions necessary to assure confidence that the software developed will conform to the NBPDCL & other power companies functional and technical requirements.
m) Interface Control Document - Documenting the interface characteristics of one or more IT systems and document the Integration & interface agreements between interface owners. It contains information on both physical and data element requirements that are necessary to make the transfer of information between systems feasible.
n) Test Plan Containing information on the software test environment to be used for independent testing, the test cases to be performed, and the overall testing schedule. This includes methodology, schedule, resources, tools, procedures, environment definition, test cases, and software test results.
o) Systems Manual Detailing the data structure, table, forms, and report structures.
p) Installation and maintenance manual for the servers and other hardware
q) Operations Manual providing instructions for installing the application, troubleshooting, interpreting message logs, and FAQs
r) Trouble Shooting Guide/ Handbook for Helpdesk which describes the various trouble shooting methods.

9. Service Level Agreement (SLA)

The Service Level Agreement (SLA) is the agreement between NBPDCL and SI during the project implementation and further during Facility Management Support phases of the project. The SLA defines the responsibility of SI in ensuring the performance of Project based on agreed performance indicators as detailed in the agreement. It is expected that the system shall meet the minimum threshold of service defined against each level. Any degradation below this minimum threshold will attract penalties as per bands of service level met. The idea is that it triggers a proper review of any failure / performance that had been agreed upon for the project, and to find resolutions in keeping with the highest standards of service excellence.

SI shall be responsible for 24*7*365 management of all systems during the implementation of overall solution and Facility Management Service (FMS) period. The purchaser would monitor the SI performance and compliance to standards with respect to agreed upon SLA. SI shall develop service level monitoring tools.

9.1 Service Level Agreements Monitoring

a) The Purchaser will carry out the quarterly monitoring and performance review of System Integrator against the monthly formulated reports for SLA. A designated third party or personal from Purchaser will review the performance of SI against the SLA.
b) The SLA reports shall be formulated based on the automated system generated reports.
c) The System Integrator shall submit the monthly SLA report to designated Nodal officer as per agreed frequency and timeline.
d) For requirement of SLA audit, the Purchaser may perform a visit either by internal department or by an external contractor at respective DC/DR locations.
e) The review / audit report will form a basis of any action relating to imposing penalty on or breach of contract of the SI.

9.2 Service Level Agreements and Targets

The service levels agreements shall be agreed by the SI as a key performance indicator for this engagement. These key indicators shall be used while monitoring and measuring performance of SI. The service level indicators have been categorized under:

1. During Implementation SLA Indicators
    a. Project Implementation –System Go-Live
2. System - Post implementation SLA Indicators
    a. Availability management
    b. Problem Resolution and Notification Times
    c. Performance related SLA
    d. Services related SLA

All management tools required to monitor the performance of the service should be provided by the SI at no extra cost. The SI would be required to provide access to the management tools to the Purchaser for monitoring purposes and would also provide the MIS reports for overall project and SLA monitoring as a part of the contract.

System Integrator shall provide all the necessary diagnostic/monitoring tools and technology as requested and required by the Purchaser to monitor the System. These tools shall monitor the product, process, and elements of the system to generate the reports and logs which can be utilized by the Purchaser for further improvement and enhancements of overall system.

The description of the indicative Service Level Agreement (SLA) has been presented below. A complete Service Level Agreement will be made with the successful bidder at the time of signing the contract.

9.3 Project Implementation Phase SLA (During Implementation)

The proposed application system including all the applications/supporting system must be implemented by the System Integrator (SI) as per the timelines mentioned in this RFP.

Any delay in implementation will attract penalty for every week of delay subjected to an overall maximum penalty of **10% of total awarded project cost**. It will be levied for the duration equivalent to number of weeks delayed which shall become due to be deducted from subsequent month's billing.

a) Penalty against Delay in Implementation Phase Completion

T = Date of Signing of Contract between NBPDCL and Selected Bidder

S. No.	Project Phase	Time schedule	Penalty*
1.	Project Initiation	To + [1] Month	0.5% per week of delay or part thereof
2.	Procurement of Infrastructure (DC, DRC)	To + [3] Months	0.5% per week of delay or part thereof
3.	Installation & Commissioning of Infrastructure (DC, DRC)	To + [4] Months	0.5% per week of delay or part thereof
4.	Requirement study & Business Blueprinting	To + [2] months	0.5% per week of delay or part thereof
5.	Completion of Asset survey application software	To + [4] months	0.5% per week of delay or part thereof
6.	Completion of Phase-1 UAT	To + [4.5] months	0.5% per week of delay or part thereof
7.	Phase-1: Roll Out	To + [5] months	0.5% per week of delay or part thereof
8.	Phase-2: Design & Customization	To + [7] Months	0.5% per week of delay or part thereof
9.	Phase-2 UAT	To + [8] Months	0.5% per week of delay or part thereof
10.	Phase-2: Roll out	To + [10] Months	0.5% per week of delay or part thereof
11.	Training and Go-Live Phase	To + [10] Months	0.5% per week of delay or part thereof
12.	Stabilization Support Phase	To + [12] Months	0.5% per week of delay or part thereof
13.			
14.	Completion of all pre-survey activities required for timely completion of survey	To + [3] Months	0.5% per week of delay or part thereof
15.	Survey team deployment & Training	To + [5] Months	0.5% per week of delay or part thereof
16.	Circle wise survey completion for all 35 circles (DICOM:20. Transmission:15)	To + [10] Months	0.5% per week of delay or part thereof
17.	Completion of GIS system	To + [11] Months	0.5% per week of delay or part thereof
18.	Preparation of Fixed Asset Register for all companies	To + [12] Months	0.5% per week of delay or part thereof
19.	Facility Management Support Phase	5 years (Effective from Go-live)	0.5% per week of delay or part thereof

**Penalty shall be imposed on the total awarded project cost*

Deliverables in each phase would be as defined in RFP.

9.4 Facility Management Phase SLA (Post Implementation)

9.5 Calculation for Post Implementation SLA

a) Uptime Calculation for the Month

1. {% Monthly Availability = [(Actual Uptime + Scheduled Downtime) / Total No. of Hours in a Month] x 100}
2. "Actual Uptime" means, of the Total Hours, the aggregate number of hours in any month during which each equipment/cloud component is available for use.
3. "Scheduled Downtime" means the aggregate number of hours in any month during which each equipment, is down during total Hours, due to preventive maintenance, scheduled maintenance, infrastructure problems or any other situation which is not attributable to Bidder's (or Service provider's) failure to exercise due care in performing Bidder's responsibilities.
4. The NBPDCL would provide a maximum of 04 hours of planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service.
5. The downtime for scheduled maintenance (patch application, upgrades – OS, Database, etc.) would need to be mutually agreed between NBPDCL and the SI. To reduce this time, various maintenance activities can be clubbed together with proper planning.

6. "Total Hours" means the total hours over the measurement period i.e. one month (24 * number of days in the month).

b) Downtime Calculation:

The recording of downtime shall commence at the time of registering the call and/or notifying or intimating the System Integrator (SI) for any downtime situation for the application/service/equipment.

Downtime shall end when the problem is rectified, and the application/ service is available to the user.

Outage under the following situations shall not be considered in down time calculation:

1. Pre-scheduled and approved preventive maintenance and health checks (Scheduled Downtime).
2. Failover time (30 minutes) in case of cluster environment. Beyond 30 minutes the service would be considered as not available and appropriate penalty shall be imposed on the SI.
3. Bug in any application which causes the non-availability of a specific service and not the system as whole. Complaint redressal SLAs along with defined criticalities shall however apply
4. If NBPDCL elects to continue the operation of the machine / equipment, when a part of the machine is giving problem and leading to downtime, the commencement of downtime shall be deferred until the NBPDCL releases the machine / equipment to the Bidder for remedial action.

9.6 Typical Facility Management Services (FMS) availability & duration of their requirement

The criticality of the required services is categorized under the four categories/priorities i.e. Critical, High, Medium and Low Priority. Each of the Support Category is associated with respective response and resolution time. The Criticality definition chart is tabulated below for reference.

Support Category	**Criteria**	**Maximum Response Time**	**Maximum Resolution time**
Critical	The system is unable to be used for normal business activities. There is certainty of financial loss to NBPDCL & other power companies.	15 Minutes	60 Minutes
High	There is a problem with a part of the system, which impacts on NBPDCL & other power companies decision making. No viable workaround is available. There is a likelihood of financial loss.	1 Hour	6 Hours
Medium	The efficiency of users is being impacted but has a viable workaround.	2 Hours	24 Hours
Low	A fault, which has no particular impact on processing of normal business activities.	8 Hours	48 Hours
Note:	Financial loss means inability to use system for desired services for Operation & maintenance related work		

The final decision for categorization of the services based on respective category shall be taken by the NBPDCL, Post on boarding of System Integrator (SI), though for simplicity followings are indicative categorization:

Service	**Duration**	**Criticality**
Help Desk (Business Hours)	12x7	High
Application Issues/Change management Handling	12x6	High
DC/DR hardware/software support/maintenance	24x7	Medium
DC/DR based Data Centre / Disaster Recovery Administration	24 X7	Critical
Server Administrator Services	18 X7	Critical
Database Administration Services	18 X7	Critical

Service	Duration	Criticality
Network Management – WAN Connectivity based DC/DR	18 X7	Critical
Antivirus & Security Administration	12x7	High
Storage Management	18 X7	Critical
Backup Management (as per decided schedules)	Scheduled	High
Business Unit (i.e. SDO / Division / Region / Zone)	12x6	High

9.7 **Availability Management**

1. Availability of IT system - High Availability is a key requirement of Purchaser as the application will enable Purchaser officials to deliver the key activities related to various activities. The expected availability of IT system should be at minimum 99%. The project must also be able to rebound or recover from any planned or unplanned system downtime, ensuring a minimal impact on the operations. The selected System Integrator should provide a single point of contact on a 24*7 basis.
2. Availability will be measured on monthly basis. Planned downtime will not be classified as unavailability. Planned downtime where both main as well redundant systems are not available for providing service will be limited to maximum of 48 hours in a month. The selected bidder should endeavor to take such downtimes only during weekends or holidays preferably after End of Day (EoD). However, duration of the maximum allowable planned downtime time will be reviewed on quarterly basis.
3. The failure of application on account of non-availability of infrastructure provided by Purchaser shall not be considered while calculating SLA for that quarter.
4. Any breach in SLA will attract penalty on the total Invoicing Value (FMS Cost) subject to a maximum penalty of 20% of the Invoicing Value, both as a penalty in single service breach or as an aggregate penalty on multiple service breach, beyond which it will result in no payments for that FMS Cost.
5. In case of penalty due to service level breach is more than 20% of the Invoicing Value (FMS Cost) consecutively for 2 (two) times, DISCOM reserves the right to serve the termination notice to the selected bidder.
6. The following table outlines the availability service levels:

S. No.	Service	Parameter	Service level	Validation	Penalty
1	Business Applications Software	Availability of Business Application Software as mentioned in the Scope of Work	>=99.5% uptime: No Penalty	Availability & Downtime Reports measured using Management Tool. Measured 24*7 Basis and Validated by Monthly SLA Performance Report.	For every 0.5% decrease of SLA, 1 % of the Monthly FMS cost will be deducted

S. No.	Service	Parameter	Service level	Validation	Penalty
2	Business Supporting Applications (Geo-tagging, Mobile Apps, Web-service, Dashboards, Ticketing)	Availability of supporting Applications and System Software Services which are required to support the Business Applications as mentioned in Scope of Work	>= 99.5% uptime	Availability & Downtime Reports measured using Management Tool. Measured 24*7 Basis and Validated by Monthly SLA Performance Report.	For every 1% decrease of SLA, 1 % of the Monthly FMS cost will be deducted
3	Integration Services uptime	Availability of Web Services/ Middleware for Integrating proposed System.	>99.5% uptime	Availability & Downtime Reports measured using Management Tool. Measured 24*7 Basis and Validated by Monthly SLA Performance Report.	For every 1% decrease of SLA, 1 % of the Monthly FMS cost will be deducted
4	Data Management i.Partial Loss-recoverable ii.Partial Loss- Non-recoverable iii.Permanent Loss	Ensure availability of all the transactional and static data	100%	Database audit and reconciliation report	For every established incidence of data loss, 1 % of the Monthly FMS cost will be deducted
5	Anti-Virus Management	Rollout of latest anti-virus definition file on workstations and servers once it is made available on supplier's/OEM website	>=99.95%	Reports generated from Anti-Virus software console	1% of the Monthly FMS Cost for each default
6	Network Administration for Data Centre & Disaster Recovery Centre	Network Availability Minimum of 99.5% uptime for Data Centre and Disaster Recovery Centre	>=99.5% uptime measured on Monthly basis	Availability & Downtime Reports measured using Management Tool. Measured 24*7 Basis (Measured Monthly) and Validated by	For every 1% decrease of SLA, 1 % of the Monthly FMS cost will be deducted

S. No.	Service	Parameter	Service level	Validation	Penalty
				Monthly SLA Performance Report	
7	Server Administration/ Management	Rollout of patches (OS, infra level) on workstations and servers after patch being approved on test environment	98%	Patch update report	Less than 98%, 1 % of the Monthly FMS Cost
		Uptime of Application Servers	>=99.5%	Report	For every 0.5% decrease of SLA, 1 % of the Monthly FMS cost will be deducted
		Uptime of Supporting System Servers	>=99.5%	Report	For every 1% decrease of SLA,1 % of the Monthly FMS cost will be deducted
8	Data base Administration services	Uptime of Database	>=99.5%	Report	For every 0.5% decrease of SLA, 1 % of the Monthly FMS cost will be deducted
		MIS report of database schema, disk space, storage, and user roles	99%	Report	For every 1% decrease of SLA,1 % of the Monthly FMS cost will be deducted
9	Backup/ restore management	The System Integrator should take backup as per the backup schedule defined by BSPHCL	99%	Report	If the negligence is found in monthly audit, the System Integrator would be penalized 1% of the Monthly FMS Cost for each default
		BSPHCL would periodically ask (once a month on a random day) SI to restore the backup data	100%	Report	1% of the Monthly FMS Cost for each default
10	Change Management	Resolution of Change Management ticket	99%	Monthly Reports	2% of the Monthly FMS cost if agreed date for requested change is not adhered
11	Release Management	Resolution of ticket logged in incident management tools	99%	Reports generated from Ticket logging system	1% of the Monthly FMS Cost for each default
12	Problem Management	SI shall analyse all the incidents and provide a root cause report every month if there are more than 5 incidents of the same type. SI shall	100% timely submission covering all incidents logged in that month	Root cause Report. Incident Report stating problems faced by the users. Report	2% penalty of the Monthly FMS cost, if the SI does not submit a problem report for that month. 5% penalty of the Monthly FMS Cost if the SI does not perform the corrective action for more

S. No.	Service	Parameter	Service level	Validation	Penalty
		take the needed corrective action to prevent further issues due to the same cause.		detailing corrective and preventive actions	than one calendar month.
13	Cyber Security Management	Should be part of monthly status report	98%	Report	1% of the Monthly FMS Cost
14	Implementation of Audit/ Regulatory Recommendations	Implementation of audit recommendations given by purchaser or its auditor/ regulator which have been agreed by SI to be implemented.	100%	Completion within agreed timeline and Reports	0.05% of the Monthly FMS Cost for every day's delay on an incremental basis
15	Resource Management	Number of shift days for which resource present at the designated location / Total number of shift days	>=98% averaged over all resources designated for SI services - calculated on a monthly basis	Attendance track Call Log Audit calls/ visits Measured on a monthly basis	If the resource availability is less than 98%, then payment shall be deducted based on the pro-rata basis. (Total FMS cost per day divided by nos. of persons deployed) * (Total non-available Personnel)
		Resource provided is not as per specified certification / experiences	100% compliance	Experience Certificate and CV of FMS personnel submitted by SI to the DISCOM	Per day deduction per resource person = 0.5 * (Monthly value for that manpower) / 30
16	SLA Monitoring Report	Availability of SLA reports covering all parameters required for SLA monitoring within the defined time	7 working days from the end of the month	Monthly Report	5% of Monthly FMS Cost

Note: Although SLA penalties shall be calculated as per above table, however total penalty to be deducted is to be capped at 20% of the Monthly Invoicing Value (FMS Cost). In case of penalty due to service level breach is more than 20% of the Monthly Invoicing Value consecutively for 2 (two) calendar months, DISCOM reserves the right to serve the termination notice to the selected bidder

10. Conditions of Contract

10.1 General Conditions of Contract

Articles/Clauses	
4. Definitions and Interpretations (a) Definitions	1.1 In this Contract, unless the context otherwise requires, the following words, expressions and abbreviations shall have the following meanings: (a) **"Affected Party"** means any of the SI or the NBPDCL whose performance has been affected by an event of Force Majeure or Force Majeure Event; (b) **"Applicable Laws"** shall mean the laws and any other instruments having the force of law in India as they may be issued and in force from time to time; (c) **"Bid"** means the bid submitted by the Bidder(s) in response to the RFP and shall include the Technical Bid and the Financial Bid; (d) **"Bidder(s)"** means individual entity or consortium of entities bidding in response to the RFP; (e) **"Change Order"** shall have the meaning as ascribed thereto in Article 14 of this Contract; (f) **"Consortium Member"** Any member of the bidding consortium other than the SI-Lead; (g) **"Contract" or "SI Contract"** shall mean this Contract entered into between, Selected Bidder(represented by the SI-Lead acting for and on behalf of the consortium if the Selected Bidder is a consortium) and the NBPDCL for undertaking the Project and is the legally binding written agreement signed by the Parties and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices, Attachments, Annexures etc.). (h) **"Contract Period" or "Term of the Contract"** shall have the meaning as ascribed thereto in Article 2.1.2 of this Contract; (i) **"Contract Price"** shall have the meaning as ascribed thereto in Article 4.1 of this Contract; (j) **"Day"** means a calendar day unless indicated otherwise; (k) **"System Integrator" or "SI"**, means the responsible implementation agency named in **SCC** appointed by NBPDCL for the Supply, Develop, Installation, Commissioning, Implementation and Support for proposed System at the NBPDCL and its offices upon execution of the Contract subsequent to the Letter of Award referred to in **SCC**; (l) **"Exit Management Period"** shall mean the transition period encompassing the time from the date of termination of the Contract or end of the Contract Period until the date upon which all transition activities/ services are completed by the SI; (m) **"Force Majeure" or "Force Majeure Event"** shall have the meaning as ascribed thereto in Article 8 of this Section; (n) **"GCC"** means these General Conditions of Contract. (o) **"Goods"** means any good(s) supplied or to be supplied as a part of the Solution by the SI; (p) **"Independent Valuer"** shall mean a qualified valuer duly registered under Companies (Registered Valuers and Valuation) Rules, 2017 for Plant and Machinery and jointly appointed by the Parties in the event of termination prior to

	Installation Milestone; (q) **"Lender"** means the banks, financial institutions, multilateral funding agencies, non-banking financial companies registered with the Reserve Bank of India (RBI), insurance companies registered with the insurance Regulatory & Development Authority (IRDA), pension funds regulated by the Pension Fund Regulatory & Development Authority (PFRDA), mutual funds registered with Securities & Exchange Board of India (SEBI), etc., including their successors and assigns, who have agreed to provide the SI with the debt financing, and any successor banks or financial institutions to whom their interests may be transferred or assigned; (r) **"Month"** means a calendar month unless indicated otherwise; (s) **"Operational/Pilot Go Live"** shall have the meaning ascribed thereto in Clause 12.5 of Section 6; (t) **"Operational Period"** means the period from the Operational Go-Live till the end of the Contract Period; (u) **"Project or Implementation Project"** means the NBPDCL's proposed Implementation Project defined in recital clause in the Contract Form; (v) **"Project Implementation Schedule"** shall have the meaning ascribed thereto in Clause 5; (w) **"Request for Proposal" or "RFP"** means the Tender of which the number, name and details have been mentioned in **SCC**, including all its Volumes/ Sections/ Forms/ Annexures/ Appendices etc., for Appointment of SI (including all clarification/ addendum/ amendment/ corrigendum/ etc. issued from time to time); (x) **"Rupees" or "Rs." Or "INR" or "**₹" means Indian Rupees; (y) **"SCC"** means the Special Conditions of Contract by which the GCC may be amended or supplemented. (z) **"Service(s)" or "Related Service(s)"** means any service(s) performed or to be performed as a part of the Solution by the SI; (aa) **SLA Default Notice means** notice to be issued by the NBPDCL in the event SI fails meet any of the criteria specified in the SLA for cumulatively 3 (three) months in past 6 (six) months so as to entitling levy of maximum penalty for such criteria; (bb) **"Solution"** shall mean the FAR system implemented in its entirety including but not limited to the designing, financing, supply of hardware, software, transportation, installation, integration, testing, commissioning, operation, maintenance, training, and other services by the SI; (cc) **"Termination Payment"** shall have the meaning as ascribed thereto in Article 10 of GCC; (dd) **"NBPDCL"** shall have the same meaning as ascribed to it in the recital clause of the Form of Contract. 1.2 In the interpretation of this Contract, unless the context otherwise requires: 1.2.1. Unless otherwise specified a reference to an Article number is a reference to all of its sub-articles;

(b) Interpretation	1.2.2. Unless otherwise specified a reference to a clause, sub-clause or section is a reference to a clause, sub-clause or section of this Contract including any amendments or modifications to the same from time to time; 1.2.3. A word in the singular includes the plural and a word in the plural includes the singular; 1.2.4. A word importing a gender includes any other gender; 1.2.5. A reference to a person includes a partnership and a body corporate; 1.2.6. A reference to legislation includes legislation repealing, replacing, or amending that legislation; 1.2.7. Where a word or phrase is given a particular meaning, it includes the appropriate grammatical forms of that word or phrase which has a corresponding meaning; 1.2.8. In the event of an inconsistency between the terms of the RFP, Bid submitted by the Selected SI and the subsequent Contract, the terms of the Contract hereof shall prevail; 1.2.9. Whenever a material or article is specified or described by the name of a particular brand, manufacturer or trademark, the specific item shall be understood as establishing type, function, and quality desired. Products of other manufacturers may also be considered, provided sufficient information is furnished so as to enable NBPDCL to determine that the products are equivalent to those named. 1.2.10. No amendment or other variation of this Contract shall be valid unless it is in writing, is dated, expressly refers to this Contract, and is signed by a duly authorised representative of both NBPDCL and the SI thereto.
5. The Contract (a) Effectiveness and Term	2.1 **EFFECTIVENESS AND TERM** 2.1.1 This Contract shall come into force and effect on the date of execution of the Contract by the Parties; 5.1.2 Unless terminated earlier by either Party or extended by the NBPDCL in accordance with the terms of this Contract, this Contract shall continue in full force and effect until the earlier of (a) 6 (six) years from the date of execution of the Contract 5.1.3 The NBPDCL, at its own discretion, may extend the operation and maintenance period of the proposed system at terms mutually agreed upon with the SI.
6. Rights, Title and Interest to FAR System and Equipment	6.1 The ownership, rights and title to the proposed system and other equipment installed by SI for operation of the proposed system pursuant to this Contract shall vest with NBPDCL during the entire Term of Contract and post expiry of Contract.
7. Contract Price and Payment (a)Payment Mechanism	**7.1 PAYMENT MECHANISM** 4.1.1 The payment shall be made to the SI in Indian Rupees (INR) only 4.1.2 Except in case of Change Order in accordance with Article 13 of this Contract, the sum total of all payments made to the SI shall not exceed the Contract Price quoted in Article 4.1.1 4.1.3 The actual payment shall be net of any applicable liquidated damages and/or penalty due to noncompliance of SLAs by the SI.

	4.1.4 SI will raise and deliver the invoice and the Deliverables mentioned above to the NBPDCL for the payments as specified in payment section. SI shall also raise a supplementary invoice for the agreed amount towards software change requests/new requirements completed, in accordance with Article 13.1 of this Contract. NBPDCL will review the SI invoice raised by the SI and the Deliverables including the SLA performance report, in accordance with Article 7, within 5 (five) working days from the invoice and SLA performance report delivered by the SI. NBPDCL may dispute the amount payable and shall pay the undisputed amount of the payment due via direct debit facility (as specified in Article 4.1.7) from the 11th (Eleventh) working day of every month till the 10th (tenth) working day of succeeding month (i.e., 30 days after the approval of invoice). The disputed amount, (related to penalty imposed due to non-compliance of SLAs, and liquidated damages), shall be dealt as per Article 13 of this Contract. 4.1.5 In the event the SI fails to meet a particular performance criterion as mentioned under the Service Level Agreement (SLA) specified in Clause 7.7 of Section 6 for cumulatively 3 (three) months in past 6 (six) months, resulting in the maximum penalty for the performance criterion, NBPDCL may issue an SLA Default Notice to the SI directing it to take steps within 90 days to comply with the performance criterion specified in the SLA. 4.1.6 NBPDCL to release payments within 45 calendar days of the date of the invoice.
(b) Taxes and Duties	4.2 TAXES AND DUTIES 4.2.1 For Goods whether supplied from or outside India, the SI shall be entirely responsible for all taxes, duties, stamp duties, license fees, and other such levies imposed outside India. 4.2.2 Any statutory increase or decrease in the taxes and duties including GST and Cess as applicable or in the event of introduction of new tax/cess or cessation of existing tax/cess subsequent to the SI's offer on the goods and services explicitly mentioned in financial bid shall be dealt with in accordance with provisions of Change in Law. 4.2.3 Notwithstanding anything above or elsewhere in the Contract, in the event that the input tax credit of the GST charged by the SI is denied by the tax authorities to the NBPDCL for reasons attributable to the SI, the NBPDCL shall be entitled to recover such amount from the SI by way of adjustment from any of the subsequent invoices submitted by the SI to the NBPDCL.
8. Performance Security	8.1 The SI has furnished Performance Security in the form of an irrevocable bank guarantee valid up to a period of 6 (six) months beyond the end of the Contract Period or extended thereafter, for the amount indicated in SCC on the prescribed format. However, in case of delay in Installation Milestone, the validity of the initial Performance Security shall be extended by the period of such delay. In the event delay is solely due to acts and/ or omission of the NBPDCL cost of extending the validity of Performance Security shall be reimbursed to the SI by the NBPDCL. 8.2 Any payments shall be made to the SI only after receipt of the initial Performance Security by NBPDCL. 8.3 Upon Termination of the Contract due to NBPDCL Event of default or expiry of the Contract Period, the separate Performance Security shall be discharged by NBPDCL without any interest and returned to the SI not later than 14 (fourteen) working days following the date

	of Termination of the Contract. 8.4 Upon Termination of the Contract due to SI Event of default, the Performance Security shall be forfeited by NBPDCL. 8.5 In case of any delay by the SI in performing the activities of the scope of work with respect to the Project Implementation Schedule, then upon NBPDCL's request, the SI shall extend the validity of the separate Performance Security for the period for which the Contract is extended. In the event delay is solely due to acts and/ or omission of the NBPDCL cost of extending the validity of separate Performance Security shall be reimbursed to the SI by the NBPDCL.
9. Liquidated Damages, Penalty, and Incentive	9.1 Except in case of Force Majeure or where the delay in delivery of the Solution is caused due to any delay or default of NBPDCL if the delivery, site installation, integration, and operationalization of proposed System scope of work with related hardware, software and equipment is delayed as per timeline from the date of execution of the Contract the SI shall be liable to pay liquidated damages as per the rates specified in SCC.
10. SLAs and SLA Audit	7.1 The SI shall be liable to penalties in the event of non- compliance of Service Level Agreements, as specified in RFP; 7.2 A designated team/ person from NBPDCL may review the system generated SLA performance report of SI each month. The review/ audit report will form basis of any action relating to imposing penalty on or breach of Contract of the SI. 7.3 In case, there is no review/ audit report submitted within 10 (ten) working days of every month, it shall be deemed that all SLAs were met in the previous month.
8. Force Majeure (a) Force Majeure Event	8.1 A Force Majeure means any event or circumstance or combination of events and circumstances including those stated below that wholly or partly prevents or unavoidably delays an Affected Party in the performance of its obligations under this SI Contract, but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care or complied with prudent NBPDCL practices: a) **Natural Force Majeure Events:** act of God, including, but not limited to drought, fire, and explosion (to the extent originating from a source external to the site), earthquake, epidemic, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, or exceptionally adverse weather conditions, b) **Non-Natural Force Majeure Events:** i. Direct Non–Natural Force Majeure Events a. Nationalization or compulsory acquisition by any Governmental instrumentality of any material assets or rights of the SI; or b. the unlawful, unreasonable or discriminatory revocation of, or refusal to renew, any Consents, Clearances and Permits required by the SI to perform their obligations under the Contract or any unlawful, unreasonable or discriminatory refusal to grant any other Consents, Clearances and permits required for the development/ operation of the Project, provided that a Competent Court of Law declares the revocation or refusal to be unlawful, unreasonable and discriminatory and strikes the same down; or c. any other unlawful, unreasonable, or discriminatory action on the part of any Governmental instrumentality which is directed against the Project, provided that a competent Court of law declares the action to be unlawful, unreasonable, and discriminatory and strikes

	the same down. d. any partial or complete shut-down of the internet services in the Project area e. Shortage of labour, materials, or utilities where caused by circumstances that are themselves Force Majeure f. Restrictions imposed by central or state government that prevent or delay project execution ii) **Indirect Non - Natural Force Majeure Events:** 13.1 an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion, or politically motivated sabotage; 13.2 radioactive contamination or ionizing radiation originating from a source in India or resulting from any other Indirect Non-Natural Force Majeure Event mentioned above, excluding circumstances where the source or cause of contamination or radiation is brought or has been brought into or near the Site by the Affected Party or those employed or engaged by the Affected Party; or 13.3 Industry wide strikes and labour disturbances, having a nationwide impact in India. 8.2 **FORCE MAJEURE EXCLUSIONS**
(b) Force Majeure Exclusions	8.2.1 Force Majeure shall not include (i) any event or circumstance which is within the reasonable control of the Parties and (ii) the following conditions, except to the extent that they are consequences of an event of Force Majeure: i. Unavailability, late delivery, or changes in cost of the machinery, equipment, materials, spare parts etc. for the Project; ii. Delay in the performance of any Contractors or their agents; Non-performance resulting from normal wear and tear typically experienced in transmission materials and equipment; iii. Strikes or labour disturbance at the facilities of the Affected Party; iv. Insufficiency of finances or funds or the SI Contract becoming onerous to perform; and v. Non-performance caused by, or connected with, the Affected Party's: a. negligent or intentional acts, errors, or omissions; b. failure to comply with an Indian Law; or c. breach of, or default under this SI Contract or any Project documents.
(c) Notification of Force Majeure Event	8.3 **NOTIFICATION OF FORCE MAJEURE EVENT** 8.3.1 The Affected Party shall give notice to the other Party of any event of Force Majeure as soon as reasonably practicable, but not later than 7 (seven) days after the date on which such Party knew or should reasonably have known of the commencement of the event of Force Majeure. If an event of Force Majeure results in a breakdown of communications rendering it unreasonable to give notice within the applicable time limit specified herein, then the Party claiming Force Majeure shall give such notice as soon as reasonably practicable after reinstatement of communications, but not later than 1(one) day after such reinstatement. Provided that such notice shall be a pre-condition to the Affected Party's entitlement to claim relief under this SI Contract. Such notice shall include full particulars of the event of Force Majeure,

	its effects on the Party claiming relief and the remedial measures proposed. The Affected Party shall give the other Party regular reports on the progress of those remedial measures and such other information as the other Party may reasonably request about the Force Majeure. 8.3.2 The Affected Party shall give notice to the other Party of (i) the cessation of the relevant event of Force Majeure; and (ii) the cessation of the effects of such event of Force Majeure on the performance of its rights or obligations under this SI Contract, as soon as practicable after becoming aware of each of these cessations. 8.4 **DUTY TO PERFORM AND DUTY TO MITIGATE** 8.4.1 To the extent not prevented by a Force Majeure Event, the Affected Party shall continue to perform its obligations as provided in this SI Contract. The Affected Party shall use its reasonable efforts to mitigate the effect of any event of Force Majeure as soon as practicable. 8.5 **AVAILABLE RELIEF FOR A FORCE MAJEURE EVENT** 8.5.1 Subject to this Article 8 a. no Party shall be in breach of its obligations to the extent that the performance of its obligations was prevented, hindered, or delayed due to a Force Majeure Event; b. every Party shall be entitled to claim relief for a Force Majeure Event affecting its performance in relation to its obligations under this SI Contract; c. The SI shall be entitled to receive payment at rates to be mutually agreed between the NBPDCL and the SI for the additions to the scope of work due to an event of force majeure.
(d)Duty to Perform and Duty to Mitigate (e) Available Relief for a Force Majeure Event	
9. Intellectual Property	9.1 All Intellectual Property Rights in all material (including but not limited to all Source code, Object code, records, reports, designs, application configurations, data and written material, products, specifications, reports, drawings and other documents), which have been newly created and developed by the SI solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, shall be the property of the SI. The SI undertakes to disclose all such material, which have been newly created and developed by the SI solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, to the NBPDCL. The SI hereby grants to NBPDCL a, non-exclusive, non-transferable, irrevocable, royalty-free license to use all material disclosed to the NBPDCL under the Contract. Nothing contained herein shall be construed as transferring ownership of any Intellectual Property Right from the SI to the NBPDCL. 9.2 The SI shall ensure that while it uses any software, hardware, processes, document or material in the course of performing the Services, it does not infringe the Intellectual Property Rights of any person and the SI shall keep the NBPDCL indemnified against all costs, expenses and liabilities howsoever, arising out any illegal or unauthorized use (piracy) or in connection with any claim or proceedings relating to any breach or violation of any permission/license terms or infringement of any Intellectual Property Rights by the SI or its personnel during the course of performance of the Related Services. In case of any infringement by the SI, the SI shall have sole control of the defence and all related settlement negotiations

	9.3 Subject to Article 9, the SI shall retain exclusive ownership of all methods, concepts, algorithms, trade secrets, software documentation, other intellectual property or other information belonging to the SI that existed before the date of execution of the Contract.
10. Termination (a) SI Event of Default	10.1.1 SI Event of Default means any of the following events arising out of any acts or omission of SI, its representative, sub-contracts, employees and which have not occurred solely as a result of any breach of this Contract by the NBPDCL or due to Force Majeure, and where SI has failed to remedy these events within a period of 90 (ninety) days of issuance of a notice by NBPDCL requiring SI to remedy such event. a. SI has failed to procure and arrange requisite finances for the implementation of the Project; b. SI abandons the implementation of the Project or repudiates this Contract or otherwise takes any action, or evidences or conveys an intention not to be bound by the Contract; c. SI, in the judgment of NBPDCL has engaged in corrupt, fraudulent, collusive, or coercive practices, in competing for or in executing the Contract; or d. SI is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for SI or for the whole or material part of its assets that has a material bearing on its ability to implement the Project; e. SI has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that in the reasonable opinion of NBPDCL would adversely affect SI's ability to implement the Project; f. A resolution for winding up of SI is passed, or any petition for winding up of SI is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (Ninety) days of the date thereof or SI is ordered to be wound up by a court of competent jurisdiction; g. In the event SI fails to cure the default as indicated in the SLA Default Notice within the time period specified therein; Failure of SI to furnish Performance Security in accordance with the provisions of this Contract; h. Failure or inordinate delay by SI to provide Solution as per Contract; i. Any representation or warranty made by the SI during the term of the Contract is found to be false and/or misleading; j. Failure on account of SI to abide by Applicable Laws and regulations; k. The shareholding of the SI ceases to be in accordance with the provisions of this Contract; l. No person having System Integration (SI) experience in terms of the RFP remains a shareholder of the SI; m. In the event equipment installed or proposed to be installed by the SI is found to have any embedded malware/ trojans/ cyber threat; n. SI fails to comply with the local content requirement as specified in the Bid Submission; o. SI fails to comply with any of its material obligations under this Contract. p. In the event the Solution supplied do not meet the minimum specifications as per the Contract, and the same is not replaced/

	modified by the SI to meet the requirements within 14 (fourteen) working days of being informed by NBPDCL, or as mutually decided between NBPDCL and SI.
(b) NBPDCL Event of Default	10.2.1 NBPDCL Event of Default means any of the following events, unless such event has occurred as a consequence of the SI Event of Default or a Force Majeure event and where NBPDCL has failed to remedy these events within a period of 90 (ninety) days of issuance of a notice by SI requiring NBPDCL to remedy such event: a. NBPDCL is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for NBPDCL or for the whole or material part of its assets that has a material bearing on its ability to perform its obligations under this Contract; b. NBPDCL has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that in the reasonable opinion of SI would adversely affect NBPDCL's ability to perform its obligations under this Contract; c. A resolution for winding up of NBPDCL is passed, or any petition for winding up of NBPDCL is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within [90 (Ninety)] days of the date thereof or NBPDCL is ordered to be wound up by a court of competent jurisdiction; d. The breach by NBPDCL of its obligations under this Contract which has an adverse effect on the performance of SI's obligations under this Contract.
(c) Termination for SI Event for Default	10.3 **TERMINATION FOR SI EVENT FOR DEFAULT** 10.3.1 Without prejudice to any other right or remedy which NBPDCL may have in respect thereof under this Contract, upon the occurrence of SI Event of Default, NBPDCL shall be entitled to terminate this Contract in the manner provided in Article 10.3.2. 10.3.2 NBPDCL shall issue a Preliminary Notice to SI providing 90 (Ninety) Days, or such extended period as the NBPDCL may allow, to cure the underlying Event of Default. If SI fails to cure the underlying Event of Default within such period allowed, NBPDCL shall be entitled to terminate this Contract by issuing a termination notice to SI.
(d) Termination for NBPDCL Event of Default	10.4 **TERMINATION FOR NBPDCL EVENT FOR DEFAULT** 10.4.1 Without prejudice to any other right or remedy which SI may have in respect thereof under this Contract, upon the occurrence of a NBPDCL Event of Default, SI shall be entitled to terminate this Contract in the manner provided in Article 10.4.2 SI shall issue a Preliminary Notice to NBPDCL providing 90 (Ninety) Days, or such extended period as the SI may allow, to cure the underlying Event of Default. If NBPDCL fails to cure the underlying Event of Default within such period allowed, SI shall be entitled to terminate this Contract by issuing a termination notice to NBPDCL.
(e) Consequences of Termination	10.5 **CONSEQUENCES OF TERMINATION** Upon Termination of the Contract, the SI shall:

	10.5.1 Notwithstanding anything to the contrary contained in this Contract, any termination of this Contract pursuant to its term shall be without prejudice to accrued rights of any Party, including its right to claim and recover damages and other rights and remedies which it may have in law or contract. All accrued rights and obligations of any of the Parties under this Contract, shall survive the termination of this Contract to the extent such survival is necessary for giving effect to such rights and obligations. 10.5.2 Following issue of the Termination Notice by NBPDCL or SI, NBPDCL takes possession and control of SI's control room, related systems of the project and call center, and the exclusivity granted to SI under Article 4 will come to an end. 10.5.3 Upon termination of this Contract by NBPDCL or SI on account of SI's Event of Default (in accordance with Article 10.1.1, or termination of this Contract on account of NBPDCL's event of default (in accordance with Article 10.2.1), SI shall be entitled to a termination payment subject to proper transfer of the installed proposed System as per scope of work, as agreed upon mutually. Upon termination of this Contract by NBPDCL or SI on account of SI's Event of Default (in accordance with Article 10.1.1), or termination of this Contract on account of NBPDCL's event of default (in accordance with Article 10.2.1), SI shall be entitled to raise a supplementary invoice for an amount which is equal to the termination payment. The Supplementary invoice shall be paid separately by the NBPDCL within 30 (thirty) days from the date of such invoice., as agreed mutually upon, basis the following criterion: a) in case termination of this contract is on account of SI's event of default: Termination payment to SI after installation Milestone has been declared shall be percentage, specified in SCC, of the termination payment value as determined in terms of this contract. b) In case of termination of this contract is on account of NBPDCL's event of Default: Termination payment to SI after installation Milestone has been declared shall be percentage specified in SCC, of the termination value as determined in terms of this contract. c) In case of termination of this contract is prior to Installation Milestone the Termination payment shall be equal to: I. The percentage, specified in SCC, of the value of the assets proposed to be handed over to the NBPDCL as certified by an Independent valuer in the event termination is on account of SI event of default-and II. The percentage, specified in SCC, of the asset values shall be paid to the SI in the event termination is on account of NBPDCL event of default For the avoidance of doubt, it is clarified that in the vent of lump sum payments in terms of Article 4 has been made then such payment shall be reduced from the amount determined in accordance with this article 10.5.3(c). 10.5.4 The Termination payment value would be calculated basis the following mechanism: a. The present value of the receivables for the proposed system and scope of work installed at NBPDCL offices shall be calculated by multiplying the outstanding payments towards the proposed system integrated and operationalized as on the date of termination and discounting the same as on date of termination at the percentage specified in SCC ("Present Value").

(f) Exit Management	b. All amounts due, but not paid by the NBPDCL, including the aggregated amount due to be paid including amount due to be paid towards supplementary invoice, but not paid or recovered from the NBPDCL, for the proposed system operations and maintenance as defined in the RFP by the SI, shall be calculated and factored in to arrive at the net outstanding receivables of the SI ("Outstanding Receivables"); c. All amounts due, but not paid by the SI, including the aggregated applicable liquidated damages and/(or) penalties due to non-compliance of SLAs by the SI, but not paid or recovered from the SI, for the proposed system operations and maintenance as defined in the RFP by the SI, shall be calculated and factored in to arrive at the net outstanding payables by the SI ("Outstanding Payables"); d. Termination Payment Value shall be equal to the sum of Net Present Value and Outstanding Receivables as per Article 10.5.4.(a) and (b); reduced by Outstanding Payables as per Article 10.5.4.(c) and the sum of insurance proceeds received by the SI for the proposed system, (if any). 10.5.5 Upon Termination of the Contract or expiry of the contract period, the SI shall prepare and present a detailed Exit Management Plan within 5 (five) working days of termination notice receipt to the NBPDCL ("Exit Management Plan") in accordance with Article 10.6. 10.5.6 The NBPDCL or its nominated agency will review the Exit Management plan. If approved, SI shall start working on the same immediately. If the plan is rejected, SI shall prepare alternate plan within 2 (two) working days. If the second plan is also rejected, NBPDCL will provide a plan for SI, and it should be adhered by in totality. 10.5.7 The Exit Management Plan should cover at least the following: a. Execute all documents that may be necessary to effectively transfer the ownership and title, including OEM warranties in respect of all equipment; b. Handover all developed codes, related documentation, and other Configurable Items if any in his possession; c. Handover the list of all IT Assets, passwords at all locations to NBPDCL. 10.5.8 The SI and the Authorized personnel from NBPDCL will sign a completion certificate at the end of successful completion (all points tracked to closure) of the Exit Management Plan. 10.6 **Exit Management** 10.6.1 Exit Management In case the Contract with the NBPDCL ends or is terminated before the expiry date of Contracts, the Parties shall agree at that time whether, and if so during what period, the provisions of this Exit Management Plan shall apply. The Parties shall ensure that their respective associated entities carry out their respective obligations set out in this Exit Management Plan. The exit management shall be done in such a manner that operations should continue without any restriction on access/usage of any kind of functionality. At the end of the Contract period, SI shall provide necessary handholding and transition support to the NBPDCL or its agency for maintaining the system post the Contract with the SI. This includes (but not limited to): Conducting detailed walkthrough and demonstrations for the proposed Solution;

	a. Handing over of proposed Solution, NBPDCL's data and all other relevant documentation including updated detailed bill of quantities for materials and services provided under the Contract; b. Addressing the queries/clarifications of the designated staff / new agency with respect to the working / performance levels of the infrastructure; c. Conducting training sessions; d. Knowledge Transfer; f. Any other activity, over and above these, as may be deemed necessary to meet the service levels and requirements specified in the RFP. 10.6.2 **Transfer of Assets / proposed Solutions** a. NBPDCL shall be entitled to serve notice in writing on the SI at any time during the Exit Management Period requiring the SI and/or its sub-contractor to provide the NBPDCL with a complete and up to date list of the Assets and System configurations, License details, Customized Code within 30 (thirty) days of such notice. NBPDCL shall also be entitled to serve notice in writing on the SI at any time prior to the end of the Exit Management Period requiring the SI to transfer the overall control to the NBPDCL or its nominated agencies in accordance with Article 10. b. In case of contract being terminated by NBPDCL, NBPDCL reserves the right to ask SI to continue running the project operations for a period of 3 months after termination orders are issued. In case of contract being terminated by SI, NBPDCL reserves the right to ask the SI to continue running the project operations for a period of 6 (six) months after termination notice is served by SI. In such case, payments during the Exit Management Period shall be made in accordance with the Article 4.1 and 10.5 (as the case may be). c. Upon service of a notice under this Plan, the following provisions shall apply: i. All title to the assets as per the updated detailed bill of quantities for materials and services provided under the Contract shall be transferred to NBPDCL, on or before the last day of the Exit Management Period. ii. Payment to the outgoing SI shall be made to the tune of last set of completed Services / deliverables, subject to SLA requirements. 10.6.3 **Cooperation and provision of information** During the Exit Management Period: a. SI will facilitate / allow the NBPDCL or its nominated agency access to information reasonably required to define the then current mode of operation associated with the provision of the services to enable the NBPDCL to assess the existing services being delivered; b. Promptly on reasonable request by the NBPDCL, the SI shall provide access to, and copies of all information held or controlled by them which they have prepared or maintained in accordance with this Contract relating to any material aspect of the services (whether provided by the SI or sub-contractors appointed by the SI) to the NBPDCL or its nominated agency. Such information shall include details pertaining to the list of assets as per updated detailed bill of quantities for materials and services provided under the Contract, services rendered and other performance data. SI shall permit the NBPDCL or its nominated agencies to have reasonable access to its employees and facilities to understand the methods of delivery of the services employed by the SI

	and to assist appropriate knowledge transfer; and c. In the event of Termination prior to Installation Milestone, SI and NBPDCL shall jointly appoint an Independent Valuer to certify the value of assets, as per the updated detailed bill of quantities for materials and services provided under the Contract, proposed to be handed over to the NBPDCL upon termination. The cost of Independent Valuer shall be paid by the SI. 10.6.4 **Confidential information, security, and data** SI shall promptly on the commencement of the Exit Management Period supply to the NBPDCL or its nominated agency the following: a. information relating to the list of assets as per the updated detailed bill of quantities for materials and services provided under the Contract, current Services rendered and consumer and performance data relating to the performance of sub-contractors in relation to the Services; b. documentation relating to the Project's Intellectual Property Rights; c. documentation relating to sub-contractors; d. all current and updated data as is reasonably required for purposes of NBPDCL or its nominated agencies transitioning the services in a readily available format; e. all other information (including but not limited to documents, records, and agreements) relating to the services reasonably necessary to enable NBPDCL or its nominated agencies, to carry out due diligence in order to transition the provision of the Services to NBPDCL or its nominated agencies, (as the case may be). 10.6.5 **Transfer of certain agreements** On request by the NBPDCL or its nominated agency, the SI shall affect such assignments, licenses and sub-licenses as NBPDCL may require in favor of the NBPDCL or its nominated agency reasonably necessary for the carrying out of replacement services. These agreements may include equipment lease, maintenance, or service provision agreement between selected SI and third-party lessors, service providers, and any other agreements related to the Services. 10.6.6 **General obligations of the SI during exit management period** a. The SI shall provide all such information as may reasonably be necessary to effect as seamless a handover as practicable in the circumstances to the NBPDCL or its nominated agency and which the SI has in its possession or control at any time during the Exit Management Period. b. For the purposes of this Schedule, anything in the possession or control of the SI or associated entity, or sub-contractors is deemed to be in the possession or control of the SI. c. The SI shall commit adequate resources to comply with its obligations under this Exit Management Schedule. 10.6.7 **Exit management process** The SI shall prepare an Exit Management Plan for transfer of operations to the NBPDCL or its nominated agency, in the event of termination or expiry of the contract with the NBPDCL, without affecting services to stakeholders adversely. SI shall get this process approved by NBPDCL. The Plan shall include, but not be limited to, the following- a. A detailed program of the transfer process including details of the means to be used to ensure continuing provision of the Services throughout the transfer process or until the cessation of the Services and of the management structure to be used during the transfer; b. Plans for the communication with such of the SI's subcontractors,

	staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on the NBPDCL's project operations and project Services to other stakeholders as a result of undertaking the transfer; c. Plans for provision of contingent support to NBPDCL or its nominated Agency for a reasonable period after transfer. d. The Exit Management Plan including all updates shall be presented by the SI to and approved by the NBPDCL or its nominated agencies. e. During the Exit Management Period, the SI shall use its best efforts to deliver the services. f. Payments during the Exit Management Period shall be made in accordance with the Articles 4.1 and 10.5 (as the case may be) The Exit Management plan shall be furnished in writing to the NBPDCL or its nominated agencies within 90(ninety) days from date of execution this SI contract The SI shall re-draft the Exit Management Plan annually thereafter to ensure that it is kept relevant and up to date. The updated plan shall be furnished in writing to the NBPDCL or its nominated agencies within 15 days from the end of such period.
11. Liability/ Indemnity	11.1 The SI hereby agrees to indemnify NBPDCL, for all conditions and situations mentioned in this Article, in a form and manner acceptable to NBPDCL. The SI agrees to indemnify NBPDCL and its officers, servants, agents ("NBPDCL Indemnified Persons") from and against any costs, loss, damages, expense, claims including those from third parties or liabilities of any kind howsoever suffered, arising, or incurred inter alia during and after the Contract Period out of: any negligence or wrongful act or omission by the SI or its agents or employees or any third Party associated with SI in connection with or incidental to this Contract; or any infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied Solution or any part thereof. 11.2 The SI shall also indemnify NBPDCL against any privilege, claim or assertion made by third party with respect to right or interest in, ownership, mortgage or disposal of any asset, property, movable or immovable as mentioned in any Intellectual Property Rights, licenses and permits. 11.3 Without limiting the generality of the provisions of the Article 11.1 and 11.2, the SI shall fully indemnify, hold harmless and defend NBPDCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NBPDCL Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to the Solution, information, design or process supplied or used by the SI in performing the SI's obligations or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the SI shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Solution or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the SI shall promptly make every reasonable effort to secure for the NBPDCL a license, at no cost to NBPDCL, authorizing continued use of the infringing work. If the SI is unable to secure such license within a reasonable time, the SI shall, at its own

	expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof.
(a) Survival on Termination (b) Defense of Claim	11.4 **SURVIVAL ON TERMINATION** 11.4.1 The provisions of this Article 11 shall survive the Termination of the Contract 11.5 **DEFENCE OF CLAIMS** 11.5.1 If any proceedings are brought or any claim is made against the NBPDCL arising out of the matters referred to in Article 11, the NBPDCL shall promptly give the SI a notice thereof, and the SI may at its own expense and in the NBPDCL's, name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claims. 11.5.2 If the SI fails to notify the NBPDCL within 28 (twenty-eight) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the NBPDCL shall be free to conduct the same on its own behalf. 11.5.3 The NBPDCL shall, at the SI's request, afford all available assistance to the SI in conducting such proceedings or claim, and shall be reimbursed by the SI for all reasonable expenses incurred in so doing.
(c) Limitation of Liability	11.6 **LIMITATION OF LIABILITY** 11.6.1 Except in cases of gross negligence, fraud, or willful misconduct: Neither Party shall be liable to the other Party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the SI to pay liquidated damages to the NBPDCL; and The aggregate liability of the SI to the NBPDCL, whether under the Contract, in tort, or otherwise, shall not exceed the Contract Price. Provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the SI to indemnify the NBPDCL with respect to infringement of any Intellectual Property Rights.
12. Governing Laws and Settlement of Disputes	12.1 The NBPDCL and the SI shall make every effort to resolve amicably any disagreement or dispute arising between them under or in connection with the Contract, by direct informal negotiation. 12.2 If the NBPDCL and the SI fail to resolve such a dispute (the date of commencement of the dispute shall be taken from the date when this Article reference is quoted by either Party in a formal communication clearly mentioning existence of dispute or as mutually agreed) or difference by mutual consultation within 28 (twenty-eight) days from the commencement of such consultation, either Party may require that the dispute be referred for resolution to the formal mechanisms specified in this Article.12. 12.3 All disputes or differences in respect of which the decision, if any, has not become final or binding as aforesaid shall be settled by arbitration in the manner hereinafter provided. The arbitration shall be conducted by three arbitrators, one arbitrator each to be nominated by the SI and the NBPDCL and the third to be appointed as the presiding arbitrator by both the arbitrators in accordance with the Arbitration and Conciliation Act,1996. If either of the parties fails to appoint its nominee

	arbitrator within 60 (sixty) days after receipt of a notice from the other party invoking the arbitration, the nominee arbitrator appointed by one of the parties invoking the arbitration clause shall act as the sole arbitrator to conduct the arbitration under the Arbitration and Conciliation Act 1996, as amended from time to time. 12.4 The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification thereof. The seat of arbitration shall be as specified in SCC. 12.5 The Contract shall be governed by and interpreted in accordance with laws of India. The Courts, specified in SCC, shall have exclusive jurisdiction in all matters arising under this Contract. 12.6 Parties to Perform Obligations: Notwithstanding the existence of any Dispute and difference referred to the Arbitration Tribunal as provided in Article 12.3 and save as the Arbitration Tribunal may otherwise direct by a final or interim order, the Parties hereto shall continue to perform their respective obligations (which are not in dispute) under this Contract.
13. Change Order (b) Change Request/ Change Order for New/Enhancements to Software Applications	13.1 Change Request/Change Order for New/Enhancements to proposed system / Software Applications Another form of change may arise when the NBPDCL discovers the need to have enhancements in the delivered software applications and/or entirely new functional requirements in the applications ("New Requirements"), subject to Article 13.1.5 of this Contract. 13.1.1 At any point in time the NBPDCL may raise a Change Request to include New Requirements in the proposed system application. This Change Request shall include the following: Identification and documentation of the need for the change Functional details of the change Information related to initiator, initiation date and Priority of the change 13.1.2 The SI will analyze and evaluate the Change Request to come up with the estimate of the effort involved in terms of man-days required (in respective skill areas) and time schedule as per agreed priority and document the same. NBPDCL will use the estimated effort of the new requirements made by the SI and together with the quoted man-month rates arrive at a cost estimate. For all technical resources, the quoted man-month rate shall be used. Efforts of support staff shall not be taken into consideration for this purpose. 13.1.3 Based on the agreed cost estimate, the NBPDCL shall raise a "Change Order". The SI shall undertake the development of the New Requirements only after securing express consent of the NBPDCL. If the consent of NBPDCL is not received, then the change will not be carried out. The change will be implemented in accordance with the agreed cost, effort, and schedule by the SI and the change will be verified by the NBPDCL on completion of implementation. 13.1.4 If the Change Order for New Requirements agreed to herein causes an increase or decrease in cost of, or the time required for, firm's performance of any provisions under the Agreement, equitable adjustments shall be made in the Agreement Price or Delivery Schedule, or both, and the Agreement shall accordingly be amended. Any claims by firm for adjustment under this must be asserted within 30 (thirty) days from the date of SI receiving the change order. 13.1.5 The following categories of Change Requests shall not be treated as "New Requirements" and the SI is expected to deliver these Change

	Requests as per agreed schedule without any commercial implications. All bug fixes All upgrades of the licensed platforms Changes made to report templates New reports not based on existing information Integration with national/state level systems like NFMS etc. Minor changes not requiring more than 10 man-days Aspects already covered under existing scope of work provided in this Contract 13.1.6 In the case of New Requirements in Software Applications, NBPDCL may at any time, by a written Change Request seek changes to be implemented within the general scope of the Agreement provided this does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Solution and the technical compatibility of the change envisaged with the nature of the Solution as specified in the Contract. The Change Request/New Requirement management procedure will follow the following steps: - Identification and documentation of the need for the Change Request/New Requirement - The information related to initiator, initiation date and details of Change Request/New Requirement and priority of the change/New Requirement will be documented by the NBPDCL. Analysis and evaluation of the Change Request/New Requirement - Impact of the change/ new requirement in terms of the estimated effort, changed schedule, cost and the items impacted will be analyzed and documented by the SI. Approval or disapproval of the Change Request/New Requirement – the NBPDCL will approve or disapprove the Change Request/New Requirements. Once approved the Change Request is converted into a Change Order which is subject to the conditions laid down in Article 13.1.5. Implementation of the change/New Requirement – The Change Order/New Requirement will be implemented in accordance with the agreed cost, effort, and schedule by the SI. Verification of the change/New Requirement - The Change Order/New Requirement will be verified by the NBPDCL on implementation of the change request.
14. Miscellaneous (a) Waiver	14.1 **WAIVER** 14.1.1 Subject to Article 14.1.2, no relaxation, forbearance, delay, or indulgence by either Party in enforcing any of the terms and conditions of the Contract or the granting of time by either Party to the other shall prejudice, affect, or restrict the rights of that Party under the Contract. Neither shall any waiver by either Party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract. 14.1.2 The waiver by either Party of a breach or default of any of the provisions of this Contract by the other Party shall not be interpreted as: A waiver of any succeeding breach of the same or other provision, nor shall any delay or omission on the part of the other Party to exercise; or A way to avail itself of any right, power, or privilege that it has or may have under this contract to operate as waiver of any breach or default by the other Party. Any waiver of a Party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of

	the Party granting such waiver, and must specify the right and the extent to which it is being waived.
(b) Extension of Time	14.2 **EXTENSIONS OF TIME** 14.2.1 If at any time during performance of the Contract, the SI or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to this Contract, the SI shall promptly notify the NBPDCL in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the SI's notice, the NBPDCL shall evaluate the situation and may at its discretion extend the SI's time for performance, in which case the extension shall be ratified by the Parties by amendment of the Contract. 14.2.2 Except in case of Force Majeure, as provided in Article 8 or where the delay in delivery of the Goods or completion of Related Services is caused due to any delay or default of the NBPDCL, any extension granted under Article 14.2.1 shall not absolve the SI from its liability to the pay of liquidated damages pursuant to Article 6. Time will be the essence of the Contract and no variation shall be permitted in the delivery time/delivery schedule mentioned in the order unless agreed by the NBPDCL. The SI is expected to implement the systems for the project area as per the schedule indicated in the Contract.
(c) Insurance	14.3 **INSURANCE** 14.3.1 The Goods supplied under the Contract shall be fully insured by the SI against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery. 14.3.2 The SI shall furnish to the NBPDCL copies of certificates and policies of the Insurances as soon as they are affected and renewed by or on behalf of the SI from time to time in terms of Article 14.
(d) Transportation	14.4 **TRANSPORTATION** 14.4.1 The SI shall at its own risk and expense transport all the SI's equipment to the site by the mode of transport that the SI judges most suitable under all the circumstances. 14.4.2 Unless otherwise provided in the Contract, the SI shall be entitled to select any safe mode of transport operated by any person to carry the SI's equipment. 14.4.3 The SI shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the SI's equipment to the Project site. NBPDCL shall use its best endeavors in a timely and expeditious manner to assist the SI in obtaining such approvals, if requested by the SI.
15.Confidential Information	15.1 Both SI and the NBPDCL undertake to each other to keep confidential all information (written as well as oral) concerning the business and affairs of the other, which has been obtained or received as a result of the discussions leading up to or the entering of the Contract. 15.2 After the entering of the Contract, the NBPDCL and the SI shall keep confidential and shall not, without the written consent of the other Party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other Party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the SI may furnish to its subcontractors such documents, data, and other information it receives

	from the NBPDCL to the extent required for the subcontractors to perform its work under the Contract, in which event the SI shall obtain from such subcontractors an undertaking of confidentiality similar to that imposed on the SI under this Article 15. 15.3 The NBPDCL shall not use such documents, data, and other information received from the SI for any purposes unrelated to the Contract. Similarly, the SI shall not use such documents, data, and other information received from the NBPDCL for any purpose other than the design, procurement, or other work and services required for the performance of the Contract. 15.3.1 The obligation of a Party under Articles 15.1 and 15.2 above, however, shall not apply to information that: NBPDCL or SI need to share with the institutions participating in the financing of the Contract; (i) information which, at the time of disclosure to the receiving party was already in the public domain; (ii)information which, after disclosure to the receiving party becomes publicly available without any breach of this confidentiality undertaking; (iii)information which was in the possession of the receiving party prior to its disclosure, as evidenced by the records of the receiving party; (iv)information that is received by the receiving party from a third party, who to the knowledge of the receiving party after having conducted reasonable enquiry into the authority of such third party to possess and divulge the same, is not in breach of its confidentiality obligations. and (v)information that is required to be disclosed by the receiving party (and solely to the extent required to be disclosed) pursuant to the requirements of applicable laws, or order of a judicial, regulatory or administrative authority or the guidelines of regulatory/administrative authority. . 15.3.2 The above provisions of this Article 15 shall not in any way modify any undertaking of confidentiality given by either of the Parties hereto prior to the date of execution of the Contract in respect of the Supply or any part thereof. 15.3.3 Each of the Parties to this Contract, undertakes to the other to take all such steps as shall from time to time be necessary to ensure compliance with the provisions of the above Articles by its employees, agents, and sub-contractors. 15.3.4 The provisions of this Article 15 survive completion or termination, for whatever reason, of the Contract.
16. Subcontracting	16.1 The SI shall be permitted to appoint subcontractor(s) so as to meet its obligations under the Contract with the NBPDCL, with intimation to the NBPDCL, provided they ensure that any person engaged by SI are not blacklisted by any Government organization or regulatory agencies or Government Undertaking as on date of intimation of the NBPDCL (as defined in eligibility this RFP). 16.2 SI shall engage only such sub-contractor(s) who satisfy the eligibility requirement in terms of applicable laws including the guidelines issued vide Order No. F/No.6/18/2019-PPD by Ministry of Finance, Department of Expenditure, Public Procurement Division dated 23 July 2020 and as amended from time to time.
17. Warranty	17.1 The SI warrants that all the Goods that would be used as part of Solution would be new, unused, and of the most recent or current

	models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract. 17.2 The SI further warrants that the Goods shall be free from defects arising from any act or omission of the SI or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination. 17.3 The warranty of the proposed system shall remain valid till expiry of the Contract Period. 17.4 The SI shall be responsible for comprehensive maintenance of all the equipment and systems supplied & installed under this Contract during the Operational Period. There may be some variation during detailed engineering. SI will have to make their own assessment of the systems and deploy manpower accordingly. However, it is to be ensured that specified manpower of requisite qualification is deployed. 17.5 The maintenance of the system supplied & installed by the SI shall be comprehensive. The SI shall be responsible for providing all the spares as may be required. The spares shall be maintained by the SI at no extra cost to the NBPDCL.
18. Change in Laws and Regulations	18.1 Unless otherwise specified in the Contract, if after the Bid Submission Deadline indicated in SCC, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in India where the sites is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the project delivery, then such delivery shall be correspondingly amended, to the extent that the SI has thereby been affected in the performance of any of its obligations under the Contract. 18.2 The Party affected by a change in law shall give notice giving details of the likely impact of the change in law. The Parties shall negotiate in good faith to place the affected party at the same economic position as if no change in law had occurred. Provided only such change in law events which have financial impact beyond a threshold specified in SCC, are to be considered for the purposes of grant of relief to the affected Party. 18.3 Notification of Change in Law: If the SI is affected by a Change in Law in accordance with Article 18.1 and wishes to claim relief for such Change in Law under this Article 18, it shall give notice to the NBPDCL of such Change in Law as soon as reasonably practicable after becoming aware of the same. Any notice served pursuant to Articles 18 shall provide, amongst other things, precise details of the Change in Law and its effect on the SI.
19. Severability	19.1 If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract or the Contract as a whole and the remaining provisions of the Contract shall remain in full force and effect.
20. Language	20.1 The official language of the Contract is English. Contract as well as all correspondence and documents relating to the Contract exchanged by the SI and NBPDCL, shall be written in English. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, the English translation shall govern. 20.2 The SI shall bear all costs of translation to English and all risks of the accuracy of such translation. The SI shall be bound to the English translation and what has been stated therein.

21. Assignment	21.1 The SI shall not assign, in whole or in part, their obligations under this Contract without prior permission of the NBPDCL. 21.2 However, in case of default by the SI in debt repayments or in the event of default by the SI as per Clause 11, the NBPDCL may, on an application from the Lenders, assign the work under the SI contract to the nominee of the Lenders subject to the fulfilment of the qualification requirements and provisions of the Contract.
22. Entire Agreement	22.1 This Contract along with all its annexures, schedule and the provisions of the RFP reflect the entire understanding of the Parties. 22.2 No variation or modification of the terms of the Contract shall be made except by written amendment signed by the Parties.
23. Disclaimer	23.1 NBPDCL reserves the right to share, with any consultant of its choosing, any resultant proposals in order to secure expert opinion. 23.2 NBPDCL reserves the right to accept any proposal deemed to be in the best interest of the NBPDCL.
24. Public Disclosure	24.1 All materials provided to NBPDCL by the SI may be disclosed in accordance with the provisions of applicable law including but not limited to the Right to Information Act, 2005 (RTI), etc. 24.2 The SI's team shall not make or permit to be made a public announcement or media release about any aspect of this Contract unless NBPDCL first gives the SI its written consent.
25. Adherence to Safety Procedures, Rules, Regulations and Restriction	25.1 SI shall comply with the provision of all laws including labor laws, rules, regulations, and notifications issued there under from time to time. All safety and labor laws enforced by statutory agencies and by NBPDCL shall be applicable in the performance of this Contract and SI's team shall abide by these laws. 25.2 Access to the NBPDCL's locations shall be strictly restricted. No access to any person except the designated personnel belonging to the SI who are genuinely required for execution of work or for carrying out project related services/management/maintenance who have been explicitly authorized by NBPDCL shall be allowed entry to the NBPDCL's locations. Even if allowed, access shall be restricted to the pertaining equipment of NBPDCL only. The SI shall maintain a log of all such activities. 25.3 The SI shall take all measures necessary or proper to protect the personnel, work and facilities and shall observe all reasonable safety rules and instructions. SI's team shall adhere to all security requirement/regulations of NBPDCL during the execution of the work. NBPDCL's employees and associates also shall comply with safety procedures/policy. 25.4 The SI shall report as soon as possible any evidence, which may indicate or is likely to lead to an abnormal or dangerous situation and shall take all necessary emergency control steps to avoid such abnormal situations. 25.5 NBPDCL will be indemnified for all the situations mentioned in this Article in the similar way as defined in Article 11.
26. Non- Solicitation of Staff	26.1 The Articles of this contract, which by nature are intended to survive termination of this Contract, shall remain in effect after such termination
27. Survival	27.1 The Articles of this contract, which by nature are intended to survive termination of this Contract, shall remain in effect after such termination.
28. Notices	28.1 All notices to be given under this Contract shall be in writing and in the English language.

	28.2 A Notice shall be effective when delivered or on the notice effective date, whichever is later. 29.3 All notices must be delivered personally, by registered or certified mail or by facsimile transmission or email. 28.4 All notices shall be effective: If sent by facsimile transmission or email, when sent (on receipt of confirmation of the correct number or address); If sent by registered post or certified mail, within 5 (five) days of dispatch; If delivered personally, on receipt by intended recipient, provided that all notices given by facsimile transmission shall be confirmed by registered or certified mail. 28.5 Each party shall forthwith notify the other party of any change in its address to which notices under this Contract are to be delivered, mailed or facsimiled.

10.2 Special Conditions of Contract

GCC Article/ Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
5.1	[5] % of the Contract Price
6.0	If SI fails to attain Completion of the Facilities or any part thereof within the Time for Completion or any extension thereof under GCC Clause 6, the SI shall pay to the Employer liquidated damages at 0.15% for each week or part thereof, of the value of unexecuted works. The aggregate amount of such liquidated damages shall in no event exceed 5% of the value of unexecuted works (inclusive of GST). Once the "Maximum" is reached, the NBPDCL may consider termination of the Contract, pursuant to GCC Clause 10.0.
10.5.3 (a)	[60] %
10.5.3 (b)	[100] %
10.5.3 (c) i	[60] %
10.5.3 (c) ii	[100] %
10.5.4 (a)	[10.5] %
12.4	Patna, Bihar, India
12.5	Patna, Bihar, India
13.1	[-20%] to [+30%]
18.1	As per NIT Notice

18.2	[0.2 % of the Contract Price]

11. Bidding Forms- Technical Proposal

11.1 Form-1 : Format of Consortium Agreement to be entered amongst all Members of a Bidding Consortium

[To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution, duly signed on each page.]

FORM OF CONSORTIUM AGREEMENT BETWEEN

M/s…....., AND M/s. ..... for bidding for Tender No. [Tender Details] (the "RFP") dated [Date] as per its RFP Clause

1. **THIS Consortium Agreement** (hereinafter referred to as "Agreement") executed on this ..... *[date]* day of ..... *[month]*, ... *[year]* between
2. M/s. ....., a company incorporated under the laws of ..... and having its Registered Office at ....., (hereinafter called "**Party 1**," or "**Lead Consortium Member**" which expression shall include its successors, executors and permitted assigns);
3. M/s. ....., a company incorporated under the laws of ..... and having its Registered Office at ....., (hereinafter called "**Party 2**," which expression shall include its successors, executors and permitted assigns);

[The Bidding Consortium should list the name, address of its registered office and other details of all the Consortium Members above.]

WHEREAS the Parties above named are entering into this Consortium Agreement for the purpose of submitting the Bid in response to the RFP and in the event of selection as Selected Bidder to comply with the requirements as specified in the RFP and ensure execution of the System Integrator Contract as may be required to be entered into with NBPDCL.

Party 1, Party 2 are hereinafter collectively referred to as the "Parties" and individually as a "Party.

WHEREAS the RFP stipulates that the Bidders applying as a Bidding Consortium shall submit a legally enforceable Consortium Agreement in a format specified in the RFP, whereby each Consortium Member undertakes to be liable for its Roles and Responsibilities, provide necessary guarantees and pay required fees as required as per the provisions of the RFP, as specified herein.

WHEREAS any capitalized term in this Agreement shall have the meaning ascribed to such term in the RFP document.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

In consideration of the above premises and agreement all the Parties in this Consortium do hereby mutually agree as follows:

1. In consideration of the selection of the Consortium as the Bidding Consortium by NBPDCL, we the Members of the Consortium and Parties to the Consortium Agreement do hereby unequivocally agree that M/s..... *[Insert name of the Lead Member]*, shall act as the Lead Member as defined in the RFP for self and agent for and on behalf of M/s. ..... *[the names of all the other Members of the Consortium to be filled in here]*.

2. The Lead Consortium Member is hereby authorized by the Members of Consortium and Parties to the Consortium Agreement to bind the Consortium and receive instructions for and on behalf of all Members. The Roles and Responsibilities of all other members shall be as per RFP to this Agreement.

3. Both Consortium Members undertake to be jointly and severally liable for the performance of its part of the Roles and Responsibilities without in any way limiting the scope of collective liability envisaged in this Agreement in order to meet the requirements and obligations of the RFP. The SI-Lead shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all their respective Roles and Responsibilities.

4. In case of any breach of any of the commitment as specified under this Agreement by any of the Consortium Members, the Lead Consortium Member of the Consortium shall be liable to meet the obligations as defined under the RFP.

5. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and obligations thereto shall not in any way be a limitation of responsibility of the Lead Member under these presents.

6. The Members expressly agree to adhere to all the terms and conditions of the RFP and confirm that we don't have any Conflict of Interest (as defined in the RFP).

7. This Consortium Agreement shall be construed and interpreted in accordance with the Laws of India and Courts at [Place] shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
8. It is hereby agreed that the Lead Consortium Member shall furnish the Bid Security, as stipulated in the RFP, on behalf of the Bidding Consortium.

9. It is hereby agreed that in case of selection of Bidding Consortium as the System Integrator, the Parties to this Consortium Agreement do hereby agree that they shall furnish the Performance Security and other commitments to NBPDCL as stipulated in the RFP and System Integrator Contract. The Lead Member shall be responsible for ensuring the submission of the Performance Security and other commitments on behalf of all the Consortium Members.

10. It is further expressly agreed that the Consortium Agreement shall be irrevocable and, for the System Integrator, shall remain valid over the term of the Project, unless expressly agreed to the contrary by NBPDCL.

11. The Lead Consortium Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Consortium Members respectively from time to time in response to the RFP for the purposes of the Bid. The representation by the Lead Member shall be deemed to be on behalf of and binding on all members of the Consortium.

12. It is expressly understood and agreed between the Members of the Consortium and Parties that the responsibilities and obligations of each of the Members shall be as delineated as annexed hereto as Annexure-A forming integral part of this Agreement. It is further agreed by the Members that the above sharing of responsibilities and obligations shall not in any way be a limitation of responsibilities and liabilities of the Members, with regards to all matters relating to the execution of the Bid and implementation of the Project envisaged in the RFP Documents.

13. It is clearly agreed that the Lead Consortium Member shall ensure performance indicated in the RFP. In the event one or more Consortium Members fail to perform its/ their respective obligations, the same shall be deemed to be a default by all the Consortium Members.

14. It is hereby expressly agreed between the Parties to this Consortium Agreement that neither Party shall assign or delegate or subcontract its rights, duties, or obligations under this Agreement to any person or entity except with prior written consent of NBPDCL.

15. This Consortium Agreement:

    a) has been duly executed and delivered on behalf of each Party hereto and constitutes the legal, valid, binding, and enforceable obligation of each such Party;

b) sets forth the entire understanding of the Parties hereto with respect to the subject matter hereof; and
c) may not be amended or modified except in writing signed by each of the Parties and with prior written consent of NBPDCL.

Common Seal of ..... has been affixed in my/ our presence pursuant to Board Resolution dated	For M/s. ..... (Party 1) *[Signature of Authorized Representative]* ..... *[Name of the Authorized Representative]* *[Designation of the Authorized Representative]*

Witness 1

[Signature of Witness 1]

.....

Name:

Designation Witness 2 [Signature of Witness 2] ..... Name: Designation:

..	
N. Common Seal of ..... has been affixed in my/ our presence pursuant to Board Resolution dated	For M/s. ..... (Party N) *[Signature of Authorized Representative]* ..... *[Name of the Authorized Representative]* *[Designation of the Authorized Representative]*
N.1. Witness 1 [Signature of Witness 1] ..... Name: Designation:	N.2. Witness 2 [Signature of Witness 1] ..... Name: Designation:

11.2 Form-2 : Format of Power of Attorney by SI-2nd in favor of SI-Lead

[To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution, duly signed on each page.]

[To be provided by each Consortium Member (other than the Lead Consortium Member) in favor of the Lead Consortium Member]

WHEREAS [NBPDCL] has issued for Tender No. [Tender Details] (the "RFP") dated [Date] for inviting Bids in respect of Selection of System Integrator for (the "Project") on the terms contained in the RFP;

WHEREAS M/s…….. and M/s. ……. [Insert names of all Members of Consortium] the Members of the Consortium are desirous of submitting a Bid in response to the RFP, and if selected, undertaking the responsibility of implementing the Project as per the terms of the RFP;

WHEREAS all the Members of the Consortium have agreed under the Consortium Agreement dated ……. (the "Consortium Agreement"), entered into between all the Members and submitted along with the Bid to appoint ……... [Insert the name and address of the Lead Consortium Member] as Lead Consortium Member to represent all the Members of the Consortium for all matters regarding the RFP and the Bid;

AND WHEREAS pursuant to the terms of the RFP and the Consortium Agreement, we, the Members of the Consortium hereby designate M/s ……... [Insert name of the Lead Member] as the Lead Consortium Member to represent us in all matters regarding the Bid and the RFP, in the manner stated below: -

Know all men by these presents, we ……. [Insert name and address of the registered office of the Member 1], ……. [Insert name and address of the registered office of the Member 2] ….., ……. [Insert name and address of the registered office of the Member n] do hereby constitute, appoint, nominate and authorize …… [Insert name and registered office address of the Lead Consortium Member], which is one of the Members of the Consortium, to act as the Lead Member and our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of Consortium's Bid in response to the RFP issued by NBPDCL including signing and submission of the Bid and all documents related to the Bid as specified in the RFP, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document, which NBPDCL may require us to submit. The aforesaid attorney is further authorized for making representations to NBPDCL named in the RFP, and providing information / responses to NBPDCL, representing us and the Consortium in all matters before NBPDCL named in the RFP, and generally dealing with NBPDCL named in the RFP in all matters in connection with our Bid, till completion of the bidding process as well as implementation of the Project, if applicable, in accordance with the RFP.

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

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

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

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

Signed by the within named ……. *[Insert the name of the executant Consortium Member]* **through the hand of** Mr./ Ms./ Dr. ……. **duly authorized by the Board to issue such Power of Attorney dated this** ……. **day of** ……..

Accepted

……

(Signature of Attorney)

[Insert Name, designation, and address of the Attorney]

Attested

……..

(Signature of the executant)

(Name, designation, and address of the executant)

…….

Signature and stamp of Notary of the place of execution

Common seal of …… has been affixed in my/our presence pursuant to Board of Director's Resolution dated……

1. **WITNESS1. ……. (Signature)**
   Name …….

   Designation.....……...
2. **WITNESS2.....……..... (Signature)**
   Name …….

Designation.....…… __

Notes

a. *The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s).*
b. *In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed. Such POAs must be duly apostilled and (if required) suitable confirmation of the concerned consulate must also be obtained.*
c. *Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a Board resolution / power of attorney, in favor of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).*

11.3 Form-3 : Format of Power of Attorney by SI-Lead / Sole Bidder authorizing an Individual Designated Representative for the Consortium

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

Know all men by these presents, we ……*[Insert name and address of the registered office of the Lead Consortium Member of the Bidding Consortium/ Sole Bidder]* do hereby constitute, appoint, nominate and authorize Mr./Ms. …… *[Insert name and residential address]*, who is presently employed with us and holding the position of …….. as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid in response to Tender No. [Tender Details] (the "Project") issued by [NBPDCL], including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which NBPDCL may require us to submit. The aforesaid attorney is further authorized for making representations to NBPDCL, and providing information / responses to NBPDCL, representing us in all matters before NBPDCL, and generally dealing with NBPDCL in all matters in connection with our Bid till the completion of the bidding process as per the terms of the RFP.

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

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

Signed by the within named ..... *[Insert the name of the executant company]* **through the hand of Mr./ Mrs. ……. duly authorized by the Board to issue such Power of Attorney dated this ……. day of ……**

Accepted

…… (Signature of Attorney)

[Insert Name, designation, and address of the Attorney]

Attested

……..

(Signature of the executant)

(Name, designation, and address of the executant)

…….

Signature and stamp of Notary of the place of execution

Common seal of …… has been affixed in my/our presence pursuant to Board of Director's Resolution dated……

1. **WITNESS 1. ……. (Signature)**

Name …….

Designation.....……

2. **WITNESS 2. ……. (Signature)**

Name …….

Designation.....……. _

Notes:

a. *The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s).*
b. *In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed. Such POAs must be duly apostilled and (if required) suitable confirmation of the concerned consulate must also be obtained.*

c. *Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a Board resolution / power of attorney, in favor of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).*

11.4 Form 4: Format of Covering Letter by SI-Lead/ Sole Bidder for Submission of Bid

[Covering Letter shall be on the official letterhead of the SI-Lead of the Bidding Consortium/ Sole Bidder]

[Reference No.]

From:

[Address of the SI-Lead/ Sole Bidder]

[Telephone No., Fax No., Email]

[Date]

To:

Chief Engineer (P&E), NBPDCL,
NBPDCL, Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)

Sub: Bid for Selection of System Integrator for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years

Ref: [Tender Details]

Dear Sir/ Madam,

We, the undersigned ……. *[Insert name of the SI-Lead*/ Sole Bidder*]* having read, examined, and understood in detail the RFP for Selection of System Integrator for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years hereby submit our Bid comprising of Technical and Financial Bids.

1. We give our unconditional acceptance to the RFP including but not limited to all its instructions, terms and conditions, and formats attached thereto, issued by NBPDCL, as amended. In token of our acceptance to the RFP, the same have been initialed by us and enclosed to the Bid. We shall ensure that our Consortium shall execute such requirements as per the provisions of the RFP and provisions of such RFP shall be binding on us.

2. **Fulfilment of Eligibility**

We undertake that we fulfil the Eligibility Criteria stipulated in the RFP and fulfil all the eligibility requirements as the Lead Consortium Member/ Sole Bidder as outlined in the RFP.

3. **Bid Security**

We have enclosed a Bid Security of [Amount] in the form of a Bank Guarantee No. ……. *[Insert Bank Guarantee Number]* dated ……. *[Insert date of the Bank Guarantee]* as per Form 5 given from ……. *[Insert name of Bank providing Bid Bond]* and valid up to [Date].

4. **No Deviation**

We have submitted our Financial Bid strictly as per terms and formats of the RFP, without any deviations, conditions and without mentioning any assumptions or notes for the Financial Bid in the said format.

5. Acceptance

We hereby unconditionally and irrevocably agree and accept that the decision made by NBPDCL in respect of any matter regarding or arising out of the RFP shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process.

We confirm that there are no litigations or disputes against us, which materially affect our ability to fulfil our obligations with regard to fulfilling our obligations as per the RFP.

6. Familiarity with Relevant Indian Laws and Regulations

We confirm that we have studied the provisions of the relevant Indian laws and regulations as required to enable us to submit this Bid and execute the RFP Documents, in the event of our selection as Selected Bidder. We further undertake and agree that all such factors as mentioned in the SI Contract have been fully examined and considered while submitting the Bid.

7. Contact Person

Details of the contact person representing our Bidding Consortium/ Sole Bidder (registered Company) supported by the Power of Attorney prescribed in Form 3 given in the RFP are furnished as under:

Name: ……..

Designation: ……..

Company: ……

Address: ……

Mobile: ……..

Phone: ……..

Fax: ……

Email: ……

1. We are submitting herewith the Technical Bid containing duly signed formats, both in electronic and physical forms, (duly attested) as desired by you in the RFP for your consideration.

2. We are also submitting herewith the Financial Bid in electronic form only, as per the terms and conditions in the RFP.

8. It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFP and subsequent communications from NBPDCL.

9. The information submitted in our Bid is complete, strictly as per the requirements stipulated in the RFP and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid.

10. We confirm that all the terms and conditions of our Bid are valid for acceptance for a period of 1 (one) year from the Bid Submission Deadline.

11. We confirm that we have not taken any material deviation so as to be deemed non-responsive with respect to the provisions stipulated in the RFP.

12. We confirm that no order/ ruling/ judgment has been passed by any Competent Court or Appropriate Commission against us or any of our Consortium Members or in the preceding 1 (one) year from the Bid Submission Deadline for breach of any contract and that the Bid Security submitted by the us or any of our Consortium Members has not been forfeited, either partly or wholly, in any bid process in the preceding 1 (one) year from the Bid Submission Deadline.

13. We confirm that we are not currently blacklisted by any Govt. Organization or Regulatory Agencies or Govt. undertaking.

14. We are registered/ exempt from registering in accordance with applicable laws
[Evidence of valid registration by the Competent Authority shall be attached if applicable]

Dated the ……. *[Insert date of the month]* day of ……. *[Insert month, year]* at ……. *[Insert place]*.

Thanking you,

Yours Sincerely,

[Insert Signature here]

[Insert Name here]

[Insert Designation here]

11.5 Form 5: Format of Bank Guarantee for Bid Security

[To be on non-judicial stamp paper of Rupees One Hundred Only (INR 100/-) or appropriate value as per Stamp Act relevant to place of execution, duly signed on each page.]

Reference No. ……. Bank Guarantee No. ……. Dated: …….

To:

Chief Engineer (P&E),
NBPDCL ,Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)

Dear Sir/ Madam,

WHEREAS…… [Insert name of the Sole Bidder/SI-Lead] with address ……. [Insert address of Sole Bidder /SI-Lead] having its registered office at ……. [Insert address of the Sole Bidder /SI-Lead] (Hereinafter, the "Bidder") wishes to participate in Tender No. [Tender Details] (the "RFP") issued by NBPDCL for Selection of System Integrator for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years.

And WHEREAS a Bank Guarantee for [Amount] valid [Date] is required to be submitted by the Bidder along with the RFP.

In consideration of the [details of the Bidder] agreeing to undertake the obligations under the [insert details of the bid document], we, …….[Insert name of the Bank and address of the Branch giving the Bank Guarantee] having our registered office at …….[Insert address of the registered office of the Bank] ("**Guarantor Bank**") hereby give this Bank Guarantee No. …….[Insert Bank Guarantee number] dated …….[Insert the date of the Bank Guarantee], and hereby agree unequivocally, irrevocably and unconditionally to pay immediately on demand in writing from the NBPDCL any officer authorized by it in this behalf any amount not exceeding [Amount] to the said NBPDCL on behalf of the Bidder.

We, [Insert *name of issuing bank*] do hereby undertake to pay the amounts due and payable under this bank guarantee without any demur, protest, dispute or any inquiry. Any such demand made on the Guarantor Bank, shall be conclusive as regards the amount due and payable by the Guarantor Bank under this bank guarantee. Our liability under this present being absolute and unequivocal. The Guarantor Bank hereby expressly agrees that it shall not require any proof of the terms of the [bid documents] or the occurrence of any event specified thereunder and shall

make the payment to the NBPDCL immediately on the written demand from the NBPDCL, made in any format, raised at the above-mentioned address of the Guarantor Bank.

We …….. [Insert name of the Bank] also agree that withdrawal of the Bid or part thereof by the Bidder within its validity or non-submission of Performance Security by the Bidder within the stipulated time of the Letter of Award to the Bidder or any violation to the relevant terms stipulated in the RFP would constitute a default on the part of the Bidder and that this Bank Guarantee is liable to be invoked and encashed within its validity by the NBPDCL in case of any occurrence of a default on the part of the Bidder and that the amount is liable to be forfeited by the NBPDCL.

This Guarantee shall be valid and binding on this Bank up to and inclusive of …….. [Insert the date of validity of the Bank] and shall not be terminable by notice or by Guarantor by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or change in the constitution of the Bank or the firm of the Bidder Or by any reason whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, conceded with or without our knowledge or consent by or between the Bidder and the NBPDCL.

NOTWITHSTANDING anything contained hereinbefore, our liability under this guarantee is restricted to [Amount]. Our Guarantee shall remain in force till [Date]. Unless demands or claims under this Bank Guarantee are made to us in writing on or before [Date], all rights of the Beneficiary under this Bank Guarantee shall be forfeited, and we shall be released and discharged from all liabilities there under.

[Insert the address of the Bank with complete postal branch code, telephone and fax numbers, and official round seal of the Bank]	*[Insert signature of the Bank's Authorized Signatory]*
Attested	
…… [Signature] (Notary Public)	
Place: ……	Date: ……

INSTRUCTIONS FOR SUBMITTING BANK GUARANTEE

1. Bank Guarantee to be executed on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.
2. The Bank Guarantee by Bidder shall be given from any Scheduled Commercial Bank.
3. The full address along with the Telex/Fax No. and e-mail address of the issuing bank to be mentioned.

11.6 Form 6: Project Implementation Plan

The Bidder shall submit a preliminary Project implementation plan along with the Bid which shall include at least the following activities:

1) *Site Survey detail plan with details of deployed manpower with required equipment for conducting survey work;*
2) *Understanding of requirement with respect to Project implementation;*
3) *Overall system architecture, configuration, development, customization etc.;*
4) *Approach towards data privacy and cyber security;*
5) *Details of proposed roll out and testing methodology along with survey data quality check plan;*
6) *Approach paper documenting the interfaces for integration with existing and future applications based on the information provided by NBPDCL;*
7) *Project team structure;*
8) *Quality Assurance Program;*
9) *Training Schedule,*
10) *Change Management Plan*
11) *Documentation*
12) *Cutover and Go-Live Plan*
13) *Exit Management and Knowledge Transfer Plan*
14) *Unpriced Bill of Materials and Services for ICT at DC/DR*
15) *Unpriced Bill of Materials and Services for Software*
16) *Any other knowledge/expertise require to complete the project*

11.7 Form 7: Format of Letter of Consent by Sole Bidder/ SI-Lead reviewing each element of the Bid

[On the letter head of Sole Bidder/ each Member of the Consortium including Lead Member]

[Reference No.]

From:

[Address of the Lead Consortium Member/ Sole Bidder]

[Telephone No., Fax No., Email]

[Date]

To:

Chief Engineer (P&E), NBPDCL
,Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)

Sub: Bid for Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years.

Ref: [Tender Details]

Dear Sir/ Madam,

We, ……..…. [Insert name of the undersigned Sole Bidder/ Consortium Member] Sole Bidder/ Member of Consortium and Lead by ……..…. [Insert name of the Lead Consortium Member] have read, examined, and understood the RFP and RFP Documents for Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years.

We hereby confirm our concurrence with the RFP including in particular the Bid / and Consortium Agreement submitted by ……..…. [Insert name of the Sole Bidder/ Lead Consortium Member], in response to the RFP. We confirm that the Bid has been reviewed and each element of the Bid is agreed to including but not limited to the commitment and obligations of our Company.

The details of contact person are furnished as under:

Name :

Designation :

Name of the Company :

Address :

Phone Nos. :

Fax Nos. :

E-mail address :

Dated the ……. day of ……. of 20……

Thanking you,

Yours faithfully,

……..

[Signature, Name, Designation of Authorized Signatory of Consortium Member and Company's Seal]

Business Address:

[Name and address of principal officer]

11.8 Form 8: Table of Compliance

The Bidder shall submit the details of PQR and TQR supporting documents in the following format

PQR/TQR Clause Ref	**Criteria Description**	**Supporting Document**	**Compliance (Yes / No)**	**Page# at which document provided as part of Technical Proposal**

11.9 Form 9: Bidder's Representative and Key Personnel

[Bidders should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the System Integrator Contract. The data on their experience should be supplied using the Form 10 below for each candidate.]

1.	**Title of position:** Project Manager (Project In-charge)	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
2.	**Title of position:** Associate Project Managers (BSPTCL, SBPDCL, NBPDCL)	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
3.	**Title of position:** Technical & Functional Experts	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
4.	**Title of position:** Financial Expert	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]

	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
5.	**Title of position:** Electrical Domain Expert	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
6.	**Title of position:** Field Survey Lead	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
7.	**Title of position:** Data Centre ICT infrastructure Expert	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
8.	**Title of position:** Enterprise Software Architect	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
9.	**Title of position:** Application Developer /Programmer	
	Name of candidate:	

	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
10.	**Title of position:** Financial Expert	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
11.	**Title of position:** Mobile Application Expert	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]
12.	**Title of position:** System/Database Administrator	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g., attach high level Gantt chart*]

11.10 Form 10: Resume and Declaration

Name of Bidder:

Position [*#1*]: [*title of position*]		
Personnel information	**Name:**	**Date of birth:**
	Address:	**E-mail:**
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading, and writing skills]*	
Details		
	Address of employer:	
	Telephone:	**Contact (manager / personnel officer):**
	Fax:	
	Job title:	**Years with present employer:**

Summarize professional experience in reverse chronological order. Indicate technical and managerial experience relevant to the Project.

Project	**Role**	**Duration of involvement**	**Relevant experience**
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned ***[insert either "Contractor's Representative" or "Key Personnel" as applicable]***, certify that to the best of my knowledge and belief, the information contained in this Form 5 correctly describes myself, my qualifications, and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Bid evaluation;

(b) result in my disqualification from participating in the Bid;

(c) result in my dismissal from the contract.

Name of Contractor's Representative or **Key Personnel: [*insert name*]**

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Bidder:

Signature: _____

Date: (day month year): _____

11.11 Form 11: Bidder Information

[Sole Bidder/ all Consortium Members must provide all documents required to prove/ substantiate its Eligibility as required in Eligibility Criteria Clause 5.3. for each Consortium Member]

S. No.	Information Requirement	Details
1	Company Name and Details	
2	Address of its place of business in India	
3	List of board of directors or regulating/controlling body	
4	Attested copy of Certificate of Registration/ Incorporation issued by the Registrar of Companies	
6	Certificate of Commencement of Business issued by the Registrar of Companies	
7	Copy of the Goods and Services Tax (GST) Registration Certificate	
8	Provident Fund (PF) Certificate indicating PF Code	
9	Copy of Permanent Account Number (PAN) Card	
11	CA certified audited annual financial statements and positive financial Net worth for the last three years	

11.12 Form 12: Records/document related Eligibility and Qualification Requirements

Submit all required documents with page indexing reference against each clause of Eligibility and Qualification Requirements in following format

S.No.	Eligibility and Qualification Requirements clause	Criteria Description	Brief description of Submitted documents	Document ID (If Any)	Page# at which document provided as part of Technical Proposal
1.	Ex. s.No.1 of clause 4.1		company registration document		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

Form 13: **List of material and services**

Please Note: The list is indicative only. This needs to be detailed out and customized by SI, based on the Project requirement and system configuration to meet SLAs, performance targets, functional requirements and other conditions as mentioned in the bid document.

Table 1: Data Center (DC) and Disaster Recovery Center (DRC) Components [To be defined by SI]

Sl. No.	**Services**	**Unit of Measurement**	**Make & Model**	**DC Quantity**	**DR Quantity**	Configuration details (CPU/RAM/Storage etc)	Remarks (Any other information)
A	**Asset & Maintenance Management systems including FAR Servers (Compute) in High availability**						
1.	Web Server	No.					
2.	Application Server	No.					
3.	Database Server	No.					
4.	Additional Servers -for multiple instances of various modules to meet	No.					

	SLA						
5.	Training Server	No.					
B	**GIS systems Servers (Compute) in High availability**						
6.	Web Server	No.					
7.	Application Server	No.					
8.	Database Server	No.					
9.	Additional Servers -for multiple instances of various modules to meet SLA						
C	**Servers and other devices for Other Services**						
10	Training Servers	No.					
11	Integration Servers	No.					
12	Servers for Online MIS, Dashboard						
13	Servers Development						
14	Quality Servers						
15	Servers for Infrastructure monitoring, Log Management, Security etc.						
16	Servers for Service Desk / Helpdesk						
17	SAN Switches						
18	SAN Storage						
19	Core/Spine Switches						
20	Server/Network Racks						
21	Tape Library						
22	Any other item required to deliver services mentioned in RFP						
D	System Software License for entire contract duration						
23	Operating Systems						
24	Database Software						
25	Web Server Software						
26	Application Server Software						
27	Data Backup & Recover						
28	Server Security						
29	EMS, NMS & Helpdesk						

30	SLA management solution						
31	Any other item required to deliver services mentioned in RFP						

Table 2: Bill of Materials and Services for proposed System Development [Indicative Only. To be defined by SI]

Sl. No.	Particular	Detailed description with pros & cons of chosen technology/solution
1.	Proposed Technologies to be used for development of proposed application software system	
2.	Proposed Technologies to be used for development of proposed GIS application software system	
3.	Details of Proposed Development team size	

11.13Form 13: FORMAT FOR MANUFACTURER'S AUTHORISATION FORM

Ref:No. Dated:

In respect of …… (NAME OF WORK AND NIT NO.) …… ……

To Dt…….

Chief Engineer (P&E), NBPDCL
North Bihar Power Distribution Company Ltd.,
Vidyut Bhawan, Bailey Road,
Patna-800021 (Bihar)

Dear Sir,

We..... Who are established and reputable manufacturers of .... (Name & descriptions of Materials/equipment offered) having manufacturing factories at ..... (Address of factory) do hereby authorize M/s (Name and address of Contractor) to submit a bid, and sign the contract with you for the above Materials/equipment manufactured by us against the Tender Specification ……..

We hereby extend our full guarantee and warranty as per General Conditions of Contract for the Materials /equipment and services offered by us to the above Contractor against this

Specification No..……..

We hereby agree to depute our representatives from time to time to the NBPDCL's Project site to ensure successful performance of the material in accordance with Tender Specifications. Further, if the NBPDCL suffers any loss or damage on account of non performance of the material, including warranty/defect Liability period as per bid specification in terms of the contract, we the Manufacturer and the Contract or are jointly and severally (as per the scope of work and services assigned to us) bound to undertake to pay such loss or damages to the NBPDCL on its demand without any demur as per warranty/Guarantee clause of GCC of Tender document.

As a security, we the Manufacturer shall furnish Performance Guarantee in favour of the NBPDCL in a form acceptable to the NBPDCL. The value of such guarantee shall be equivalent to 10% of the contract value of such materials/ equipment to be supplied by the Manufacturer as identified in the Contract awarded by the NBPDCL to the Bidder/Contractor and it shall be part of guarantee towards the faithful performance/compliance in terms of the Contract. The guarantee shall be unconditional, irrevocable and valid for the entire period of the Contract, as per the provisions of the Contract.

Yours faithfully,

For and on behalf of M/s……..

Signature:……..

Name:……

Designation:……..

Seal:……

Note: The signatory should have the authorization from their Board of Director of the concerned Firm & a copy of the same also to be submitted along with the bid.

12. Financial Proposal – Forms

12.1 Form 1: Format of Submission of Financial Bid

[IMPORTANT NOTE: THE FINANCIAL BID SHALL ONLY BE SUBMITTED IN THE ELECTRONIC FORMAT. IT SHALL NOT BE SUBMITTED IN HARD COPY OR AS A PART OF THE TECHNICAL BID.]

[On the letter head of each Member of the Consortium including Lead Member/ Sole Bidder]

[Reference No.]

From:

[Address of the Lead Consortium Member/ Sole Bidder]

[Telephone No., Fax No., Email]

[Date]

To:

Chief Engineer (P&E),
NBPDCL, Vidyut Bhawan, Bailey Road, Patna-800021 (Bihar)

Sub: Financial Bid for Selection of SI for Preparation of FAR and EAM for BSPHCL and its subsidiary companies & Maintenance Management for 5 years.

Ref: [Tender Details]

Dear Sir/ Madam,

We, the undersigned ……..…… [Insert name of the Lead Consortium Member/ Sole Bidder 'Party 1'] representing ……..…… [Insert name of the Lead Consortium Member 'Party 2'], ……..……..…., having read, examined and understood in detail the RFP for Implementation of NBPDCL's proposed System hereby submit our Financial Bid. We hereby undertake and confirm that:

A. We have submitted our Financial Bid strictly in accordance with the RFP without any deviations or condition.
B. Our Financial Bid is consistent with all the requirements of submission as stated in the RFP and subsequent communications.
C. Price quoted clearly mentions the total cost (basic cost, Goods and Services Tax, or any other taxes/duties/levies).
D. Under no circumstances shall escalation in prices of this Financial Bid be entertained by NBPDCL whether due to factors within or beyond control of the Bidding Consortium such as change in tax structure, currency value change, etc.
E. The details quoted herein shall stand valid at least for 9 months from the date of submission of this Financial Bid and for implementation of Project, if awarded, as per the timeframe indicated in the RFP.
F. Our Total Cost of the Project for the contract period will remain same for the entire contract duration

G. Our quoted prices are as per the Annexure attached herein.

Dated the ……. [Insert date of the month] day of ……. [Insert month, year] at ……. [Insert place].

Thanking you,

Sincerely yours,

[Insert Signature here]

[Insert Name here]

[Insert Designation here]

12.2 Form 2: Format for Financial Breakup of Cost Components

<Please Note: The items are indicative only. This needs to be detailed out and customized by Utility basis project requirement. Any variation in GST and or cess on the Items specifically mentioned above shall be on account of the Utility and no other items including hardware and software that may be necessary for putting the proposed system in place>

	Items	Unit	Quantity	Unit Price Rs. Without GST	Unit Price Rs. With GST	Value with GST
	System Implementation Phase Cost					
A	**Map procurement**					
1.	Procurement of Satellite Imagery of 2.5 m resolution, mono data type and creation of Base Map of project area i.e. entire area of Bihar state.	Sq. Km	94,163			
	Sub-total (A)					
B	Field survey (Collection& updation of attribute of following electrical network assets through field survey and development, codification, mapping & indexing etc.)					
B.1	**SBPDCL**					
1.	33/11 kV substations	Nos	617.00			
2.	HT (33 kV) overhead lines/underground cables alongwith associated line equipment such as Poles, RMUs, Distribution Transformers, Capacitors etc.	CKms	9,041.00			
3.	HT (11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	CKms	65,937.00			
4.	DT	Nos	1,51,376.00			
5.	QR Code printing	Nos	1,53,227.00			
6.	Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through survey for GIS application and tagging of assets connected with each Feeder in GIS system to enable calculation of Feeder wise and Town wise details	Per Town	64			
7.	Central Store	Nos	10			

8.	Other Store	Nos	17			
9.	Number of Circle office	Per office	11			
10.	Number of Division office	Per office	47			
11.	Number of other office	Per office	187			
	Sub-total (B.1)					
B.2	**NBPDCL**					
1.	33/11 kV substations	Nos	643.00			
2.	HT (33 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	9,748.00			
3.	HT (11 kV) overhead lines/underground cables alongwith associated line equipments such as Poles, RMUs, Distribution Transformers, Capacitors etc.	Kms	78,834.00			
4.	DT	Nos	1,97,892.00			
5.	QR Code printing	Nos	1,99,821.00			
6.	Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through survey for GIS application and tagging of assets connected with each Feeder in GIS system to enable calculation of Feeder wise and Town wise details	Per Town	73			
7.	Central Store	Nos	9			
8.	Other Store	Nos	22			
9.	Number of Circle office	Per office	9			
10.	Number of Division office	Per office	46			
11.	Number of other office	Per office	305			
	Sub-Total (B.2)					
B.3	**BSPTCL**					
1.	220/132 KV (24), 132/33 (127) KV substations	Nos	170.00			
2.	HT (220 KV , 132 KV) overhead lines alongwith associated line equipments such as Poles, etc	Kms	20,393.00			

3.	Preparation of digitized electrical network mapped on the base map in the pre-defined scale with features and attributes of assets collected through survey for GIS application and tagging of assets connected with each Feeder in GIS system to enable calculation of Feeder wise and Town wise details	Nos	170			
4.	Central Store	Nos	2			
5.	Other Store	Nos	8			
6.	Number of Circle office	Per office	15			
7.	Number of Division office	Per office	29			
8.	Number of other office	Per office	162			
9.	QR Code printing	Per office	652.00			
	Sub-Total (B.3)					
B.4	**BSPHCL**					
1.	Number of offices (HQ, Hospitals, stadium, park, auditorium etc.)	Per office	20			
2.	Number of Officers Quarters residence	Per office	85			
	Sub-Total (B.4)					
B.5	**BSPGCL**					
1.	Number of lands	Per office	2			
2.	Number of Office	Per office	1			
	Sub-Total (B.5)					
B.6	**Miscellaneous**					
	Any other item required to complete the scope of work related to survey and preparation of FAR	LS	1			
	Sub Total (B=B.1+B.2+B.3+B.4+B.5 + B.6)					
C	**Software Development & Implementation Cost**					
1.	Development of proposed enterprise asset & Maintenance management software application System for all users in all respect including mobile apps and related systems (configure, install, optimize etc.)	LS	1			
2.	Supply/Develop, customise/configure, install proposed GIS software application System for all users including mobile apps and related systems	LS	1			

3.	Any other item required to complete the scope of work	LS	1			
	Sub Total (C)					
D	**Training Cost**					
1.	System - Training & Change Management	LS	1			
2.	Any other item required to complete the scope of work	LS	1			
	Sub-Total (D)					
E	**DC & DR Infra with 5 years ATS from Go-Live**					
1.	Production Server at Data Centre (minimum Two Web servers, Two Application Servers, Two Database Servers)in high level availability -DC & DR	No.	12			
2.	Servers for Development and Quality	No.	3			
3.	Training Servers	No.	3			
4.	SAN Switch for DC and DRC	No.	4			
5.	Tape library for DC and DRC	No.	2			
6.	SAN Storage for DC and DRC	No.	2			
7.	Backup Software	No.	1			
8.	Virtualization & Management as required	LS	1			
9.	Switch	No.	4			
10.	Rack	No.	4			
11.	IP KVM Solution with Rack Mount LCD	No.	4			
12.	OS data center edition as required	LS	1			
13.	OS standard edition as required	LS	1			
14.	Database License as required	LS	1			
15.	Any other item required to complete the scope of work	LS	1			
	Sub-Total (E)					
	Sub-Total for implementation phase cost (C+D+E)					
F	**Support & Maintenance**					
F.1	ATS/AMC					
1.	ATS/AMC enterprise asset & Maintenance management software application & related systems for 5 years after Go-Live	LS	1			
2.	ATS/AMC enterprise GIS software application System software applications & related systems for 5 years after Go-Live	LS	1			
3.	Any other item required to complete the scope of work	LS	1			
	Sub-Total (F.1)					
F.2	**Other Support Maintenance Cost**					
1.	Support & Maintenance cost for Application software for 5 years after Go-Live	LS	1			
2.	Support & Maintenance cost for Data Centre Infrastructure for 5 years after Go-Live	LS	1			

3.	Helpdesk cost for 5 years after Go-Live	LS.	1			
4.	Field Support at Division level, one manpower at each division (DISCOM:93. Transmission:31) for 5 years after Go-Live	LS	1			
5.	Any other item required to complete the scope of work for 5 years after Go-Live	LS	1			
	Sub-Total (F.2)					
	Sub-Total for Support & Maintenance (F =F.1+F.2)					
	G-Total = A+B+C+D+E+F					

Note:

I. **Any item/ material either hardware or software required to meet the functionality specified in the tender document whose related component is missing in the above table has to be accounted by the Bidder and the price of the same is assumed to be reflected and taken care in the price specified to NBPDCL by the Bidder in this commercial bid. NBPDCL is liable only to pay the Contract price as per the payment terms mentioned in the RFP to meet all the requirements as specified in the RFP.**

II. ***If a firm/bidder quotes impracticably low support & Maintenance charges i.e., less than 20% of the Total Cost of the Project NBPDCL reserves the right to treat the bid as unresponsive and not consider it.***

13. Contract Related Forms

13.1 Form 1: Format of Performance Security

[To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution, duly signed on each page.]

Reference No. ……. Bank Guarantee No. ……..… Dated: …….

To:

[NBPDCL]

[Address]

Dear Sir/ Madam,

WHEREAS……. *[Insert name of the SI-Lead / Sole Bidder]* with address ……. [*Insert address of the SI-Lead/ Sole Bidder]* having its registered office at ……. [*Insert address of the SI-Lead/ Sole Bidder*] (hereinafter, the "Contractor"), subsequent to participation in Tender No. [Tender Details] (the "RFP") issued by [NBPDCL] (hereinafter, the "Beneficiary") for Appointment of System Integrator for Supply, Installation, Commissioning,

Implementation and Support for proposed System, have been issued the Letter of Award as the Selected Bidder. The Selected Bidder was required to incorporate the SI. Further the SI was required to furnish a Performance Security in the form of a Bank Guarantee

And WHEREAS a Bank Guarantee for Rupees ……. *[Insert amount in words equivalent]* (…….) *[Insert amount in figures]* valid till……. [*Insert Contract Period*] is required to be submitted by the SI as per the terms and conditions of the RFP.

In consideration of the [details of the Bidder] agreeing to undertake the obligations under the [insert details of the bid document], we, …….[Insert name of the Bank and address of the Branch giving the Bank Guarantee] having our registered office at …….[Insert address of the registered office of the Bank] ("**Guarantor Bank**") hereby give this Bank Guarantee No. …….[Insert Bank Guarantee number] dated …….[Insert the date of the Bank Guarantee], and hereby agree unequivocally, irrevocably and unconditionally to pay immediately on demand in writing from the NBPDCL any officer authorized by it in this behalf any amount not exceeding [Amount] to the said NBPDCL on behalf of the Bidder.

We, [Insert *name of issuing bank*] do hereby undertake to pay the amounts due and payable under this bank guarantee without any demur, protest, dispute or any inquiry. Any such demand made on the Guarantor Bank, shall be conclusive as regards the amount due and payable by the Guarantor Bank under this bank guarantee. Our liability under this present being absolute and unequivocal. The Guarantor Bank hereby expressly agrees that it shall not require any proof of the terms of the [bid documents] or the occurrence of any event specified thereunder and shall make the payment to the NBPDCL immediately on the written demand from the NBPDCL, made in any format, raised at the above-mentioned address of the Guarantor Bank.

We ……. *[Insert name of the Bank]* also agree that non-performance, delayed performance or violation of any of the terms and conditions of the contract by SI would constitute a default on the part of the Bidder and that this Bank Guarantee is liable to be invoked and encashed within its validity by the Beneficiary in case of any occurrence of a default on the part of the SI or the Selected Bidder and that the encashed amount is liable to be forfeited by the Beneficiary.

This agreement shall be valid and binding on this Bank up to and inclusive of ……. [Insert the date of validity of the Bank] and shall not be terminable by notice or by Guarantor change in the constitution of the Bank or the firm of the Bidder Or by any reason whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, conceded with or without our knowledge or consent by or between the Bidder and the Beneficiary.

NOTWITHSTANDING anything contained hereinbefore, our liability under this guarantee is restricted to Rupees ..... *[Insert amount in words equivalent*]. Our Guarantee shall remain in force till ……. *[Insert the contract period]*. Unless demands or claims under this Bank Guarantee are made to us in writing on or before……. [*Insert contract period*], all rights of the Beneficiary under this Bank Guarantee shall be forfeited, and we shall be released and discharged from all liabilities there under.

[Insert the address of the Bank with complete

postal branch code, telephone, and fax numbers,

and official round seal of the Bank]

[Insert signature of the Bank's Authorized Signatory]

Attested:

…… [Signature] (Notary Public)

Place: …… Date: ……

_____

INSTRUCTIONS FOR SUBMITTING BANK GUARANTEE

1. Bank Guarantee to be executed on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.
2. The Bank Guarantee by Bidder shall be given from the Scheduled Commercial Banks.

13.2 Form 2: Format of Letter of Award

Subject: Bid for Appointment of System Integrator for Supply, Installation, Commissioning, Implementation and Support for proposed System

REF: - 1. Request for Proposal for selection of SI dated [•] ("RFP")

2. Your proposal dated [•] ("Proposal")

3. Your clarification [•]

Dear Sir,

1.This is in reference to your Proposal in relation to the RFP.

2.Pursuant to the evaluations of the Bid, your bid has been found to be most suited.

3. A draft of the SI Contract was provided to you along with the RFP. Please note that there shall be no change whatsoever in the terms and conditions as set out in the draft Contract.

4.Please note that in the event of failure to comply with any terms and conditions of this Letter of Award, the entire Bid Security may be forfeited.

5.Any further correspondence in connection with the Project should be addressed to the [insert details of the appropriate authority •]" with a copy to Chairman/ Managing Director, till further instructions are issued.

6.The terms and conditions as set out in this Letter of Award shall stand valid until execution of the SI Contract.

7.Please acknowledge the receipt and return the duplicate copy of this Letter of Award after signing and stamping it in all the pages to the undersigned as a token of acceptance.

Thanking You

Yours truly

[insert details of the NBPDCL]

Reference No. ……. Bank Guarantee No. …….. Dated: …….

14. Technical Specification of ICT infrastructure at DC & DRC

Server			
Name of OEM with product details			
Sl. No	**Minimum technical specifications**	**OEM Compliance (Yes/No)**	**Document Reference/ remarks**
1	Proposed server should be rack/chassis-based, and it must be supplied with a minimum two socket and min 2 x Intel Xeon-Gold 6554S 2.2GHz 36-core Processor with latest Intel Chipset.		
2	Proposed server should support at least 8 x 2.5” hot-plug internal drive slots supporting combinations of NVMe, SAS, and SATA SSD/HDD.		
3	Proposed server should have a suitable RAID controller with minimum non-volatile 4GB/higher cache and supporting RAID 0, 1, 5, 6 & 10.		
4	Should support Boot-from-SAN for Fiber Channel (FC), Fiber Channel over Ethernet (FCoE), and iSCSI storage		
5	Proposed server should support minimum 768GB DDR5 Dual Rank x8 DDR5-4800 memory in balanced configuration, scalable to 2TB.		
6	Proposed server should have minimum of 3 no’s of PCIe 5.0 expansion slots.		
7	10/25Gb 2-port SFP28 Adapter, 32Gb 2-port Fibre Channel Host Bus Adapter with Transceiver and patch cords suitable for MMF cabling.		
8	Proposed server should have 1 front USB 3.0 ports, power buttons and status LEDs, Rear I/O 2 USB 3.0 ports, 1 VGA port, and a dedicated 1G OOB management port.		

9	Proposed server should have 1+1 high-efficiency, redundant hot-plug power supplies of maximum 1.6 kW or better.		
10	The proposed solution must be supplied with at least 900 GB NVMe SSD on RAID 1.		
11	Proposed server should be air-cooled configuration with redundant rotor fans.		
12	Proposed server should support System Management Baseboard management controller IPMI v2.0 compliant, onboard "KVM over IP" support. System management software shall be provided from the same server make and shall be with perpetual licensing.		
13	Maximum 2U rack mount server with front locking bezel, bezel lock, sliding rails, & AC power cords.		
14	Remote Management of Server over LAN & WAN with SSL encryption, Virtual Media, and virtual folder with required advanced license, Remote KVM, Server Health logging, Directory Services compliance (AD or LDAP), REST API, Configuration backup, Syslog (local / remote).		
	System security		
15	Security feature to ensure servers do not execute compromised firmware code. Tamper-free updates - components digitally signed and verified		
16	UEFI Secure Boot and Secure Start support, Immutable Silicon-based Hardware Root of Trust, FIPS 140-2, TPM 2.0, CNSA, NVMe wear level display, UEFI SECURE BOOT or Cryptographically verified trusted booting meeting NIST SP 800 standards, Chassis intrusion Detection, PDOS and Splashing attack protection, One-click secure erase of NAND/user data.		
17	System should support embedded remote support to transmit hardware events directly to OEM or an authorized partner for automated phone home support		
18	TPM 2.0, FIPS 140-2, PCIe 5.0, SMBIOS 3.2, UEFI 2.7, IPMI 2.0, SNMP v3, TLS 1.2, One Button Secure Erase, Secure Recovery, UEFI SECURE BOOT		
	OS Support		
19	Microsoft Windows Server 2022 & 2025.		
20	Red Hat Enterprise Linux (RHEL)		
21	SUSE Linux Enterprise Server (SLES)		
22	VMware ESXi 8.0 or latest		
23	Oracle Linux and Oracle VM		
24	The bidder to provide all required Fiber and transceiver for the solution		

STORAGE			
Name of OEM with product details -			
Sl.	**Requirements**	**Compliance (Yes/No)**	**Document Reference/remarks**
1	Minimum 300TB usable capacity using NVME SSD drives and supporting fault-tolerance for simultaneous failure of two drives. Proposed storage must offer a minimum performance of 100K (± 5%) IOPS with minimum 16KB or better block		

	size at 70:30 R/W ratio using a 100% random workload.		
2	Dual, redundant, hot-pluggable, active-active storage controllers, supporting both SFF as well as LFF drive enclosures to accommodate a combination of SAS, NLSAS, & NVME SSD drives.		
3	Minimum 8 * 32G FC front-end ports across offered dual controllers. Minimum 100 Gbps or higher backend connectivity.		
4	No Single Point of configuration including storage controllers, cache memory, fans, power supplies etc. Must support non-disruptive, online firmware upgrades for both storage controllers and disk drives.		
5	Minimum of 128 GB cache. Cache back-up in case of power failure for indefinite time either using batteries or capacitors or any other equivalent technology. Optional support for Flash cache using SSD / Flash drives.		
6	RAID support for 6 and triple parity. All RAID sets must support thin provisioning. License for thin provisioning must be for complete supported capacity of the proposed storage as well for supported flash cache.		
7	Snapshot and clone functionality for minimum of 512 snapshot licenses. Support for minimum 512 point-in-time copies (snapshots) and 128 volume/clone copies.		
8	Support storage-based replication to DR location. License for maximum supported capacity of the proposed storage shall be offered.		
9	Proposed storage must have virtualization capability to stripe a given volume across all spindles of given drive type within a given disk pool, configured with thin provisioning.		
10	Global hot spare shall be configured as per industry practice.		
11	Minimum of 512 logical units and support for more than 120TB volume at controller level.		
12	Performance management software must be provided. Configuration dashboard must show overall IOPS and MB/sec performance. Tools must be provided for diagnostics, remediation, and recommendations to ensure the overall uptime/availability of the proposed storage.		
13	Must have data efficiency features such as: Thin Provisioning, Space Reclamation, and Thin rebuild.		
14	Rack-mount kit along with suitable bezel and bezel lock kit must be provided.		
	OS Support		
15	Microsoft Windows Server 2022 & 2025.		
16	Red Hat Enterprise Linux (RHEL)		
17	SUSE Linux Enterprise Server (SLES)		
18	VMware ESXi 8.0 or latest		
19	Oracle Linux and Oracle VM		
20	The bidder to provide all required Fiber and transceiver for the solution		
	SAN Switch		
21	Two no's of 32G FC SAN switches must be offered with at least 24 active ports		

	each along with the storage.		

BACKUP SOFTWARE			
Name of OEM with product details -			
Sl.	**Requirements**	**Compliance (Yes/No)**	**Document Reference/remarks**
1	Backup software shall have either front-end capacity-based or instance-based licensing with no restrictions on type of arrays (protecting heterogenous storage technologies).		
2	Backup software should have Capability to do trend analysis for capacity planning of backup environment, extensive alerting and reporting with pre-configured and customizable formats. Any specialized reporting modules needed must be quoted along with associated hardware to achieve this functionality. All necessary hardware resources required to run this module should be supplied.		
3	Backup software should have security and compliance dashboard inbuilt with the product.		
4	Backup software should be able to extend the backup repository to a public cloud service provider by moving older files to any S3 Compatible Object storage or Azure BLOB repositories.		
5	Backup software should have capability to archive data to Amazon or Azure storage archive Tier. Software must have capability to restore the data from archive tier, it should not be dependent on cloud vendor.		
6	Backup software should be able to leverage Immutable Cloud based storage like S3-Immutable service to prevent backup copies of data from any corruption or ransomware attacks.		
7	Backup software should have on demand scans available for malware attacks. Must have inline detection & in guest detection via guest indexing against any malware attacks.		
8	Backup software should have four eyes approval for any backup deletion.		
9	Backup software should be a Hardware Agnostic software, and it should support snapshot integration with hypervisors like VMware, Hyper-V, Nutanix AHV and RHEV and support de-duplication on any storage target. It should be able to backup data to tapes (like LTO) as well for long term retention. Should provide Instant recoveries for any backup to Vmware or Hyper-V Virtual machine. It should also support the Instant VM recovery for AHV workloads as well.		
10	Backup software should support file level recovery from any backup of any VM or physical server. It should support a full system recovery in case of a system crash, either on a physical system or virtual machine or as a Cloud Instance(AWS, Azure or Google)		
11	Backup software should support Multi factor authentication for accessing Backup console and console auto log-off functionality.		

12	Backup software should have the ability to perform staged restores to enable admins to comply to regulations by selectively deleting files / records which should not be restored from the backup copies. This will help in complying to "right to be forgotten" regulations like GDPR, where user data is deleted from restored backup copies in an auditable manner.		
13	Backup software should support instant file share recovery in NAS storages to allow users to access files fast after disaster.		
14	Backup software should have ability to backup data from one server platform and restore it to another server platform to eliminate dependence on a particular machine and for disaster recovery purposes. This bare metal recovery capability should be built in for the physical servers and should even work on the dissimilar hardware.		
	BACKUP SERVER		
15	Suitable backup server hardware along with required OS must be included in the offer.		

BACKUP APPLIANCE			
Name of OEM with product details -			
Sl.	**Requirements**	**Compliance (Yes/No)**	**Document Reference/remarks**
1	300TB usable capacity using NLSAS drives and supporting fault-tolerance for simultaneous failure of two drives. Must be with support for encryption functionality.		
2	Proposed disk backup storage shall have modular architecture to add capacity in future.		
3	Must be certified to work with at least 3 Backup application vendor ISVs like Veeam, Commvault, HPE Zerto etc.		
4	Must be scalable to at least 600TB usable in native mode (Without de-duplication and compression), Vendor shall not use any additional staging device in between while moving the data from Disk based backup device to public cloud or object storage.		
5	Appliance must be configured with at least 24TB space on SSD for data catching operation, in addition to above capacity required in the RFP.		
6	Shall support emulation of both NAS target like NFS and CIFS.		
7	Capability from day1 to do complete copy of data sets from on premise disk backup storage to Cloud storage instead of data tiering.		
8	Capability to deliver selective restore from disk Library itself.		
10	Integrated de-duplication license, low bandwidth replication license so that only unique non duplicated block transfers to remote / DR location		

11	Capability from day1 for both source based, and target based de-duplication and shall be integrated with all well-known backup ISVs. At-least 3 ISVs shall be supported.		
12	Minimum of 2 x 10 Gbps SFP IP ports & 2 x 32Gbps ports. License and SFP for all ports shall be offered and configured.		
13	Appliance Fiber channel ports shall support connectivity of servers either directly or via SAN switches while supporting the both source and Target based deduplication		
14	Must have dual authorization for preventing disruptive operations so that hackers shall not be able to execute or complete all critical operations like deletion of backup store, changing system time etc. Dual authorization shall be independent of Backup ISV being used in the environment.		
15	Must support Secure erase feature for protecting against unauthorized recovery of deleted data.		
16	Appliance must have a rated write performance of at least 60TB per hour		
17	Rack-mount kit along with suitable bezel and bezel lock kit must be provided.		
18	The bidder to provide all required Fiber and transceiver for the solution		

15. Existing ICT infrastructure details at DC & DRC

Data Centre & DR devices in RDSS		
Sl No	Item Description	Qty.
1	**Switches /Routers**	
	Fiber channel SAN switch	2
	Core Switch	2
	DMZ	1
	Distribution Switch	1
	LAYER-II Switch	2
	Router for MPLS/VPN Network	3
	Router for Internet Gateway	4
	Application Load Balancer	5
2	**Server Hardware**	

	Database server for GIS in Cluster Fail Over mode	2
	Database server for other Applications in Cluster Fail Over mode	10
	GIS Application Server	7
	Application Server for Others	25
	Testing, Development & QA server	8
	Access Control Server	6
	Antivirus Server (Trend Micro)	4
	DNS Server	1
	LDAP Server	2
	Web Server	1
	EMS/NMS server with Network operation console	8
	Mail/Messaging Server	4
	Backup Server	6
3	**Storage & Backup Devices**	
	SAN Storage (60 TB usable space)	2
	Tape Library	4
	Media DAT drive	-
	Blank cartridge for Tape library	-
4	**Server Racks**	
	IDF/MDF Floor Mount Rack	21
7	**UPS & Battery System**	
	Critical Load UPS	2
	Service Load UPS	2
8	**IP Telephony**	
	IP PBX	2
9	**PC, Printers & Others**	
	Workstation PC (Computer chair, Table etc)	5
	IP Phones	5

	Network Leserjat (B/W) Printer	1
Data Recovery Centre		
1	**Switches /Routers**	
	Fiber channel SAN switch	2
	Core Switch	2
	Access Switch	1
	Distribution Switch	1
	Router for MPLS/VPN Network	3
	Router for Internet Gateway	2
	Application Load Balancer	4
2	**Server Hardware**	
	Database server for GIS in Cluster Fail Over mode	2
	Database server for other Applications in Cluster Fail Over mode	10
	GIS Application Server	5
	Application Server for Others	20
	Testing, Development & QA server	12
	Access Control Server	6
	Antivirus Server	4
	DNS Server	1
	LDAP Server	2
	Web Server	2
	EMS/NMS server with Network operation console	10
	Mail/Messaging Server	2
	Backup Server	3
3	**Storage & Backup Devices**	
	SAN Storage (60 TB usable space)	2

	Tape Library	1
	Media DAT drive	-
	Blank cartridge for Tape library	100
4	**Server Racks**	
	IDF/MDF Floor Mount Rack	15
5	**Other Active Devices**	
	Check Points/ Firewalls	4
7	**UPS & Battery System**	
	Critical Load UPS	2
	Service Load UPS	2
8	**IP Telephony**	
	IP Phones	5
9	**PC, Printers & Others**	
	Workstation PC (Computer chair, Table etc)	5
	Printer	1

DC and DRC infrastructure in IPDS Scheme

S.No.	Item	Quantity (DC)	Quantity (DRC)	Total
1	DB Servers DB(2 P with 8 core)	2	2	4
2	DB Servers DB(4 P with 8 core)	2	2	4
3	App and Other Servers (4 P with 24 core)	14	7	21
4	SAN Storage at DR (140 TB)		1	1
5	SAN Switch at DR		2	2
6	SAN at DC (140TB)	1		1
7	SAN Switches	2		2
8	Virtual Tape Library	1	1	2
9	Backup Software	1	1	2
10	Virtualization & Management (for APP and Other Servers)	56	28	84
11	Core Switch	2	2	4
12	DMZ Switches	2	2	4
13	Access Switch (24 Port)	4	4	8

14	Management Switch	2	2	4
15	Next Generation Firewall	2	1	3
16	Network based Intrusion Prevention System (NIPS)	2	1	3
17	Server Security (HIPS) - Host Intrusion Prevention System	18	11	29
18	Advance Persistence Threat (APT)	2	1	3
19	Server Load Balancer	2	1	3
20	Web Application Firewall	2	1	3
21	Anti-DDoS Solution	2	1	3
22	Enterprise Management Solution	1	1	2
23	Service Desk / Helpdesk Specification	1		1
24	Server Racks	4	3	7
25	Network Racks	2	1	3
26	IP KVM Solution with Rack Mount LCD (For Proposed Servers)	2	1	3
27	Latest Windows Server OS (Standard Version)	10		10
28	Latest Windows Server OS (Data Center Edition) for 4 Application Servers (4 P with 24 core)	4		4
29	Oracle Enterprise Linux for two DB Servers (2 P with 8 core)	2		2
30	Oracle Enterprise Linux for two DB Servers (4 P with 8 core)	2		2
31	Red Hat Enterprise Linux for two DB Servers (2 P with 8 core)	2		2
32	Red Hat Enterprise Linux for two DB Servers (4 P with 8 core)	2		2
33	Oracle Database Enterprise Edition - Processor Perpetual	24		24
34	Real Application Cluster-Processor Perpetual	16		16
35	Diagnostics Pack-Processor Perpetual	24		24
36	Tuning Pack-Processor Perpetual	24		24

37	Partitioning-Processor	24	24
38	Active Data Guard-Processor Perpetual	24	24

RDSS ICT Infrastructure

S.No.	Component	Quatity	
		DC	**DR**
14	Network Access Control	2	3
15	Database Activity Monitoring	55 RU	
16	Internal Firewall	2	2
17	External Firewall + Anti APT + EPS (5000 Devices)	2	2
18	Log Monitoring and Management system	1	
19	Application Performance Monitoring	1	
20	API Gateway Management System	1	
21	SAN Switch	1 + 2	1 + 2
22	SAN Storage	1	1
23	Virtualization	25	25
24	HIPS	150	
25	Disaster Recovery Management	1	
26	Tape Library + VTL	1 + 1	1 + 1
27	Backup Solution	1	
28	Encryption and Key Management	2	
29	IPAM, DNS & DHCP	1 + 2	2
30	EMS, NMS with Helpdesk	1	1 + 2
31	Document Management System	1	
32	Contact Center, Language & Bot		
33	MDM	5000	
34	Network Rack	2	
35	Server Rack	6	2
36	RMS Stack	1	6
37	Servers	1	
1	Servers	19	1
		6	16
	DataCenter Network Manager	1	6
		1	1

		2	1
2	Router	2	2
3	Spine/Core Switch	2	2
4	Border Leaf Switch	2	2
5	Leaf Switch	6	2
6	Management Switch	2	6
7	NDR	1 (Lot)	2
8	Link Load Balancer	2	1 (Lot)
9	DDoS	2	2
10	SSLi	2	2
11	WAF	2	2
12	Server Load Balancer	2	2