

REQUEST FOR PROPOSAL (RfP) For P2P Energy Trading Using Blockchain (Pilot)

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SECTION-I PREFACE

1. About the Document

The purpose of this RfP document is to competitively select a suitable P2P Energy Trading using Blockchain technology, implementation partner for NOIDA POWER COMPANY LIMITED (here in after to be referred to as NPCL). This RfP therefore, defines the comprehensive physical and technical requirements of NPCL within the overall framework. It is to ensure that Bidder is able to propose an elegant future proof solution meeting NPCL's requirements, estimate the costs and offer the most cost-effective solution.

Bidders are advised to study this document carefully. This document must be read entirely. Please verify that you have a complete copy. Submission of your proposal on RfP shall be deemed to have been done after careful study and examination of this document with full understanding of its implications. This RfP document is not transferable.

This RfP is being issued for engaging Service Provider having the requisite competency for Implementing P2P Energy Trading using Blockchain for NPCL for all current and future products of NPCL. RfP can be downloaded from NPCL official website by agencies interested for participation.

This RFP is neither an agreement nor an offer and is only an invitation by NPCL to the interested parties for submission of bids. The purpose of this RFP is to provide the Bidder(s) with information to assist the formulation of their proposals. This RFP does not claim to contain all the information each Bidder may require. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP and where necessary obtain independent advice. NPCL makes no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this RFP. NPCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP.

2. NOIDA POWER COMPANY LIMITED

Noida Power Company Limited distributes power in Greater Noida, near Delhi in Uttar Pradesh, which is being developed as an industrial hub and an urban township. The Company reaches out to a population spread across hamlets, villages and a new township spanning an area of more than 335 sq. km. The Company is a joint venture between the RP-Sanjiv Goenka Group, a leading business house in India and Greater Noida Industrial Development Authority, an autonomous body of U.P. Government responsible for town planning and infrastructure development. The venture marks the strategic entry of the Group into privatized distribution of electricity in North India. The Company started its operations in December 1993.

The Company maintains and operates round-the-clock emergency services to deal with supply-related complaints and undertake rectification works. The facilities have been reinforced by establishing a Call Centre that provides trouble call monitoring and 24-hour messaging services to consumers.

Complaint management is computerized, enabling call tracking from start to finish and generation of 'exception' reports. Organizational processes and hierarchical responsibilities are designed to meet the demand for service in every aspect.

3. Background Information

NPCL is committed to implement new technologies and forward the benefits gained to its consumers / customers. One such initiative is P2P (Peer to Peer) Energy Trading using Blockchain technology. Blockchain is a digital distributed, decentralized, public ledger that exists across a network. NPCL has more than 200 rooftop solar powered consumers with an aggregated capacity of 24000 kW and constantly increasing.

These consumers can trade excess energy generated to other consumers in NPCL License area and Blockchain as a technology will provide a platform for the trading, as it is a completely secure for financial transactions, also features like Smart contracts and distributed ledger can keep track of all the transactions and reduce manual efforts for maintaining such transactions.

4. Purpose of this Project

Purpose of this project is to explore and start a pilot project for the Implementation of Peer to Peer (P2P) energy trading using Blockchain in its license area. Pilot project shall confirm the feasibility, scalability and technical aspects of integrating the technology with existing IT infrastructure. The intent is to extend same solution to our Solar net metering consumers as prosumers and other consumers to be a part of this initiative and be benefited upon successful completion of pilot project.

5. Calendar of events

The following is a tentative schedule that will apply to this RfP, but may change in accordance with NPCL's needs or unforeseen circumstances:

Events	Target Date
Issuance of RfP	12 th Jan 2022
Submission of Technical Questions / Queries	19 th Jan 2022
Meeting with the Bidders on requirement basis (preferred mode Online)	28 th Jan 2022
Issuance of Addenda by NPCL, if required	3 rd Feb 2022
Presentation by the shortlisted Bidders on their technical solution offering	8 th to 11 th Feb 2022
Submission of Techno-Commercial Offer	18 th Feb 2022

SECTION-II GENERAL FEATURES

Below mentioned are the general features anticipated for P2P energy trading using Blockchain solution proposed by the bidder, which are categorically stated. The bidder is however required to submit the best technical proposal offering better features apart from these, which will impact the technical evaluation.

1. Technical Requirements

- 1.1 A trading platform with no limitations of number of participating entities and number of transactions (A web App development)
- 1.2 Peer-to-Peer energy trading screens for Prosumers and consumers
- 1.3 Screens to monitor the transaction by DISCOM
- 1.4 Development of smart-contracts for peer-to-peer trading.
- 1.5 Development of a common web-app
- 1.6 Consumer On-barding, Off-boarding
- 1.7 User creation and Authorisation
- 1.8 Use of NPCL payment API for all online payment transactions
- 1.9 Payment Mechanism, operation of wallet for buying entities
- 1.10 Identification and Implementation of transaction mechanism between Prosumer, Consumer and Discom and Settlement criteria
- 1.11 Maintenance of the ledger and review of records
- 1.12 Implementation of DISCOM Incentive on every Buy / Sell
- 1.13 Integration / import of meter data in block chain application
- 1.14 Smart contract GUI to modify the contract / create new contract / amendment
- 1.15 Creation of various nodes from where data and transactions can be monitored
- 1.16 Implementation and integration of required databases for locally storing data and reporting
- 1.17 Commissioning of Private Blockchain network required for the pilot.
- 1.18 Submission of the detailed project Report
- 1.19 Iterative unit testing and quality verification
- 1.20 P2P Energy Trading using Blockchain shall have relevant storage for logs for all transactions comprising of successful, Un-successful and detailed information about the transactions at all nodes.

SECTION-III INSTRUCTION TO BIDDER

A. GENERAL

1. Scope of Bid

1.1 In support of the Invitation for Bids indicated in the Bid Data Sheet (BDS), NPCL, as indicated in the BDS, issues this Bidding document for the Implementation of P2P energy Trading-using Blockchain thereto as specified in the Scope of Work.

2. Ethical Practices

2.1 NPCL requires Bidders to observe the highest standard of ethics during the procurement and execution of such contracts.

2.2 The following definitions apply:

- "Corrupt practice" means the act of offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence the action of any party in the procurement process or execution of contract;
- "Fraudulent practice" means a misrepresentation or omission of facts in order to influence the procurement process or the execution of contract;
- "Collusive practices" means the scheme of arrangement between two or more Bidders, with or without the knowledge of NPCL, designed to influence the action of any party in the procurement process or the execution of the contract;
- "Coercive practices" means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in the procurement process, or affect the execution of contract;
- NPCL will reject a proposal for the award of Contract if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract.
- NPCL will declare a firm ineligible, either indefinitely or for a stated period of time, for awarding the contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, the contract.

2.3 Any communication between the Bidder and NPCL related to matters of alleged fraud or corruption must be made in writing. By signing the contract, the Bidder shall represent that it is either the owner of the Intellectual Property Rights (IPR) in the services offered, or that it has proper authorization and/or license to offer them from the owner of such rights. Wilful misrepresentation of these facts shall be considered a fraudulent practice subject to the provisions of Clauses above, without prejudice to other remedies that NPCL may take.

3. Eligible Bidders

- 3.1 The Bidder should possess the requisite experience, resources and capabilities in providing the services necessary to meet the requirements, as described herein. The Bidder should also possess the technical know-how and the financial wherewithal that would be required to complete the scope of work. The Bid must be complete in all respects and should cover the entire Scope of Work as stipulated in the document. Bidder not meeting the Eligibility Criteria (NPCL's sole discretion being binding) will not be considered for further evaluation.
- 3.2 The Bidder should be competent to provide the solution (P2P Energy Trading using Blockchain), in the event the Bidder is not able to provide solution, the Bidder should endeavour to have strategic tie ups with such other vendor who is competent to provide the solution which the Bidder is not able to provide as per the Scope of Work of the RFP. The Bidder tying up with the other vendor shall be considered as the Principal Bidder who would provide the complete holistic solution (P2P Energy Trading using Blockchain) to NPCL as per Scope of Work of the RFP, who would be the one-point contact for NPCL.
- 3.3 The Principal Bidder shall be solely responsible for providing the complete solution to NPCL. Further, such Principal Bidder shall at all times ensure that no lacuna/deficiency/shortcoming of any nature is faced by NPCL due to such strategic tie up. The Principal Bidder shall indemnify NPCL for and against any claims/losses/damages/expenses, if any, claimed or levied on NPCL by any third party or vendor with whom the Bidder will have strategic tie up to meet the purpose of the RFP.
- 3.4 For purpose of abundant clarity, the Bidder/Principal Bidder interchangeably as the case may be shall be read and interpreted as Bidder.

4. Eligibility Criteria

- 4.1 The Bidder should possess the requisite experience, resources and capabilities in providing the services necessary to meet the requirements, as described in the RFP document. Bidder not meeting the Eligibility Criteria will not be considered for further evaluation. The invitation for engaging service provider for Implementing P2P Energy Trading using Blockchain for NPCL is open to all Bidders who qualify the Eligibility Criteria's as provided in a format in **Annexure – 1**. Also few of them are listed below.
- a. The Bidder should be a Company registered under the Companies Act/ Partnership / LLP since the last three years.
 - b. In case the Bidding Company is the result of a merger / acquisition, at least one of the merging companies should have been in operation for at least 3 years as on date of submission of the bid.
 - c. In case the Bidding Company is the result of a demerger / hiving off, at least one of the demerged company or resulting company should have been in operation for at least 3 years as on the date of submission of bid.
- 4.2 The Bidder should have minimum annual turnover of INR 10 Crores during the last two (2) financial years (2019-20 and 2020-21) or calendar years 2019

and 2020 or bidder's financial years. (In case the balance sheet of 2020-21 is not audited, the financial years 2018-19 and 2019-20 or calendar years 2018 and 2019 or last 2 bidder's financial years to be provided).

- a. In case the Bidding Company is the result of a merger / acquisition, due consideration shall be given to the past financial results of the merging entity for the purpose of determining the net worth, minimum annual turnover and profit after tax for the purpose of meeting the eligibility criteria; should the Bidding Company be in operation for a period of less than 3 years. For this purpose, the decision of NPCL will be treated as final and no further correspondence will be entertained on this.
 - b. In case the Bidding Company is the result of a demerger / hiving off, due consideration shall be given to the past financial results of the demerged company for the purpose of determining the net worth, minimum annual turnover and profit after tax for the purpose of meeting the eligibility criteria; should the Bidding Company be in operation for a period of less than 3 years. For this purpose, the decision of NPCL will be treated as final and no further correspondence will be entertained on this.
- 4.3 The Bidder should not be currently blacklisted by any bank / institution in India or abroad.
- 4.4 The Bidder should be authorized to quote for the OEM products and support.
- 4.5 The Bidder must provide reference of at least one client for whom the Bidder has successfully implemented P2P energy Trading using Blockchain as per the format provided in **Annexure -2**.

5. Supporting Documents to be submitted in view of above-mentioned criteria

Following documents are to be furnished by the Bidder as well as by all Subcontractors, in case of bidding by a consortium:

- 5.1 Full address of the registered office and established office in Delhi/NCR, if any.
 - a. Articles of Memorandum of Association or Partnership Deed or proprietorship deed as the case may be.
 - b. Registration certificate under Indian Companies Act.
- 5.2 Audited balance sheets of any of the last 3 years indicating turnover.
- 5.3 Copies of work orders & completion certificates for work completed during past 3 years' time period from bid opening date stating the scope of work to confirm minimum relevant experience.
- 5.4 Valid certification of partnership for implementation of relevant software applications.
- 5.5 Any other document, as per the eligibility criteria.
- 5.6 Documentary evidence must be furnished against each of the above criteria along with an index. All documents must be signed by the authorized signatory of the Bidder. Documentary proof for financial criteria must also be signed by a chartered accountant. If the bid is not accompanied by all the required documents, the same would be rejected.

- 5.7 Undertaking for subsequent submission of any of the above document will not be entertained under any circumstances. However, NPCL reserves the right to seek a fresh set of documents or seek clarifications on the already submitted documents.
- 5.8 Along with all the above mentioned document bidder has to provide the compliance sheet as per the format provided in **Annexure – 1**.

B. CONTENTS OF BIDDING DOCUMENTS

6. Clarification of Bidding Document

- 6.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact NPCL in writing at NPCL's address indicated in the Bid Data Sheet (BDS). NPCL shall forward copies of its response to all Bidders who have acquired the Bidding Document directly from it, including a description of the inquiry but without identifying its source.
- 6.2 NPCL will organize a meeting one to one basis, if desired by the bidder. The Bidder shall seek the appointment in that regard. The Clarifications sought by all the bidders shall be compiled and forwarded to all the bidders with clarifications.

7. Amendment of Bidding Document

- 7.1 At any time prior to the deadline for submission of the Bids or the award of the contract, NPCL may amend the Bidding Document by issuing addenda.
- 7.2 NPCL, at its discretion for any reason whether at its own initiative or in response to a clarification requested by a Bidder may add, modify or remove any element of the P2P Energy Trading using Blockchain implementation or any part thereof from the bid document till the time of award of contract. All Bidders will be notified of any such change.
- 7.3 In order to provide prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, NPCL may, at its discretion, extend the last date for the receipt of Bids.
- 7.4 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from NPCL.
- 7.5 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, NPCL may, at its discretion, extend the deadline for the submission of the Bids.

C. PREPARATION OF BIDS

8. Cost of Bidding

- 8.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid and NPCL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. Bidder should also appraise itself about the other pre requisites as required prior to submission of the bid at its own cost. No further queries shall be entertained.

9. Language of Bid

9.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and NPCL, shall be written in the English. Supporting documents and printed literature that are part of the Bid 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 Bid, such translation shall govern.

10. Documents Comprising the Bid

10.1 The Bid shall comprise two envelopes submitted simultaneously, one containing the Technical Proposal and the other the Price Proposal, enclosed together in an outer single envelope.

10.2 Initially, only the Technical Proposals shall be opened. The Price Proposals remain sealed and held in custody by NPCL. The Technical Proposals shall be evaluated by NPCL as per Evaluation Parameters defined in this RfP. No amendments or changes to the Technical Proposals are permitted. Bids with Technical Proposals which do not conform to the mandatory requirements will be termed as non-compliant and will not be evaluated further. Commercial proposal shall be opened only of the technically qualified bidders by NPCL on its own and not in presence of participating agencies.

10.3 Upon Evaluating the Technical and Commercial bids and based on subsequent discussion with the short listed bidders, If NPCL found that there is significant modification in technical scope then the selected bidder(s) will be asked to submit the revised commercial offer. If there is only minor change in technical scope, then either the bidder will have to comply with the additional requirement within the quoted price or NPCL shall ask to submit only the additional quoted price as response to addendum in technical scope.

10.4 The Technical Proposal shall contain the following:

- a. Technical Proposal submission sheet;
- b. Written confirmation authorizing the signatory of the bid to commit the Bidder;
- c. Documentary evidence establishing the Bidder's eligibility to bid;
- d. Documentary evidences establishing the Bidder's qualification to perform the contract if its bid is accepted as well as evidence to conform the related services;
- e. Interface and integration methodology;
- f. Implementation methodology including project governance;
- g. Any other document required in the BDS.

10.5 The Price Proposal shall contain the following:

- a. Price Proposal Submission Sheet and the applicable Price Schedules and the further break up of manpower cost.
- b. Bidder can quote for the integration requirement as per different methodology i.e. File based integration / API based integration.
- c. Any other document required in the BDS.

11. Bid Submission Sheets and Price Schedules

- 11.1 The Bidder shall submit the Technical Proposal and the Price Proposal using the appropriate Submission Sheets provided in Section IV. These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
- 11.2 The Bidder shall submit, as part of the Price Proposal, the Price Schedules for P2P Energy Trading using Blockchain implementation, Maintenance and support of the same.
- 11.3 The Bidders should take note that the Price Proposal should clearly indicate the price to be charged without any qualifications whatsoever and should include all taxes (GST etc.), duties (customs, etc.), fees, levies, and other charges as may be applicable, to be paid pre- or post-delivery or to be deducted by NPCL at source, in relation to the P2P Energy Trading using Blockchain. The Bidder will provide Tax rates assumed for the calculation at the time of proposal for each item.

12. Alternative Bids

- 12.1 Alternative (alternate technology/architecture/design/functionality or proposals with multiple options) bids shall be rejected.
- 12.2 Although on-premises model is preferred by NPCL for P2P Energy Trading using Blockchain deployment, but bidder may also propose for cloud model i.e. Software-as-a-Service model along with commercial proposal thereof. The technical proposal for the above shall be furnished with implied benefits with complete clarity of proposed solution deployment architecture, license, and warranty and upgradation compatibility. The roadmap against each solution model shall be presented by the bidder.

13. Bid Prices and Discounts

- 13.1 The prices quoted by the Bidder in the Price Proposal Submission Sheet and in the Price Proposal shall conform to the requirements specified.
- 13.2 All items must be listed and priced Schedule if not priced; their prices shall be assumed to be included by the Bidder in the prices of other items.
- 13.3 If an item is not listed in the Price Schedule, it shall be assumed to be included in the Bid.
- 13.4 Prices quoted by the Bidder must be firm and final and shall remain constant throughout the period of the contract and shall not be subject to any upward modifications,
- 13.5 The Bidders are advised not to indicate any separate discount. If any discounts are there, then it should be merged with the quoted prices. Discount of any type, indicated separately, will not be taken currencies of Bid Documents establishing the eligibility into account for evaluation purpose. However, in the event of such an offer, without considering the separate discount, is found to be the lowest, NPCL shall avail such discount at the time of award of contract.

14. Currencies of Bid

- 14.1 Bidders have to express their bid price in Indian Rupees only.

15. Penal Clause

15.1 If any amount of credit, refund or any other benefit is denied or delayed to the NPCL or any penal charge is imposed on the NPCL due to any non-compliance by the Supplier (including but not limited to the failure to upload or incorrect disclosure of details on the GSTN portal or delay/ failure to deposit tax or due to non-furnishing or furnishing of incorrect/ incomplete documents by the Supplier), wrong determination of nature of supply, the Supplier shall be liable to reimburse/ recover the loss which accrues to the NPCL on the aforesaid account. Alternatively, NPCL shall be entitled to withhold the payment of all the subsequent bills issued by the Supplier.

16. Documents Establishing the Eligibility of the Bidder

16.1 To establish their eligibility, Bidders shall complete the eligibility declarations in the Bid Submission Release of the Bidder Sheet.

17. Documents Establishing the Conformity of the P2P ENERGY TRADING USING BLOCKCHAIN Implementation Services

17.1 To establish the conformity of the P2P Energy Trading using Blockchain implementation related Services to the Bidding Document, the Bidder shall furnish as part of its Technical Proposal the documentary evidence against the related Services.

17.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed description of the essential technical and performance characteristics of the P2P Energy Trading using Blockchain implementation related Service, demonstrating substantial responsiveness of the same to those requirements.

17.3 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by NPCL in the Scope of Work, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to NPCL's satisfaction, that the substitutions ensure substantial.

18. Documents Establishing the Qualification of the Bidder

18.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Proposal the evidence indicated for each qualification criteria, Eligibility Criteria. However, only those Bidders which have been selected by NPCL shall be eligible to bid. Selection of Bidder is the sole prerogative of NPCL and no questions shall be asked. The decision of NPCL management shall be final in this regard.

19. Period of Validity of Bids

19.1 Bids shall remain valid for the period of 90 days after the bid submission deadline date prescribed by NPCL. A Bid valid for a shorter period shall be rejected by NPCL as non-responsive.

19.2 In exceptional circumstances, prior to the expiration of the bid validity period, NPCL may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. A Bidder granting the request shall not be required or permitted to modify its Bid.

D. SUBMISSION AND OPENING OF BIDS

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the Technical Proposal and one original of the Price Proposal and clearly mark each "ORIGINAL – TECHNICAL PROPOSAL" and "ORIGINAL - PRICE PROPOSAL". In addition, the Bidder shall submit 1 (one) copy of the Technical Proposal and the Price Proposal, in soft copy over e-mail as provided in Bid data sheet.

20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for un-amended printed literature, shall be signed or initialled by the person signing the Bid. Response Formats duly filled along with supporting documents shall be page numbered and stitched, book bound as one volume. Each page of the bid (along with the supporting documents including CVs) should be signed by the authorized signatory. Spiral/Spico bound documents with end sealed may also be accepted. The documents submitted in any other way is liable to be rejected.

20.3 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Bid.

21. Sealing and Marking of Bids

21.1 The Bidder shall enclose the original of the Technical Proposal, the original of the Price Proposal, duly marking the envelopes as "ORIGINAL - TECHNICAL PROPOSAL", "ORIGINAL – PRICE PROPOSAL" as appropriate. These envelopes containing the original Technical and Price proposal shall then be enclosed in one single envelope.

21.2 The inner and outer envelopes shall:

- a) Bear the name and address of the Bidder;
- b) Be addressed to NPCL

21.3 The outer envelopes and the inner envelopes containing the Technical Proposals shall bear a warning not to open before the time and date for the opening of Technical Proposals.

21.4 The inner envelopes containing the Price Proposals shall bear a warning not to open until advised by NPCL.

21.5 If all envelopes are not sealed and marked as required, NPCL will assume no responsibility for the misplacement or premature opening and resultant disqualification of the bid.

22. Deadline for Submission of Bids

- 22.1 Bids must be received by NPCL no later than the date and time, and at the address indicated in the BDS – Section IV.
- 22.2 NPCL may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document, in which case all rights and obligations of NPCL and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

- 23.1 NPCL shall not consider any Bid that arrives after the deadline for submission of Bids, Any Bid received by NPCL after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

- 24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written Notice, duly signed by an authorized representative, and shall include a copy of the authorization. The corresponding substitution or modification of the bid must accompany the respective written notice.
- 24.2 Bids requested to be withdrawn before the corresponding due date shall be returned unopened to the Bidders.
- 24.3 No Bid shall be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified or any extension thereof.

E. EVALUATION AND COMPARISON OF BIDS

25. Confidentiality

- 25.1 Information relating to the examination, evaluation, comparison and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process.
- 25.2 Any attempt by a Bidder to influence NPCL in the examination, evaluation, comparison, and post qualification of the Bids or Contract award decisions may result in the rejection of its Bid.
- 25.3 From the time of opening the Technical Proposals to the time of Contract award, if any Bidder wishes to contact NPCL on any matter related to the bidding process, it should do so in writing or via e-mail as specified.

26. Cyber Security Standards

- 26.1 Bidder will be required to abide by the relevant cyber security standards / regulations / requirements / guidelines, which would be applicable to the conduct of the transactions contemplated under this Order, including, without limitation -
- a. Regulatory provisions as may be applicable from time to time,

- b. Cyber security measures and resultant software patching and upgrade consequent upon upgrade of systems and procedures with a view to ensuring security of transactions,
- c. Maintenance, protection, confidentiality and such other requirements with respect to transaction data as may be imposed by any regulatory or standards authority.

27. Clarification of Bids

27.1 To assist in the examination, evaluation, comparison and post-qualification of the Bids, NPCL 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 NPCL shall not be considered. NPCL's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by NPCL in the evaluation of the Price Proposals.

28. Responsiveness of Technical Proposal

28.1 NPCL's determination of the responsiveness of a Technical Proposal is to be based on the contents of the Technical Proposal itself.

28.2 A responsive Technical Proposal is one that conforms to all the mandatory requirements, terms, conditions, and specifications of the Bidding Document without service deviation, reservation, or omission. A service deviation, reservation, or omission is one that:

- a) Does not meet all the mandatory requirements
- b) Affects the scope, quality, or performance of the P2P Energy Trading using Blockchain implementation related activities specified in the Contract;
- c) Limits or is inconsistent with the Bidding Document, NPCL's rights or the Bidder's obligations under the Contract; or
- d) If rectified would unfairly affect the competitive position of other Bidders presenting responsive Technical Proposals.

28.3 If a Technical Proposal is not responsive to the Bidding Document, it shall be rejected by NPCL and shall not subsequently be made responsive by the Bidder by correction of the service deviation, reservation, or omission.

29. Non conformities, Errors, and Omissions

29.1 Provided that a Technical Proposal is responsive, NPCL may waive any non-conformity or omission in the Bid that does not constitute a service deviation.

29.2 Provided that a Technical Proposal is responsive, NPCL 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 Proposal related to documentation requirements. Such omission shall not be related to any aspect of the Price Proposal of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

29.3 Provided that a Technical Proposal is responsive, NPCL will rectify nonmaterial nonconformities or omissions. To this effect, the Bid Price shall

be adjusted during evaluation of Price Proposals, for comparison purposes only, to reflect the price of the missing or non-conforming item or component.

29.4 Provided that the Technical Proposal is responsive, NPCL will correct arithmetical errors during evaluation of Price Proposals on the following basis:

- a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and survey quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of NPCL 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;
- b) 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; and
- c) 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 a) and b) above.
- d) If there is a discrepancy between percentage and figures related to various taxes or levies, the percentage shall prevail over figure mentioned. However, where the amount expressed in percentage is related to an arithmetic error, the amount in figures shall prevail subject to a) and b) above. It should also be noted that at time of payment against, the prevailing tax/levy rates will be used as on the date of approval of payment.
- e) Except as provided in sub-clauses a) to c) herein above, NPCL shall reject the Price Proposal if the same contains any other computational or arithmetic discrepancy or error.

29.5 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified.

30. Post qualification of the Bidder

30.1 NPCL shall compare all responsive bids to determine the bid with the maximum score.

30.2 NPCL shall determine to its satisfaction during the evaluation of Technical Proposals whether Bidders are qualified to perform the Contract satisfactorily.

30.3 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder and on the basis of further technical presentation which would be sought only from the few selected Bidders.

30.4 An affirmative determination in accordance with this clause shall be a prerequisite for the opening and evaluation of a Bidder's Price Proposal. A negative determination shall result into the disqualification of the Bid, in which event NPCL shall return the unopened Price Proposal to the Bidder.

31. NPCL's Right to Accept Any Bid, and to reject any or All Bids

31.1 NPCL reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to Contract award,

without thereby incurring any liability to the Bidders and also providing any justification.

32. Evaluation Criteria

- 32.1 NPCL will examine & scrutinize all the documents and details in accordance with the requirements of the RfP.
- 32.2 If any of the documents under Techno-Commercial bid are not found to be complying with the requirement of the bid document, the bid will be considered as non-responsive and Price Bid of the corresponding bid will not be opened for further evaluation.
- 32.3 The bid of only responsive Bidders shall be eligible for opening of Price Bids.
- 32.4 Initially the Technical/qualifying bid will be opened. The documents will be examined & scrutinized as per terms & conditions of the RfP.
- 32.5 NPCL may conduct clarification meetings with each or any Bidder to discuss any matters, technical, commercial or otherwise, where NPCL requires amendments or changes to be made to the Proposal.
- 32.6 Any effort by the Bidder to influence NPCL in the evaluation of Proposals, bid comparison or the decisions on acceptance or rejection of bids, may result in the rejection of the Bidder's bid.
- 32.7 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.
- 32.8 Notwithstanding to above, NPCL reserves the right to accept minor deviations which do not materially affect the substantial responsiveness of bid whose rectification would not affect unfairly competitive position of other Bidders, and which can be rectified after award of contract without change of price, scope, quality & performance of the works.
- 32.9 Sheet containing Technical evaluation criteria is mentioned in **Annexure 3**.

F. AWARD OF CONTRACT

33. Award Criteria

Contract shall be awarded based on the selection criteria as per following:

- 33.1 Evaluation Criteria mentioned in Annexure-3.
- 33.2 Apart from above the final award of the contract will be as per sole discretion of NPCL management.
- 33.3 An Evaluated Bid Score (B) will be calculated for each responsive bid using the following formula, which permits a comprehensive assessment of the bid price and the technical merits of each bid.

$$B = (C_{low}/C) \cdot X + (T/T_{high}) \cdot (1-X)$$

Where

C = Evaluated Bid price

C_{low} = Lowest of all Evaluated Bid Price among responsive bids

T = Total Technical Score awarded to the bid

T_{High} = Highest Technical score achieved by the bid among all responsive bids

The Bid with highest Evaluated Bid Score (B) among responsive bids shall be termed the Lowest Evaluated Bid and is eligible for Contract award, provided the Vendor was pre-qualified and/or it was found to be qualified to perform the Contract.

The Technical-to-Financial weight-age ratio would be 60:40. Hence X=0.40

34. Signing of Contract

34.1 The successful Bidder shall provide an undertaking that the key staff identified for the project (as submitted in its bid proposal) shall be available for the respective proposed work requirement, anytime during the duration of the project, till its successful completion.

34.2 Once the PO is placed to a successful bidder, the same has to be returned by signing by authorised signatory within 3 days otherwise it is considered as deemed accepted.

35. Local Conditions

It will be imperative on each Bidder to fully inform himself of all local conditions and factors, which may have any effect on the execution of the works covered under these documents and specifications. NPCL shall not entertain any request for clarifications from the Bidder, regarding such local conditions. It must be understood and agreed that such factors have properly been investigated and considered while submitting the proposals. No claim for financial adjustment to the contract awarded under these specifications and documents will be entertained by NPCL. Neither any changes in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted by NPCL, which are based on the lack of such clear information or its effect on cost of the work to the Bidder.

SECTION-IV BID DATA SHEET (BDS)

A. Introduction	
1.	The Purchaser is: Noida Power Company Limited Address: Knowledge Park-IV, Behind Wipro Technologies, Greater Noida-201310 India Phone: T- 0120-2333545 Extension-4403, M +91 9990046410, Fax: +91 1202326448 Email: vshandilya@noidapower.com; PKGoyal@noidapower.com
2.	The name of the ICB(Industry Classification Benchmark) is: The identification number of the ICB is:
B. Bidding Document	
3.	For clarification purposes only, the Purchaser's address is: Noida Power Company Limited, Knowledge Park-IV, Behind Wipro Technologies, Greater Noida-201310 India Phone: T- 0120-2333545 Extension-4403, M +91 9990046410 Fax: +91 1202326448 Email: vshandilya@noidapower.com; PKGoyal@noidapower.com Pre-bid queries may be submitted to : Vivek Shandilya, Manager (Automation)
C. Preparation of Bid	
4.	The language of the Bid is: English
5.	The Bidder shall submit its Technical Proposal.
6.	The Bidder shall submit its Price Proposal.
7.	Alternative Bids shall not be permitted
8.	The prices quoted by the Bidder shall be: Firm
9.	Bidders shall have to express their bid price in INR. Wherever reference to "Rupees" or "Rs" as currency has been made, the same should be taken as "Indian Rupees".
10.	The bid validity period shall be 60 days after the bid submission deadline date prescribed by NPCL.
D. Submission and Opening of Bids	
11.	In addition to the original of the Bid, the number of copies is: One
12.	For bid submission purposes only, the Purchaser's address is : Noida Power Company Limited, Knowledge Park-IV, Behind Wipro Technologies, Greater Noida-201310 India
13.	The deadline for bid submission is Date: 18 th February 2022 Time: 5:00 PM Wherever reference to "Time" has been made, the same shall be taken as Indian Standard Time. If time is mentioned in "P.M", the same shall be converted into Hours by adding 12 Hours e.g. 2 P.M equal to 2 + 12 i.e. "14.00 Hours IST"
F. Award of Contract	
14.	If the successful Bidder fails to sign the Contract Agreement within 03 days from the date the successful Bidder's receipt of the Contract Agreement, NPCL reserves the right to terminate the award without any notice.

SECTION-V BIDDING FORMS

Technical Proposal Submission Sheet

Date: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda No. (If Any):
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule, the P2P Energy Trading using Blockchain implementation
- (c) Our Bid shall be valid for a minimum period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of 10 percent of the Contract Price for the due performance of the Contract. We are not participating, as Bidders, in more than one Bid in this bidding process in accordance with the Bidding Document;
- (e) Our firm, its affiliates or subsidiaries, including any subcontractors or Bidders for any part of the Contract, has not been declared ineligible by NPCL.
- (f) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
- (g) We understand that you are not bound to accept the best evaluated bid or any other bid that you may receive.
- (h) Technical Compliance sheet is attached.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Price Proposal Submission Sheet – Cloud based Model

Date: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda No. (If any):

We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule, the following P2P Energy Trading using Blockchain implementation related Services _____

(b) The total price of our Bid is (Exclusive of the GST):

(c) Total Applicable GST of our Bid is: _____

(d) Total Price Inclusive of GST of our Bid is: _____

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Price Proposal Submission Sheet – On Premise Model

Date: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda No. (If any):

We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule, the following P2P Energy Trading using Blockchain implementation related Services _____

(b) The total price of our Bid is (Exclusive of the GST):

(c) Total Applicable GST of our Bid
is: _____

(d) Total Price Inclusive of GST of our Bid
is: _____

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Certificate as to Corporate Principal

CERTIFICATE AS TO CORPORATE PRINCIPAL

(To be signed by any of Board Directors or Company Secretary)
(To be accompanied along with requisite copy of the board resolution)

I _____ certify that I am _____ of the Company under
the laws of _____ and that
_____ who signed the above Bid is authorized to bind the Company /
Firm by authority of its governing body.

Signature: _____

Full Name: _____

Address: _____

SECTION VI SCOPE OF WORKS

1. Outline of Scope of Works

- 1.1 A trading platform with no limitations of number of participating entities and number of transactions (A web App development)
- 1.2 Development of a common web-app
- 1.3 Peer-to-Peer energy trading screens for Prosumers and consumers
- 1.4 Multiple trading models
- 1.5 Assessment of different trading models
- 1.6 Screens to monitor the transaction by DISCOM
- 1.7 Adding of new consumer, Prosumers and Approval Mechanism
- 1.8 Development of smart-contracts for peer-to-peer trading
- 1.9 Functionality to change Tariff as per regulatory guidelines
- 1.10 Identification and Implementation of transaction mechanism between Prosumer, Consumer & Discom along with Settlement criteria
- 1.11 Maintenance of the Distributed Ledger and review of records
- 1.12 Various Reports / dashboard for review the transactions
- 1.13 Implementation of DISCOM Incentive on every Buy / Sell
- 1.14 Option of modification in Discom incentive as per requirements or change in future
- 1.15 Smart contract GUI to modify the contract / create new contract / amendment
- 1.16 Commissioning of all the IT hardware upon making them compatible to work as blockchain node
- 1.17 Bidder has to provide all software product and relevant licenses.
- 1.18 Penalty mechanism for Prosumers for non-adherence to Utility guidelines or not meeting the energy selling obligations as per contract with consumer
- 1.19 Time based bid expiry functionality
- 1.20 Selection of single or multiple prosumers for trading
- 1.21 Functionality to view / show all the available prosumers
- 1.22 Invoice generation for prosumers and consumers
- 1.23 AI based energy forecasting
- 1.24 Creation of various nodes from where data and transactions can be monitored
- 1.25 Implementation and integration of required databases for locally storing data and also integration with meter data acquisition system, SAP billing system and online payment interface needed.
- 1.26 Commissioning of Private Blockchain network required for the pilot.
- 1.27 Iterative unit testing and quality verification
- 1.28 Adherence to information security guidelines
- 1.29 Coordination between stakeholders and taking necessary signoffs
- 1.30 Detailed billing data accessible to end users and NPCL
- 1.31 Functionality of data analysis like energy generated, unit sold, energy consumption etc.
- 1.32 Submission of Report containing the project findings, future roadmap and recommendations for commercial deployment of the project.

2. Integration Scope

Integration scope has been divided in two stages -

2.1 In first stage Consumer, details are required to be updated on Blockchain Trading platform – like consumer connection status, name load etc. through an API / web-service based integration

2.2 These details shall be required for on boarding and of boarding of consumers.

2.3 For the settlement stage two options can be considered

Option - 1

- a. Data from smart meters shall be made available on daily basis for consumption in Blockchain Trading platform through file based integration (csv, xml etc.) during the pilot period
- b. Settlement statement (csv, xml etc.) can be shared through a file to be consumed in NPCL Billing system
- c. Based on these trading settlement statement billing for Prosumer and consumer can be finalised.

Option – 2

- a. Data from smart meters can be shared with trading platform on real-time basis through API / web-service based integrations (post pilot period)
- b. Settlement statement can be for individual consumer and prosumer can be updated in NPCL billing system on defined frequency
- c. Based on this data update Final bill for the consumers and prosumers can be created.

2. Documentation

2.1 Project Charter containing Project Plan, Project Stakeholders details, Stakeholder's responsibilities, Resource requirement and Resource availability from all the stakeholders.

2.2 Process work flow and user manuals

2.3 Technical manual to address the business as usual requirements along with training

2.4 Report through which at any point of time it can be established that the contract is immutable i.e. history report generated from various participating blockchain nodes upon signing in through different user ids.

2.5 Best international practices adopted at national and international level at regulatory and technology level and its suitability in NPCL context along with proving a workable model with necessary details to get that model operationalize

2.6 Creation of a final requirement document based on detailed information gathering during requirement gathering phase

2.7 Comprehensive documentation of architecture and other technical manuals relevant for managing, maintaining and enhancing the software, including manual for Configuration and Administration

2.8 Software deployment manual

2.9 Database Architecture with E-R diagram along with comprehensive data definitions

- 2.10 Functional and Technical specifications for configurations and enhancements carried out in software
- 2.11 API interface document
- 2.12 Integration design document
- 2.13 Record keeping – A log of challenges (Both technical and Social)
- 2.14 License Policy

3. Project and program management

- 3.1 End to end Project implementation and project management
- 3.2 Preparation of a detailed implementation plan with timelines linked to defined milestones which would include methodology of using Blockchain for power transactions, financial viability of performing peer to peer energy transactions using differential pricing
- 3.3 Preparation of the monitoring and results management framework

4. Final report to consist

- 4.1 Complete workflow for energy trading
- 4.2 Settlement mechanism
- 4.3 Software key features detail
- 4.4 Benefits sought from different features and settlement mechanism
- 4.5 Pilot project findings, recommendation for commercial deployment of this technology including ensuring scalability and detailing future roadmap which can be submitted to external stakeholders viz. UPERC
- 4.6 Suggested changes in Billing system in ERP
- 4.7 Recommendations as emerges out from the study for implementation of DSM and its impact on distribution business vis-à-vis advance scheduling requirements to be met with by both prosumer and Discom.
- 4.8 Suggestions for enabling regulatory framework within NPCL
- 4.9 Challenges – Technical and Social

5. Input from NPCL

- 5.1 Smart meters on site
- 5.2 Availability / Access of meter data for availability in Trading platform
- 5.3 Consume transactional data in NPCL billing platform for final bill preparation
- 5.4 Provide energy trading tariffs
- 5.5 Required access to systems to be integrated with P2P Energy Trading using Blockchain (as per the requirement)

6. Variation of Scope

- 6.1 NPCL will have full-undisputed discretionary rights to add or reduce the scope of work as per its requirements and Bidder will have to comply accordingly. Anytime during the contract period, NPCL may modify its business process/workflow as per its requirements and Bidder will have to comply with it without any adverse commercial implication.
- 6.2 In case modification of Scope of Work becomes necessary to achieve necessary business objectives and the impact is deemed to be marginal, Bidder will have to comply with it without any adverse commercial implication.

7. NPCL'S Right to Accept any BID and to Reject any or all BID(s)

7.1 NPCL reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders. NPCL is not liable to provide any justification.

8. System Architecture

8.1 Existing Architecture

It is a green field implementation hence there is no architecture as of now.

8.2 Proposed Architecture

Vendor has to propose the system architecture as per on premise and cloud based implementation though the preferred deployment is On-premise Model.

8.3 Hardware Requirements

- i. Bidder shall provide detailed hardware requirement for implementation of P2P Energy Trading using Blockchain Considering the Cloud based implementation and NPCL On premise implementation.
 - A) Hardware / virtualized infrastructure for on premise model will be provided by NPCL.
- ii. Bidder shall provide comprehensive bill of material against the hardware, software and other services clearly mapping the type of model deployment viz, on-premises and cloud model.
- iii. Disaster Recovery
 - A) Bidder shall consider DR (disaster recovery) site in mind while proposing solution so as to meet the reliability and availability of P2P Energy Trading using Blockchain data archive and recorded latest P2P Energy Trading using Blockchain intelligence. Accordingly, licensing policy and BOM shall be furnished.
 - B) Bidder has to provide the detailed methodology for ensuring 100% reliability and availability for existing data as well as historical data recovery.
- iv. While providing complete hardware requirement bidder has to consider the fail-safe infrastructure, to ensure smooth P2P Energy Trading using Blockchain functioning and minimal down time.

9. Licensing Policy

9.1 Bidder has to provide the details about the Licensing policy, categorically mentioning pre Go-Live and Post Go-Live licenses requirement as per implementation at NPCL.

9.2 Bidder shall provide and analyse the license required for current implementation as well future expansion of the P2P Energy Trading using Blockchain.

9.3 Bidder shall provide the licensing requirement as per the Cloud base model as well as NPCL on premise model implementation.

9.4 Licensing Policy methodology needs to be furnished i.e., primary type of licensing based on no. of Transactions, no. of Prosumers / consumers,

perpetual, hardware based, subscriptions based etc. The bidder while producing licensing policy shall also justify for the type of license proposed and relevance to future expansion or upgradation.

10. Support Requirement

- 10.1 Bidder shall provide details of L1, L2, L3 support matrix with detailed timeline based on the criticality of the incident.
- 10.2 Bidder shall provide a portal / web space / Email id where NPCL shall log the incident and SLA shall be counted from that instance. The issue logger shall be created by bidder which shall be accessible on 24X7 basis to NPCL for logging of issues. All such reported issues are to be resolved and/or escalated as per agreed L1, L2 and L3 level support. A summary report against the same shall be circulated on an agreed schedule basis to all of the bidder's and NPCL representatives and shall be the responsibility of the bidder.
- 10.3 Based on the criticality of the incident escalation matrix to be made available to NPCL.
- 10.4 SLA should be effective in Post Go-live phase of the project.
- 10.5 If even after the escalation of the incident, no solution is received from the implementation partner as per the SLA mentioned in point 13, Penalty clause shall be applicable.

11. Service Level Agreement

Vendor will be required adhere to the following Service level commitments:

- 11.1 For All type of cases the Response time would be within 6 working hours from Case logging time if call is logged between 08:00AM to 11:00AM.
- 11.2 For All type of cases the Response time would be within 12 working hours from Case logging time if call is logged after 11:00AM.
- 11.3 If part replacement / development is not required for resolution then resolution time would be
 - a. within 8 working hours for high priority cases from Case logging time.
 - b. If part replacement / development is required for resolution, then resolution time would be 24 working hours for medium or low priority from Case logging time.

Working hour shall be 10:00AM to 06:30PM

Service Level performance relating to Issue Resolution will be calculated as follows:

Service level= ((No. of calls closed on as per SLA/Total calls)*100)

Penalty Clause:

Following penalty clause will apply during warranty period if Service Level Commitment for issue Resolution as mentioned above is not complied with.

- If Service Level Performance < 90% then "10% of the PBG (Performance Bank Guarantee) value of order will be deducted"
- If Service Level Performance < 80% then "20% of the PBG value of order will be deducted"

- If Service Level Performance < 70% then "50% of the PBG value of order will be deducted"

Following penalty clause will apply during AMC period if Service Level Commitment for issue Resolution as mentioned above is not complied with:

- If Service Level Performance < 90% then "10% of the invoice value will be deducted"
- If Service Level Performance < 80% then "20% of the invoice value will be deducted"

Preventive, Routine maintenance, (General Cleaning & Health Check-up) of system shall be carried out on quarterly basis.

Escalation Contact Matrix

Bidder will provide a single point of contact for logging and tracking of all support calls.

- 1st level escalation
- 2nd level escalation
- Corporate level
- MD

Duration of SLA:

- This Service level agreement would be valid for entire period of contract including Warranty period and AMC if provided after the completion of warranty. This SLA may be reviewed and revised according to the procedures detailed in SLA Change Control.
- SLA Change Process: Both the parties may amend this SLA by mutual agreement. Changes can be proposed by either party. Normally the forum for negotiating SLA changes will be monthly review meetings at NPCL office.

12.AMC

12.1 Bidder has to provide details about the AMC i.e. Cost, methodology of costing, tasks / responsibilities covered etc.

12.2 All these details have to be provided during the bidding process.

12.3 Accordingly, AMC may be awarded post completion of warranty period.

13.Support to be provided by NPCL

13.1 NPCL shall provide support in requirement gathering phase

13.2 NPCL shall provide support in finalizing the P2P Energy Trading using Blockchain process flows and integration points.

13.3 NPCL shall provide required access through web services to NPCL ERP and MDM system.

13.4 Hardware provisioning as required in case of on premise deployment.

14.Implementation Methodology

14.1 Collect all the information / requirements based on the use cases identified for implementation

14.2 Categorization of the requirements

14.3 Process flow identification for the implementation of P2P Energy Trading platform using Blockchain

- 14.4 Identification of the integration requirement
- 14.5 Development of the methodology for the Training of P2P Energy Trading using Blockchain
- 14.6 Bidder has to provide detailed integration methodology in the bidding document.
- 14.7 Interface for accessing NPCL database and writing NPCL database should be defined in technical bid.

15. Documents Required for Project Initiation

Once the contract is awarded following documents to be prepared in coordination with NPCL:

- 15.1 Project Charter
- 15.2 Detailed Project implementation Plan
- 15.3 Requirement Traceability matrix (RTM)

16. Training

- 16.1 Training of resource assigned from the NPCL side on the application and platform.
- 16.2 Training of resource assigned from the NPCL side operational and technical maintenance as well as enhancement/ development of the system.
- 16.3 Bidder is expected to see to it that required service level qualities of P2P Energy Trading using Blockchain maintenance is achieved and maintained.
- 16.4 Bidder will be responsible for making all his resources available for the training for P2P Energy Trading using Blockchain.
- 16.5 Bidder should be constantly in touch with NPCL to get the feedback for the service quality, prepare, and act on the solution thereof.
- 16.6 In addition to the scope envisaged in RfP document for trainings and documentation, followings will be part of scope:
 - a. The selected Bidder will provide the training on the various functionalities, Administration, Configuration, troubleshooting and procedure of learnings of P2P Energy Trading using Blockchain to the users of NPCL as per requirements.
 - b. The training shall be conducted by experienced instructors.
 - c. Bidder in consultation and convenience of NPCL shall workout the training program and all the other modalities of the training.
 - d. The training shall be conducted at sites to be specified by NPCL in Greater Noida area.
 - e. Bidder to conduct a training need analysis to determine the training and development needs for all the job roles that will be affected by NPCL technology initiatives. This will result in Training and Development plan including -
 - 1) The training requirements functional and Technical user group.
 - 2) Recommendations on the most appropriate training delivery methods and channels.
 - 3) Identification of the criteria for training success along with any challenges and risks.

- 4) Knowledge sharing strategy to enable to perform future customizations internally.
- 5) Content Development: Development of customized, modular training materials based upon user roles and business processes and customized application. The following material will be developed:
 - Paper Based Class room Participant guides,
 - Paper Based Class room Instructor guides,
 - Media Based training simulations for pre-class preparation
- 6) Documents like User manual for users and administrators.

17. Testing and Acceptance Procedures

Testing and quality assurance in system development is more rigorous since each part has to be more reliable, if it is to be reused. A system is tested at various stages of development e.g. each component is tested as a unit for checking the correctness of its own criteria. Further, the component is tested with its dependent components. After final release of the entire set of components, system is tested for the correctness of system functionality. Finally, the components are further tested in simulated production load for performance and load analysis. The Lead Partner along with consortium partners shall be responsible for the testing processes such as planning (includes preparing test plans and defining roles and their responsibilities), preparation (consists of preparing test specification, test environment and test data) and execution (includes testing at various levels like unit level, integration level, system level and production).

17.1 Test Plan

Test plans are prepared for each phase of testing. The initial test plan is created during the Project Planning phase. The initial test plan describes who performs which type of testing and when. Ideally master test plan covers all types of test i.e. from unit testing to production testing. The Implementation Partner is expected to submit the test plans to NPCL for approval. Any changes made to the test plan during the project life cycle should be communicated to NPCL for approval. Test plans contains following items:

- 1) Roles and responsibilities of test team
- 2) Approach to testing
- 3) Function testing
- 4) Security testing
- 5) User Interface and reports testing
- 6) Concurrency testing
- 7) Performance and Load testing
- 8) Test Scenarios along with entry and exit criteria
- 9) Test specifications
- 10) Suspension and resumption criteria

17.2 Test scenarios

The Implementation Partner should prepare test scenario for each business scenario. A test scenario when executed should fulfil a business requirement as per the scope of business functionality. Test scenarios include following:

- 1) Test Specification - During the test specification phase, the test cases are specified. It consists of description of the input, process to be executed and a prediction of output results.
- 2) Test Environment - Component developer does unit testing and integration testing. Integration testing can be delegated to a specialized testing group. Each of the members in the testing group is provided with testing environment according to his/her role and responsibilities. Following is sample testing environment for testing:
 - o A workstation
 - o A set of tools and applications required on workstation like access to user interface, browser etc.
 - o Access to centralized document database (where all the project related documents are maintained)
 - o Access to testing tools and defect logging tools
 - o Access to the central database or repository for development and unit testing (this database contains sample test data)
 - o Access to deployed components
- 3) Test Data - Test data is prepared for testing at each stage. The test data should be prepared in such a way that it covers basic path and every alternate path of the code. The basic path and alternate paths are prioritized to capture relevant data. Tools can also be used to generate test data.
- 4) Test scenarios related to disaster recovery should be provided which shall contain following points:
- 5) Fail safe infrastructure
- 6) 100% transactional data availability
- 7) Availability of historical data
- 8) Minimal down Time.

17.3 Test Execution

The below mentioned testing steps are usually employed in the project lifecycle. The Implementation Partner is expected to follow these steps.

- 1) Unit Testing - In unit testing, each piece of code has to be rigorously tested. At this stage testing is done according to the priority of path of code. All the test results are logged in the defect logging tools. After the completion of testing, code is corrected for defect logs. This process is iterative till criteria for successful testing is reached.
- 2) Integration Testing - Upon completion of unit testing, integration testing begins. The purpose is to ensure distinct components of the application still work in accordance to customer requirements. Test sets will be developed with the express purpose of exercising the interfaces between the components. This activity is to be carried out by the Test Team. Integration test will be termed complete when actual results and

expected results are either in line or differences are explainable/acceptable based on client input.

- 3) Incremental Integration Testing - Continuous testing of an application as new functionality is added.
- 4) System Testing - System testing is performed when all the components are delivered to central repository prior to the release of the software. The testing is done on priority basis of business processes. All the defects are logged and assigned to respective component owners. The component and unit testing is performed after the correction of code. However, it may depend on size and type of individual test specifications. Impact analysis is useful to narrow down testing efforts by identifying critical test cases affected due to code change.
- 5) Pre-Production Testing – Pre-Production testing is done by simulating the production load. Test data is either prepared or generated from the tools. This testing is used to evaluate performance, load capacity and concurrency. Load testing tools can also be used for this purpose. Following special type of testing are done during Pre-Production Testing Phase:
 - Regression Testing - The objective of regression testing is to ensure software remains intact. A baseline set of data and scripts will be maintained and executed to verify changes introduced during the release have not “undone” any previous code. Expected results from the baseline are compared to results of the software being regression tested. All discrepancies will be highlighted and accounted for, before testing proceeds to the next level.
 - Performance Testing - Although performance testing is described as a part of system testing, it can be regarded as a distinct level of testing. Performance testing will verify the load, volume, and response times as defined by requirements.
 - Load Testing - Testing an application under heavy loads, such as the testing of a web site under a range of loads to determine at what point the systems response time degrades or fails.
 - Installation Testing - Testing full, partial, or upgrade install/uninstall processes. The installation test for a release will be conducted with the objective of demonstrating production readiness. This test is conducted after the application has been migrated to the client's site. It will encompass the inventory of configuration items (performed by the application's System Administration) and evaluation of data readiness, as well as dynamic tests focused on basic system functionality. When necessary, a sanity test will be performed following the installation testing.
 - Security/Penetration Testing - Testing how well the system protects against unauthorized internal or external access, wilful damage, etc. This type of testing may require sophisticated testing techniques.
 - Recovery/Error Testing - Testing how well a system recovers from crashes, hardware failures, or other catastrophic problems.

- 4) Acceptance Testing – During the test scenarios definition, for each of the business scenario, an acceptance criterion is defined. Acceptance criteria include expected behaviour of the software component and the expected results (data). Expected results form a part of the Exit Criteria. In addition to expected result and behaviours, some conditions are also specified in the exit criteria. They can be -
- Number of bugs to be discovered for a functional module. This depends on size of the functionality and is an indicator of amount of testing done.
 - If any medium or low-priority errors are outstanding - the implementation risk must be signed off as acceptable by NPCL and Lead Partner along with consortium partners
 - All High Priority errors from System Test must be fixed and tested Lead Partner along with consortium partners needs to get the acceptance criteria approved from NPCL for all the functional components of the system. The Acceptance Criteria for each release into production environment will be agreed upon by Lead Partner along with consortium partners in consultation with NPCL prior to release from Testing to production environment. After installation, if any bug is reported or there is non-compliance to requirements then a proper procedure should be followed. End-user should report ("Change Request") to his/her supervisor about the bug that will in turn get forwarded to Project Manager (PM). PM will forward the List of change request to Lead Partner along with consortium partners. After the bug is fixed, it should be reflected in the production copy after testing it.

17.4 Performance Testing

The bidder has to test and demonstrate the operational performance requirement as per specification after completion of entire scope. This will be part of acceptance testing. The system will be taken over by NPCL only after successful operational performance testing. The bidder has to arrange necessary hardware / software to demonstrate the performance testing.

SECTION VII-GENERAL CONDITION OF CONTRACT

1. Consortium

1.1 If the Bidder is a consortium, the members of such consortium shall be jointly and severally liable to NPCL for the fulfilment of the provisions of the Contract. Only the Lead Member shall have the authority to conduct all businesses for and on behalf of the Consortium during the bidding process and, in the event the Consortium is awarded the Contract, during contract execution the composition of the consortium cannot be altered.

1.1.1 Without prejudice to Clause 1.1 this, for the purposes of fulfilment of its obligations as laid down under the Contract where NPCL deems fit and unless the context requires otherwise, Bidder shall refer to the Lead Member who shall be the sole point of interface between NPCL and the Consortium and would be absolutely accountable for the performance of its own, the other members of Consortium and/or its Team's functions as also the subcontractors.

1.2 All payments shall be made by NPCL in favour of the Lead Member only.

1.3 Maximum number of partners in the consortium shall be two including the lead member.

2. Terms of Payment

2.1 The price will be firm and inclusive of all charges. Applicable TDS will be deducted at all stages of payment. Expenses for local accommodation and conveyances as well as out-of-pocket expenses of onsite resources will have to be borne by successful Bidder. We expect a fixed price proposal (FPP) for the entire scope of the project and cost escalations for the given scope will not be allowed.

2.2 The Contract Payment shall be done in the manner specified as per the detailed mentioned in point 2.7. No invoice for extra work/change order on account of change order will be submitted by the Bidder unless extra work/change order has been authorized/ approved by NPCL in writing.

2.3 The Bidder's request for payment shall be made to NPCL in writing, accompanied by invoices describing, as appropriate, P2P Energy Trading using Blockchain implementation Related Services performed, License supplied etc. accompanied by the documents submitted.

2.4 Payments shall be made promptly by NPCL, no later than forty five (45) days after submission of an invoice or request for payment by the Bidder, and NPCL has accepted it.

2.5 If any excess payment has been made by NPCL due to difference in quoted price in proposal and Bidder's invoice, NPCL may without prejudice to its rights recover such amounts by deducting the amount from further payments after notifying the Bidder or deduct such excess payment from any payment subsequently falling due to the Bidder. The currency in which payment shall be made to the Bidder under this contract is Indian Rupees (INR).

2.6 Payment shall be made by NPCL against invoice along with Warranty Certificate, Performance bank Guarantee and Implementation documentation within 45 days of submission of invoice.

2.7 Payment shall be done to bidder at following stages of Project which is applicable for one-time deployment of P2P Energy Trading using Blockchain solution. The subsequent payment schedule against further AMC/upgradation subscription are not the part of this RfP and shall be determined at the applicable stages of AMC/upgradation only.

Item	Schedule	% of total cost of project
Performance Bank Guarantee	Within 15 days from the contract award date	10%
COTS deployment on premises (or on cloud model) including designing software	Upon COTS software verification and initial overview training and documentation	20%
P2P Energy Trading using Blockchain Platform development as per NPCL requirements	Common functionalities , which do not require integration with NPCL IT system and completed testing.	10%
Integration with relevant IT applications	Integration with SAP-CRM, Billing, PM , payment gateway etc. and complete module testing	25%
UAT	Successful User Acceptance Test for all possible scenarios, complete documentation, hand-over and onsite training.	20%
Go-Live	Successful Go-Live upon completion of entire scope of work	15%

3. Taxes and Duties

3.1 The prices quoted by the Bidder shall be inclusive of all duties/taxes/levies. Responsibility for including all applicable taxes/duties/levies in the proposal lie with the Bidder and NPCL shall not be responsible for any error/omission on the part of the Bidder. Payment of taxes/duties/levies shall not be made separately. In case of change in the rate of any statutory taxes/duties etc., and if it is on downward side then the same shall be adjusted in subsequent invoices and if it is upwardly revision, then the P2P Energy Trading using Blockchain implementation Partner shall submit all the requisite documents for further consideration by NPCL.

3.2 The cost of Entry Tax as applicable will be the liability of the Bidder i.e. the price quoted will be inclusive of Entry Tax. The amount of Entry Tax will be deducted from the Bidder's invoice and remittance to tax dept. will be made by NPCL under the TIN number of NPCL. If any liability is raised by the commercial tax department, Govt. of Uttar Pradesh on account of Entry Tax at a later date, the same shall be to the Bidder's account and accordingly recovery shall be made from the Bidder' spending bills/security deposit as available with NPCL.

4. Warranty & AMC

- 4.1 The Bidder warrants that the P2P Energy Trading using Blockchain has all the latest features and it incorporates all recent improvements in the P2P Energy Trading using Blockchain, unless provided otherwise in the Contract. Also all the future improvements in the P2P Energy Trading using Blockchain application should be made available to NPCL at no extra cost during the warranty period.
- 4.2 The Bidder further warrants that the application / solution for P2P Energy Trading using Blockchain shall be free from defects arising from any act or omission of the Bidder or arising from design, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 4.3 The warranty shall remain valid for the period of 36 months commencing from the date of final Sign off upon successful implementation.
- 4.4 NPCL shall give Notice to the Bidder stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof.
- 4.5 NPCL shall afford all reasonable opportunities for the Bidder to inspect such defects.
- 4.6 Upon receipt of the Notice, the Bidder shall, expeditiously repair, Modify and Update processes / queries thereof, at no cost to NPCL.
- 4.7 SLA for the warranty support has been defined here in above.
- 4.8 As if having been notified, the Bidder fails to remedy the defect within the period of warranty specified in the RfP and quality of warranty support is not up to the mark; NPCL may proceed to take within a reasonable period such remedial action as may be necessary, at the Bidder's risk and expense and without prejudice to any other rights which NPCL may have against the Bidder under the Contract.
- 4.9 The bidder shall separately submit the offer for AMC once the warranty is over. However, the AMC shall cover all regular updates in infrastructure like software patches, upgrades, hardware upgrades if any, APIs, cloud connectivity, Issue resolution as per SLA compliance and scheduled training whenever applicable. A separate PO shall be issued for AMC.

5. Performance Bank Guarantee (PBG)

- 5.1 Bidder is required to furnish an irrevocable and unconditional Bank Guarantee, issued by a Nationalized/Scheduled Bank and evocable at all branches in India, for an amount equal to 10% of the order value as Performance Guarantee. The Bank Guarantee should remain valid for warranty period plus 3 months. 3 months period is required as a claim period.
- 5.2 NPCL shall at its sole discretion invoke the Performance Security and appropriate the amount secured there under, in the event that the Bidder commits any delay or default in development or non-successful chat interaction of the P2P Energy Trading using Blockchain as per defined criteria or Related Use cases or commits any other breach of the terms and conditions of the Contract.
- 5.3 The Performance Security shall be denominated in the currencies of the Contract, and shall be in one of the forms stipulated by NPCL.
- 5.4 The Performance Security shall be discharged by thence and returned to the Bidder not later than fourteen (14) days upon expiry of the PBG following

the date of completion of the Bidder's performance obligations under the Contract, including any warranty obligations, unless specified otherwise based on request in writing by bidder.

- 5.5 Successful Bidder may also opt for Performance deposit in the form of Demand Draft drawn in favour of Noida Power Company Limited, Greater Noida, or may request NPCL to retain the PBG amount from its bills, refundable without any interest on fulfilment of contractual obligations.

6. Intellectual Property & Source Code to be the Proprietary of NPCL

- 6.1 Bidder will ensure that there occurs no unauthorized usage or disclosure of all the inputs / data provided by NPCL or information fetched through NPCL servers and deliverable which include Billing information for consumer, any details related to the consumer like contact details, address, mail id etc. and no such data is shared with any third party.
- 6.2 The source code of the customized part of the application software will remain the exclusive property of NPCL, even after the termination or expiry of the contract. The ownership shall also remain with NPCL in case the selected Bidder fails to execute tasks to the satisfaction of NPCL. The source code is required to be deposit with NPCL on monthly basis. The source code also includes the database related changes, query build etc.
- 6.3 Further to this, Bidder will ensure not to publicize any information related to the Contract and Project without the prior written confirmation/ approval from NPCL.
- 6.4 INFORMATION SECURITY REQUIREMENTS
Bidder will be required to abide by the relevant security standards/ regulations/ requirements/guidelines which would be applicable to the conduct of the transactions contemplated under this Order, including, without limitation -
- Regulatory provisions as may be applicable from time to time,
 - Security measures and resultant software upgrade consequent upon upgrade of systems and procedures with a view of ensuring security of transactions,
 - Maintenance, protection, confidentiality and such other requirements with respect to transaction data as may be imposed by any regulatory or standards authority.
- 6.5 Bidder shall ensure that while it uses any software, hardware, processes, data, document or material in the course of performing the Services under this Contract, it does not infringe the Intellectual Property Rights of any person/third party and Bidder shall keep NPCL indemnified and hold harmless against all costs, expenses and liabilities howsoever, arising out of 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 Bidder or its personnel during the course of performance of the Services under this Contract.
- 6.6 NPCL shall have a right in perpetuity to use newly created Intellectual Property Rights which have been developed during execution of this Contract, including but not limited to all engineering records, reports, designs, application configurations, data, and written material, specifications, reports and other documents which have been newly created and developed by the Bidder and for the purposes of inter-alia use

- or sub-license of such Services under this Contract. Under this programme, NPCL will own rights to all data/Services/deliverables delivered by Bidder under this Contract.
- 6.7 Bidder undertakes to disclose all deliverables under this Contract and further disclose all such Intellectual Property Rights related to such deliverables and assign all such rights in favour of NPCL.
- 6.8 Bidder shall indemnify and hold harmless NPCL and keep NPCL fully indemnified against all third party claims of infringement of patent, trademark or industrial design rights arising from the supply, use of the equipment and Services or any part thereof under the terms of this Contract.
- 6.9 Bidder shall be obliged to ensure that all authorizations, approvals, registrations, licenses, permits and rights etc. which are inter-alia necessary for use of the P2P Energy Trading using Blockchain implementation Services supplied / installed by the Bidder, the same shall be acquired in the name of NPCL or any third party as may require, solely for the purpose of execution of any of its obligations under the terms of this Contract.
- 6.10 However, subsequent to the Terms of this Contract, such approvals, registrations, licenses, permits and rights etc. shall be used for exclusive benefit of NPCL.
- 6.11 Bidder shall retain exclusive ownership of all methods, concepts, algorithms, trade secrets, software documentation, other intellectual property or other information belonging to the Bidder that existed before the effective date of the Contract and acquired hereafter while working on this project, which are not directly related to the deliverables under this Contract.

7. Confidential Information

- 7.1 In connection with this Bid, Bidder may have access to certain information regarding business arrangements, business and operating processes, financial information, customer-related data and information and other non-public confidential information of NPCL during and in connection with the performance of services (referred to hereunder as "Confidential Information"), and hence, Bidder shall not disclose any Confidential Information to any third party and shall not use any such Confidential Information for any purpose other than as strictly required for performance under this Bid. All such Confidential Information is and shall remain the exclusive property of NPCL and no license shall be granted or implied with respect to such Confidential Information by reason of Bidder's access to such Confidential Information. Bidder shall protect the proprietary information of NPCL with the same standard of care and procedures used by Bidder to protect their own proprietary information of similar importance but at all times using at least a reasonable degree of care.
- 7.2 Bidder shall undertake such precautions as is sufficient to enable them to comply with all the terms hereof and to ensure similar compliance thereof by each such employee / partner of their and which binds each such employee / partner to maintain complete and effective secrecy and confidentiality regarding any and all information whatsoever pertaining to NPCL which comes to their knowledge in the course of undertaking any work or services in pursuance of this Bid.

- 7.3 Bidder shall be relieved of this obligation of confidentiality to the extent any such information:
- a. Was in the public domain at the time it was disclosed or has become in the public domain through no fault of Bidder;
 - b. Bidder can prove, was known to them, without restriction, at the time of disclosure;
 - c. Is disclosed by Bidder with the prior written approval of NPCL;
 - d. Bidder can prove that it was independently known without any use of NPCL's Confidential Information and by their employees or their agents/ partners who have not had access to any of NPCL's Confidential Information; or
 - e. Becomes known to them, without restriction, from a source other than NPCL without breach of this Bid and otherwise not in violation of NPCL's rights.
- 7.4 The obligations set forth hereinabove shall survive the termination of validity of this Bid and expire at the end of the first anniversary of the termination validity of this Bid.
- 7.5 For the purposes of this Clause, the words "any such information was in public domain" shall refer to that part of Confidential Information, which is openly and lawfully available to the public at large.

8. Subcontracting

- 8.1 Except as provided hereunder under Clause 8.2, the Bidder shall not be permitted to sub-contract any part of its obligations under the Contract.
- 8.2 The names and roles of the sub-contractor shall be clearly mentioned in the proposal/bid.
- 8.3 The Bidder shall ensure that the sub-contractor appointed has sufficient capacity to undertake the execution of the tasks they will perform under this Contract.
- 8.4 The Bidder indemnifies and shall keep indemnified NPCL against any losses, damages, claims or such other implications arising from or out of the acts and omissions of such subcontractor. The Bidder shall be responsible for making all payments to the subcontractor as may be necessary, in respect of any Services performed or task executed, and NPCL shall not be responsible for any part or full payment which is too due to such subcontractor.
- 8.5 All rights for use of any process, product, service or facility developed or any other task performed by the subcontractor for the Bidder, under this contract would lie exclusively with NPCL in perpetuity free from all liens, encumbrances and other third party rights and the Bidder shall, wherever required, take all steps that maybe necessary to ensure the transfer of such ownership in favour of NPCL.
- 8.6 Nothing in this clause 8 shall relieve the Bidder from any of its liabilities or obligations under this Contract. NPCL reserves the right to hold Bidder liable for any act/omission of any subcontractor.
- 8.7 Where NPCL deems necessary, it shall have the right to require replacement of any subcontractor with another subcontractor and the Bidder shall in such case terminate forthwith all agreements/contracts other arrangements with such subcontractor and find suitable replacement for such subcontractor to the satisfaction of NPCL at no additional charge,

from the empanelled list. Failure to terminate all agreements/contracts with such subcontractors, shall amount to a breach of the terms thereof.

8.8 The Bidder shall be responsible for ensuring that the Subcontractor shall comply with all relevant and applicable provisions of the Contract. In default on the part of the sub-contractor to comply with the terms and conditions of the Contract wherever applicable, shall amount to breach on the part of the Bidder, and NPCL in addition to all other rights, have the right to claim damages and recover from the Bidder all losses/ or other damages that may have resulted from such failure.

9. Specifications and Standards

9.1 Technical Specifications and Drawings

- a. The Bidder shall ensure that the P2P Energy Trading using Blockchain application and Services comply with the technical specifications and other provisions of the Contract.
- b. The Bidder shall be entitled to disclaim responsibility for any modification thereof provided or designed by or on behalf of NPCL, by giving a notice of such disclaimer to NPCL.
- c. P2P Energy Trading using Blockchain application / Services supplied under this Contract shall conform to the standards mentioned in Section V, Scope of Work and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the P2P Energy Trading using Blockchain Services.
- d. Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section V, Scope of Work. During Contract execution, any changes in any such codes and standards shall be applied only after approval by thence.

10. Project Execution Methodology

10.1 The successful bidder should define & execute the project execution methodology that would include project governance, project charter, requirement Matrix etc.

10.2 Methodology for deployment of various solutions also needs to be defined & executed.

11. User Maintenance

11.1 User maintenance will include:

- a. User ID creation
- b. Password reset
- c. Authority, roles
- d. Secured signatures etc.
- e. User audit logs and logs extraction as per requirement
- f. Roles, responsibilities, queries and Authorisations addition, deletion and Modification
(These should be clearly specified).

12. Liquidated Damages and Penalty

- 12.1 If the Bidder fails to deliver any or all of the P2P Energy Trading using Blockchain application / service or perform the Related Services within the period specified in the Contract, NPCL may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, Applicable @ 1% per week or part thereof plus applicable GST, subject to a maximum of 10% of the invoice value plus applicable GST in the event of delay in execution of the service by the Bidder beyond the stated delivery period.
- 12.2 In addition, the Bidder is liable to NPCL for payment penalty as specified in the SLA.
- 12.3 If the P2P Energy Trading using Blockchain supplied do not meet the minimum specifications as per the Contract, and the same is not replaced/modified by the Bidder to meet the requirements within 14 days of being informed by NPCL, then NPCL shall be free to impose any penalty as deemed fit. In addition, NPCL shall reserve the right to terminate the contract and recover liquidated damages by forfeiting the performance guarantee submitted to NPCL.

13. Liability/Indemnity

- 13.1 The Bidder hereby agrees to indemnify NPCL, for all conditions and situations mentioned in this clause, in a form and manner acceptable to NPCL. The Bidder agrees to indemnify NPCL and its officers, servants, agents ("NPCL 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:
- a. Any negligence or wrongful act or omission by the Bidder or its agents or employees or any third party associated with Bidder in connection with or incidental to this Contract; or
 - b. Any infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied P2P Energy Trading using Blockchain application / services or any part thereof.
- 13.2 The Bidder shall also indemnify NPCL against any privilege, claim or assertion made by a 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 without limiting the generality of the provisions of the clause 13.1 and 13.2, the Bidder shall fully indemnify, hold harmless and defend NPCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NPCL 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 P2P Energy Trading using Blockchain, information, design or process supplied or used by the Bidder in performing the Bidder'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 Bid or preliminary injunction is granted, the Bidder shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the

suspension of the injunction or restraint Bid. If, in any such suit, action, claim or proceedings, the P2P Energy Trading using Blockchain application / services or any part thereof, or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Bidder shall promptly make every reasonable effort to secure for NPCL a license, at no cost to NPCL, authorizing continued use of the infringing work. If the Bidder is unable to secure such license within a reasonable time, the Bidder shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof, with on-infringing work or part or process, or modify the same so that it becomes non-infringing.

13.3 Defence of Claims:

- a. If any proceedings are brought or any claim is made against NPCL arising out of the matters referred to in Sub-Clause 13.1, 13.2, or 13.3 NPCL shall promptly give the Bidder a notice thereof, and the Bidder may at its own expense and in NPCL's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.
- b. If the Bidder fails to notify NPCL within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then NPCL shall be free to conduct the same on its own behalf.

14. Termination & its Consequences

14.1 Termination for Default

14.1.1 NPCL may, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Bidder, terminate the Contract in whole or in part:

- If the Bidder fails to deliver any P2P Energy Trading using Blockchain related application / Service or complete P2P Energy Trading using Blockchain application / services within the period specified in the Contract, or within any extension thereof granted by NPCL; or
- If the Bidder, in the judgment of NPCL has engaged in corrupt, fraudulent, collusive, or coercive practices, as defined, in competing for or in executing the Contract; or
- Any representation made by the Bidder in the proposal is found to be false or misleading
- If the Bidder commits any breach of the Contract and fails to remedy or rectify the same within the period of two weeks (or such longer period as NPCL in its absolute discretion decide) provided in a notice in this behalf from NPCL.
- As specified in the SLA

14.1.2 In the event NPCL terminates the Contract in whole or in part, pursuant to Clause 14.1.1, NPCL may procure, upon such terms and in such manner as it deems appropriate P2P Energy Trading using Blockchain similar to those undelivered or not performed, and the Bidder shall be liable to NPCL for any additional costs for such similar P2P Energy Trading using Blockchain implementation. However, the Bidder shall continue performance of the Contract to the extent not terminated.

14.2 Termination for Insolvency

14.2.1 NPCL may at any time terminate the Contract by giving Notice to the Bidder if the Bidder becomes bankrupt or otherwise insolvent. In such event, the termination will be without compensation to the Bidder, provided that, such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to NPCL.

14.3 Termination for Convenience

14.3.1 NPCL, by Notice sent to the Bidder, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for NPCL's convenience, the extent to which performance of the Bidder under the Contract is terminated, and the date upon which such termination becomes effective.

14.3.2 The P2P Energy Trading using Blockchain use cases that are complete after the Bidder's receipt of the Notice of termination shall be accepted by NPCL at the Contract terms and prices. For the remaining P2P Energy Trading using Blockchain use cases implementation, NPCL may elect:

- To have any portion completed and delivered at the Contract terms and prices; and/or
- To cancel the remainder and pay to the Bidder an agreed amount for partially completed P2P Energy Trading using Blockchain services and for materials and parts previously procured by the Bidder.

14.4 Consequences of Termination

14.4.1 Upon Termination of the Contract, the Bidder shall:

- Prepare and present a detailed exit plan within five calendar days of termination notice receipt to the GM (Automation) of NPCL ("Exit Plan").
- The VP (Automation) and along with designated team will review the Exit plan. If approved, Bidder shall start working on the same immediately. If the plan is rejected, Bidder shall prepare an alternate plan within two calendar days. If the second plan is also rejected, VP (Automation) or the authorized person will provide a plan for Bidder and it should be adhered by in totality.
- The Exit Plan should cover at least the following:
 - 1) Execute all documents that would be necessary.
 - 2) Effectively transfer the ownership and title;
 - 3) Hand over all developed codes, related documentation; and other Configurable Items, if any in his possession;
 - 4) Hand over the list of all Admin authorizations, Links, passwords at allocations to NPCL.
 - 5) The Bidder and VP (Automation), or the authorized person will sign a completion certificate at the end of successful completion (all points tracked to closure) of the Exit Plan.

15. Limitation of Liability

15.1 Except in cases of gross negligence or wilful misconduct:

- a. 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 Bidder to pay liquidated damages to the NPCL; and

- b. The aggregate liability of the Bidder to thence, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the Contract Price.

16. Engagement of Skilled Labour

The work will be executed by technical skilled persons of minimum qualifications of an “**Engineer**” and not by labour during installation and service period for all activities related to P2P Energy Trading using Blockchain deployment at NPCL. The Bidder shall make his own arrangements for engagement of all skilled persons, their transportation, housing, feeding, payment, out of pocket expenses etc.

17. Force Majeure

Neither party shall be liable to the other for any delay or failure in performing its obligations under the Order to the extent that such delay or failure is caused by an event or circumstance that is beyond the reasonable control of that party, without such party's fault or negligence, and which by its nature could not have been foreseen by such party (“Force Majeure Event”). Force Majeure Events include, but are not limited to, act of God or the public enemy, government restrictions, floods, fire, earthquakes, explosion, epidemic, war, invasion, terrorist acts, riots, strike, or embargoes. Supplier's economic hardship or changes in market conditions are not considered Force Majeure Events. Supplier shall use all diligent efforts to end the failure or delay of its performance, ensure that the effects of any Force Majeure Event are minimized and resume performance under the Order. If a Force Majeure Event prevents supplier from performance for a continuous period of more than thirty (30) business days, either party (NPCL/Supplier) may terminate this Order immediately by giving written notice to each other.

18. Arbitration

All disputes if any arising out of or in connection with this order, including any question regarding its existence, validity or termination, shall, unless amicably settled between the parties, be finally settled by arbitration. The parties shall mutually agree and appoint a sole arbitrator. Notwithstanding to what is stated above, if the parties cannot mutually agree on arbitrator within 4(four) weeks from the date of invocation of arbitration, then the Arbitrator shall be appointed in accordance with rule of Arbitration and Conciliation Act 1996. The arbitration proceedings shall be conducted as per the Arbitration and Conciliation Act 1996, and any modifications thereto and re-enactments thereof. The seat of arbitration shall be Greater Noida. The language to be used in arbitration proceedings shall be English.

19. Indemnification

- 19.1 The Supplier hereby agrees to indemnify NPCL, for all conditions and situations mentioned in this clause. The Supplier agrees to indemnify NPCL and its officers, servants, agents ("NPCL Indemnified Persons") from and against any costs, losses, damages, expenses, claims, including those from third parties or liabilities of any kind howsoever suffered, arising or incurred inter alia during the Contract period arising out of:
- a. Any gross negligence by the Supplier or its agents or employees or any third party directly associated with Supplier in connection with this Contract or
 - b. Any infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied material related services or any part thereof.
- 19.2 The Supplier shall also indemnify NPCL against any privilege, claim or assertion made by a third party with respect to right or interest in ownership, mortgage or disposal of any assets or properties either movable or immovable as mentioned in any Intellectual Property Rights, licenses and permits.
- 19.3 Without limiting the generality of the provisions of the clause 1 and 2, the Supplier shall fully indemnify, hold harmless and defend NPCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages, which NPCL 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 contract services, information, design or process supplied or used by the Supplier in performing the Supplier's obligations or in any way incorporated in or related to the Project. If in any such suits, actions, claims or proceedings, a temporary restraint agreement or preliminary injunction is granted, the Supplier shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraint agreement. If, in any such suits, actions, claims or proceedings, the related services, or any part thereof, or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Supplier shall promptly make every reasonable effort to secure for NPCL a license, at no cost to NPCL, authorizing continued use of the infringing work. If the Supplier is unable to secure such license within a reasonable time, the Supplier shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof, with non-infringing work or part or process, or modify the same so that it becomes non-infringing.
- 19.4 Supplier shall ensure that while it uses any software, hardware, processes, data, documents and materials in the course of performing the services under this Contract, it does not infringe the Intellectual Property Rights of any person/third party and Supplier shall keep NPCL indemnified and hold harmless against all costs, expenses and liabilities howsoever, arising out of any illegal or unauthorized use (piracy) or in connection with any claims or proceedings relating to any breach or violation of any permission/ license terms or infringement of any Intellectual Property Rights by the Supplier or its personnel during the course of performance of the services under this Contract.

- 19.5 NPCL agrees that Supplier and its officers, employees, representatives or agents (hereinafter collectively "Supplier") shall not be liable in any way for errors made by NPCL, its agents or employees. This includes, but is not limited to, any errors in information and data provided to Supplier in connection with the services, errors made by transposing or recopying of engineering data, calculation and drawings, wrong interpretation of the study results, or changes to the final recommendation or report.
- 19.6 Limitation of Liability: Except in cases of gross negligence and wilful misconduct:-
- a. 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 profit or interest cost provided that this exclusion shall not apply to any obligation of the Supplier to pay Liquidated Damages to the NPCL; and.
 - b. The aggregate maximum liability of the Supplier, whether under the Contract, in tort, or otherwise, shall not exceed the Contract value.

20. Change Bids and Contract Amendments

- 20.1 NPCL may at any time Bid the Bidder through Notice to make changes within the general scope of the Contract in any one or more of the following:
- a) Use cases where P2P Energy Trading using Blockchain related services to be implemented under the Contract are to be specifically manufactured / defined for NPCL;
- 20.2 If any such Change Bid causes an increase or decrease in the cost of, or the time required for, the Bidder's performance of any provisions under the Contract, inequitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Bidder for adjustment under this Clause must be asserted within twenty eight (28) days from the date of the Bidder's receipt of NPCL's Change Bid.
- 20.3 No variation or modification of the terms of the contract shall be made except by written amendment signed by the parties.

21. Extensions of Time

- 21.1 If at any time during the performance of the Contract, the Bidder or its Subcontractors should encounter conditions impeding timely delivery of the P2P Energy Trading using Blockchain or completion / implementation of related use cases, the Bidder shall promptly notify NPCL in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Bidder's notice, NPCL shall evaluate the situation and may at its discretion, extend the Bidder's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 21.2 Except in case of Force Majeure, or where the delay in delivery of the P2P Energy Trading using Blockchain application / services or completion / implementation of use cases is caused due to any delay or default of NPCL,
- 21.3 Any extension granted shall not absolve the Bidder from its liability to the pay of liquidated damages.

22. Adherence to safety procedures, rules, regulations and restriction

- 22.1 Bidder shall comply with the provision of all laws, including labour laws, rules, regulations and notifications issued there under from time to time. All safety and labour laws enforced by statutory agencies and by NPCL shall be applicable in the performance of this Contract and Bidder's Team shall abide by these laws.
- 22.2 Access to the Data Centre Sites and NPCL's locations shall be strictly restricted. No access to any person except the essential personnel belonging to the Bidder who are genuinely required for execution of work or for carrying out management/maintenance who have been explicitly authorized by NPCL shall be allowed entry to the Datacentre Sites and some NPCL's locations. Even if allowed, access shall be restricted to the pertaining equipment of NPCL only. The Bidder shall maintain a log of all activities carried out by each of its personnel.
- 22.3 The Bidder shall take all measures necessary or proper to protect the personnel, work and facilities and shall observe all reasonable safety rules and instructions. Bidder's Team shall adhere to all security requirement / regulations of thence during the execution of the work. NPCL's employee also shall comply with safety procedures/policy.
- 22.4 The Bidder 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.
- 22.5 NPCL will be indemnified for all the situations mentioned in this clause.

23. Go Live

- 23.1 The System shall be considered Go-Live upon successful execution of the project and when the system is handed over in working condition, including delivering as per the scope of work mentioned in this document and subsequently frozen during requirement gathering phase.

24. General terms and conditions of Payment Schedule

- 24.1 All payments shall be made by NPCL in favour of the Lead Bidder only.
- 24.2 The release of payments will be Performance (output) based, where the payments are made for measured deliverables and outputs. The SLAs will govern the penalty and reductions from payments for inferior deliverables.
- 24.3 Bidder should obtain completion certificate for each project area from NPCL and raise an invoice against the same.
- 24.4 Payments against invoice submitted (accompanied with all requisite documents) shall be released within 45 days of submission of invoice.
- 24.5 Bidder needs to ensure completion of all works for project area before submitting the invoice. This includes supply of required software, customization, installation and commissioning. In addition, others activities like field survey, integration of identified legacy systems etc. shall also be completed.
- 24.6 In case go-live of any project area is delayed, the entire cost and/or time over-run shall be the responsibility of the Bidder and shall be borne by him only.

24.7 The power to withhold: Notwithstanding anything contained in the payment schedule mentioned below, if in the opinion of NPCL, any work done or supply made or service rendered by Bidder is deficient in any manner in comparison to the prescribed standards, NPCL shall be at liberty to withhold a reasonable portion of the payments due to the Bidder, till such work/ supply/service is made confirming to the prescribed standards. These powers to withhold payments shall be without prejudice to any other power/ right of NPCL under this contract.

Annexure-1

RFP Reference Compliance

Sl. No.	RFP Reference	DESCRIPTION	COMPLIANCE
1	Section-II (1)	General Features: Technical Requirements	
	Section-II (1)	General Features: Security	
	Section-VI	Scope of Works	

Eligibility Compliance sheet

S.No.	Eligibility Criteria	Compliance Yes/No	Documentary proof to be attached
1	The bidder should be a Company registered under the Companies Act/ Partnership / LLP since the last three years.		Certificate of Incorporation/Registration
2	The bidder should have minimum annual turnover of INR 10 Crores during any of the two of the last three financial years. Concession of one year in case the bidder is a start-up / SME registered under the MSME program.		Bidder's Audited Balance-sheet and Profit-Loss statements of the financial years 2019-2020 and 2020-21. If the balance sheet for 2020-21 has not yet been audited, the bidder may submit audited balance sheet for 2018-19 along with unaudited balance sheet for 2020-21.
3	The Bidder should be a profit (profit after tax) making Company in any two of the last three Financial Years". In case of a JV / Consortium / Strategic partnership, the Principal Bidder needs to be a profit making company. Concession of one year in case the bidder is a start-up / SME registered under the MSME program.		Bidder needs to provide audited balance sheet.
4	The entity should have never been blacklisted / barred / disqualified by any regulator / statutory body in India or abroad.		The Bidder should provide an undertaking for same
5	The Bidder should be authorized to quote for the OEM products and support.		Details
6	Bidder should have experience of implementing P2P Energy Trading using Blockchain solutions for other utility clients and steady source of investment		Bidder credentials documents

7	Should have undertaken a similar work in implementing P2P Energy Trading using Blockchain solution for at least 1 client	Provide client certificate or the contract with client indicating the scope of project as desired
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General Technical Compliance

Sl. No.	DESCRIPTION	COMPLIANCE
1	Bidder Credentials	
2	Designing and functional Requirements compliance as per RFP	
3	Team profile, structure and details suggested for implementation of solutions	
4	No. of tickets/reviews/mentions to be handled per resource per day upon	
5	Data analytics and type of reports	
6	Architecture of Solution	
7	Ease of operations	
8	Scalability of proposed solution	
9	Integration with 3rd party APIs, internal platforms	
10	Demo of live P2P Energy Trading using Blockchain	
11	Data analytics and reports functionalities	
12	Quality Control and Assurance Procedures	
Existing		
1	P2P Energy Trading using Blockchain should support multiplatform like Mobile app, Desktop application etc.	
2	A trading platform with no limitations of number of participating entities and number of transactions	
3	Peer-to-Peer energy trading screens for Prosumers, consumers and Utility	
4	Adding of new consumer, Prosumers and Approval Mechanism	
5	Keep record of all necessary transactions	
6	Development of smart-contracts for peer-to-peer trading	
7	Functionality to change Tariff as per regulatory guidelines	
8	Maintenance of the ledger and review of records	
9	Various Reports / dashboard for review the transactions	
10	Integration / import of meter data in blockchain application	
11	Integration capabilities with NPCL billing system	

12	Smart contract GUI to modify the contract / create new contract / amendment	
13	Functionality to choose single or multiple prosumer by consumer based on bidding price	
14	Scheduling of Biding by prosumers and consumers	
15	Should be able to configure for DISCOM incentive on every transaction	
16	Functionality to allow bid with-in a fixed price band	
17	Functionality for time based bid expiration	
18	Commissioning of Private Blockchain network required for the pilot	
19	Functionality of data analysis like energy generated, unit sold, energy consumption etc.	
20	User Authentication on Mobile app and web App	
21	P2P Energy Trading using Blockchain Solution should have functionality for Deployment at NPCL server and Cloud based solution	
22	Data security - No data should be stored at P2P Energy Trading using Blockchain side and no data should be shared with any third party	
23	Secured and scalable for enhanced add-on services like EV, batteries or any other future technologies as per industry standard.	
24	P2P ENERGY TRADING USING BLOCKCHAIN solution should be able to provide historic data for analysis purpose	
25	The P2P Energy Trading using Blockchain solution should provide different levels of filtration criteria for generation of reports and dashboards based on the interactive queries, channels and products.	
	Functionality for Penalty to prosumers for non-adherence to utility guidelines	
26	Security Audit mandatory before GO-LIVE	

Annexure-2

1. Bidder Details

Details of the Bidder				
	1	Name of the Bidder (Prime)		
	2	Address of the Bidder		
	3	Status of the Company (Public Ltd/ Pvt. Ltd/ LLP)		
	4	Details of Incorporation of the Company.	Date:	
Ref#				
	5	Permanent Account Number (PAN)		
	6	GSTIN number		
	7	Name & Designation of the contact person to whom all references shall be made regarding this tender		
	8	Telephone No. (Cell Number and Landline # with STD Code)		
	9	E-Mail of the contact person:		
	10	Fax No. (with STD Code)		
	11	Website		
Financial Details (as per audited Balance Sheets) (INR in Cr)				
12	Year	2018-19	2019-20	2020-21 (if available)
	13	Net worth		
	14	Turn Over		
	15	Profit after Tax		

2. Client Reference details

Client Reference Details		
Provide details the client details wherever available:		
Sl. No.		
Name of Institution		
Scope of Work for the Client		
Contact Person Name and Designation	Name	Designation
Contact Details with e-mail	Contact No	Email ID
Preferable time to contact		
Signature: _____.		
Name: _____.		
Designation: _____.		
Date: _____, Place _____.		

Annexure-3

Technical Evaluation Criteria

S NO.	Parameters	Description	Maximum Score
1	Bidders Eligibility Criteria	Registered under Indian companies act	5
		Implementation references of P2P Energy Trading using Blockchain	5
		At least 1 P2P Energy Trading using Blockchain project in India or abroad & its performance certificate	5
2	Bidder's Company's Market Credentials	Company's Global presence	5
		Company's Indian Presence	5
		Company's Financial Standings	5
3	Consortium eligibility	Integration experience	10
		Technology expertise	10
4	Documents	Articles of memorandum of association or partnership deed or proprietary deed	5
		Registration certificate under Indian company act	5
		Audited balance sheet & turnover of last 3 year	5
		Copies of work order & completion certificate for last 5 year	5
		ISO / ISMS / other security Certification	5
		Certification of partnership of relevant software application	5
		Written confirmation authorizing the signatory of the bid to commit the bidder	5
5	QA Mechanism	Mechanism for identification of Failed Transactions – Prosumer's efficiency	10
6	Training Methodology	Training Methodology	5
7	Testing Methodology	Testing Methodology	5
8	Application	Features and Functionality available	10
		Maintenance of the ledger and review of records	5
		user friendly GUI	10
		Dashboard, Report and Analysis capabilities	5
		Information Security	5
		A trading platform with no limitations of number of participating entities and number of transactions	5

		Post Go Live support	10
		P2P ENERGY TRADING USING BLOCKCHAIN 's scalabilities capabilities	10
9	Integration with Other Systems	Solution Scalability	5
		Interface & integration methodology for future NPCL requirements	10
		Integration Capabilities with other System like ERP, MDM etc.	5
	Committed Resource Integration Methodology	Committed Resource Integration Methodology	5
		Implementation methodology including the project governance	10
10	Resource Credentials	Professional Staff	5
		Support Staff	5
		Quality Assurance	10
11	Project Implementation Credentials	Similar Project Experience	10
		Project Implementation Methodology- Onsite/Offshore model	10
		Project Management Practice	10
		Project Delivery time commitment	10
12	Deviation from our requirement	Deviation from our requirement	10
13	Payment Terms	Payment milestones as per our requirement.	10
14	Industry experience for P2P implementation	P2P Energy Trading using Blockchain based in other utilities	20
Total			300

Annexure-4

1. Price Bid Format for Cloud based Solution

On cloud solution	(Model -1) Cloud based Solution			
	Type (Lump sum / Per transaction etc)	Cost (without tax)	Applicable GST	Net Cost (inclusive of tax)
COTS				
Development				
Licence				
API based Integration				
Operation exp - Manpower				
Operation exp - AMC / Servicing				
Year 2				
Year 3				
Total cost On Cloud (Cap + Ops expenditure)				
Total Cost for P2P Energy Trading				

2. Price Bid Format for On Premise Solution

On premises solution	(Model -2) On Premise Solution			
	Type (Lump sum / Per transaction etc)	Cost (without tax)	Applicable GST	Net Cost (inclusive of tax)
COTS				
Development				
Licence				
API based Integration				
Operation exp - Manpower				
Operation exp - AMC / Servicing				
Year 2				
Year 3				
Total cost On Cloud (Cap + Ops expenditure)				
Total Cost for P2P Energy Trading				