

CIN: U40109RJ2000SGC016486



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NO.JPD/Dy.CE(M&P, RE & DSM)/F. TN-1/D. 165

Dated: 21-7-14

ADDENDUM TN-1

The enclosed addendums in RFP for TN-1 for the work of "Appointment of Technical Consultant for Jaipur City Distribution System on PPP Model" is hereby issued.

The same may be downloaded from <https://eproc.rajasthan.gov.in> and <http://jaipurdjscom.com>.

Enclose:- As Above.

(R.K. Dixit)

Dy. Chief ENGINEER (M&P, RE & DSM)

ADDENDUM No.1 to the Request for Proposal

TECHNICAL CONSULTANT FOR JAIPUR DISTRIBUTION PROJECT

Sl No.	Clause No.	Modified Provision of the Request For Proposal
1.	3.1.4	<p>Eligible Assignments</p> <p>For the purposes of determining Conditions of Eligibility and for evaluating the Proposals under this RFP, advisory/ consultancy assignments in respect of preparation of feasibility report and/or detailed project report including engineering surveys, for the following projects undertaken in the past 5 (five) financial years preceding the Application Due Date shall be deemed as eligible assignments (the “Eligible Assignments”):</p> <ul style="list-style-type: none">(i) Distribution systems having an estimated capital cost (excluding land) of at least Rs. 200 (two hundred) crore in case of a project in India, and US \$ 100 (one hundred) million for projects elsewhere;(ii) any project involving electricity transmission and having an estimated capital cost (excluding land) of at least Rs.200 (two hundred) crore in case of a project in India, and US \$ 100 (one hundred) million for projects elsewhere; or(iii) any project involving electricity generation and/ or transmission having an estimated capital cost (excluding land) of at least Rs.500 (five hundred) crore in case of a project in India, US \$ 250 (two hundred fifty) million for projects elsewhere. <p>Provided that the Applicant firm claiming credit for an Eligible Assignment shall have, prior to PDD, received professional fees of at least Rs. 50 (fifty) lakh for such assignment, and where credit is being claimed by a Key Personnel, she/he should have completed the relevant assignment prior to PDD.</p> <p>Provided further that if the Applicant firm is taking credit for an Eligible Assignment which was undertaken for a private sector entity, such assignment shall have been completed prior to PDD and the Applicant shall have received professional fees of at least Rs.1 (one) crore.</p> <p>Conditions of Eligibility for Key Personnel: Each of the Key Personnel must fulfil the Conditions of Eligibility specified below:</p>

2	2.2 (D)	<table border="1"> <thead> <tr> <th data-bbox="443 210 667 241">Key Personnel</th> <th data-bbox="687 210 868 282">Educational Qualification</th> <th data-bbox="922 210 1091 322">Length of Professional Experience</th> <th data-bbox="1145 210 1347 322">Experience on Eligible Assignments</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 367 667 398">Senior System..</td> <td data-bbox="687 367 868 398">.....</td> <td data-bbox="922 367 1091 398">.....</td> <td data-bbox="1145 367 1347 398">.....</td> </tr> <tr> <td data-bbox="443 434 667 465">.....</td> <td data-bbox="687 434 868 465">.....</td> <td data-bbox="922 434 1091 465">.....</td> <td data-bbox="1145 434 1347 465">similar nature.</td> </tr> <tr> <td data-bbox="443 546 667 739">Environmental and Social Impact Assessment Expert</td> <td data-bbox="687 488 868 680">Masters/ Bachelor in Environmental Science or equivalent</td> <td data-bbox="922 488 1091 519">7 years</td> <td data-bbox="1145 488 1347 994">He should have led the environmental and social impact assessment teams or worked as a sole expert for at least 2 (two) Eligible Assignments/ Infrastructure projects of similar nature.</td> </tr> </tbody> </table>	Key Personnel	Educational Qualification	Length of Professional Experience	Experience on Eligible Assignments	Senior System..	similar nature.	Environmental and Social Impact Assessment Expert	Masters/ Bachelor in Environmental Science or equivalent	7 years	He should have led the environmental and social impact assessment teams or worked as a sole expert for at least 2 (two) Eligible Assignments/ Infrastructure projects of similar nature.
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3	1.8	<p data-bbox="432 1061 836 1093">Schedule of Selection Process</p> <p data-bbox="528 1128 1401 1196">The Authority would endeavour to adhere to the following schedule:</p> <table border="1"> <thead> <tr> <th data-bbox="603 1240 852 1272">Event Description</th> <th data-bbox="1034 1240 1251 1272">Estimated Date</th> </tr> </thead> <tbody> <tr> <td data-bbox="544 1294 1011 1361">1. Last date for receiving queries/ clarifications</td> <td data-bbox="1050 1294 1161 1326">30.07.14</td> </tr> <tr> <td data-bbox="544 1406 986 1438">3. Authority response to queries</td> <td data-bbox="1050 1406 1161 1438">05.08.14</td> </tr> <tr> <td data-bbox="544 1482 954 1514">4. Proposal Due Date or PDD</td> <td data-bbox="1050 1482 1161 1514">13.08.14</td> </tr> <tr> <td data-bbox="544 1559 884 1590">5. Opening of Proposals</td> <td data-bbox="1050 1559 1161 1590">13.08.14</td> </tr> <tr> <td data-bbox="544 1635 906 1666">6 Letter of Award (LOA)</td> <td data-bbox="1050 1635 1161 1666">26.08.14</td> </tr> <tr> <td data-bbox="544 1711 890 1742">7 Signing of Agreement</td> <td data-bbox="1050 1711 1161 1742">05.09.14</td> </tr> <tr> <td data-bbox="544 1787 916 1818">8 Validity of Applications</td> <td data-bbox="1050 1787 1161 1818">13.12.14</td> </tr> </tbody> </table>	Event Description	Estimated Date	1. Last date for receiving queries/ clarifications	30.07.14	3. Authority response to queries	05.08.14	4. Proposal Due Date or PDD	13.08.14	5. Opening of Proposals	13.08.14	6 Letter of Award (LOA)	26.08.14	7 Signing of Agreement	05.09.14	8 Validity of Applications	13.12.14
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4	Schedule1	Schedule 1 of the RFP (Terms of Reference) <p style="text-align: center;">SCHEDULE – 1 <i>(See Clause 1.1.3)</i></p>
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Consultancy for a Feasibility Report for

Development

of a

Distribution System in Jaipur

Terms of Reference (TOR)

for

TECHNICAL CONSULTANT

Terms of Reference (TOR)

1. General

- 1.1 The Authority seeks the services of qualified firms for preparing a Feasibility Report for renovation, upgradation, modernisation and strengthening of the distribution system and sub transmission system of the **Jaipur** urban area (the "**Project**") through Public Private Partnership (the "**PPP**") on Design, Build, Finance, Operate and Transfer (the "**DBFOT**") basis. The Terms of Reference (the "**TOR**") for this assignment are specified below:
- 1.2 The urban area of Jaipur is spread over 467(Four hundred and sixty seven) square km (the "**Project Area**"), served from a local distribution system comprising of a network of about 810(eight hundred and ten) ckt. km 33kV lines, 195 (one hundred and ninety five) nos. 33kV/11kV substations with 1377.45 MVA transformation capacity,2995(two thousand nine hundred ninety five)ckt. km 11kV lines, 11253(eleven thousand two hundred and fifty three) nos. 11/0.433 kV DTs with 1501.58 MVA transformation capacity and 7486(seven thousand four hundred and eighty six) ckt. km LV lines, and which has about 7.29(seven point two none) lakh consumers, with a total connected load of over 2710(two thousand seven hundred and ten) MW (the "**Distribution System**"), revenues of about Rs.187(one hundred and eighty seven) crore (2013-14) and AT&C losses of about 9.69(nine point six nine) per cent.
- 1.3 The Authority seeks the services of qualified firms for conducting feasibility studies and preparing a Feasibility Report (the "**Feasibility Report**" or "**FR**") for development of baseline data and IT applications for the **Project**. The feasibility study will validate the data provided by the Authority and establish the techno-economic justification for the Project.

2. Objective

- 2.1 The objective of this consultancy is to prepare a Feasibility Report (FR) for renovation, upgradation, modernisation and strengthening of the Distribution System, and enable the prospective bidders to assess the Authority's requirements in a clear and predictable manner.
- 2.2 The primary objectives of the FR would be to achieve the following:
- (a) Provide information on the 'existing-state' of the Distribution System with its baseline data and IT applications system;

- (b) Describe the 'desired-state' of the Distribution System with its baseline data and IT applications system;
- (c) Provide information on the 'existing-state' of the Distribution System in terms of system characteristics, existing at the time of carrying out the Feasibility Study;
- (d) Describe the 'desired-state' of the Distribution System at the end of a defined timeframe (say one, three and five years) in terms of system characteristics, which would be expected to be achieved after making the assessed investments;
- (e) Define important 'improvement/ up-gradation' schemes identified and an overview of internationally accepted standards and practices of network construction followed in modern urban areas for implementation by the concessionaire;
- (f) Provide a time phased estimate of the investment required to bring about the desired changes -/improvements in the defined timeframe;
- (g) Identify and quantify improvements/ trajectories for identified key performance indicators such as AT&C loss reduction, quality of supply (voltage at the point of supply to consumer and its stability), reliability indices, power factor improvement, safety performance and coverage of supply etc.;
- (h) Identify methods, ways and means, both technical and financial, for ensuring identified key performance indicators of supply as required by the State Electricity Supply Code, Indian Electricity Rules-1956 and prevalent norms including revisiting the Applicable Rules & Norms (viz; inclusion of 66 kV as distribution voltage and 33/0.433 kV as transformation voltage etc.) to achieve sustained and long term compliance of the identified key performance indicators in urban areas with growing load density and RoW constraints; and
- (i) Identify the ways and means for optimizing the costs of power distribution.

2.3 The Feasibility Report would be expected to provide, on the basis of available information and the information to be collected as required, including assets, consumer/ meter indices and schematic diagram(s) of network on topographical map(s) of the urban area on e-format , a detailed, and verifiable description of the distribution system, either through an extensive database, if available, or/and on the basis of data collected/ GPS based survey carried out for smaller but representative areas covering about 6% (six per cent)¹ of the Project Area, which can be reasonably gathered while preparing the FR. The survey will be sub-divided into at least 10 (ten) pockets representing different segments of consumers, which shall be selected in consultation with the Authority.

3. Scope of Services

3.1 The scope of services shall comprise collection of the necessary data and information relating to techno-economic feasibility and financial viability of the Project and to carry out the required assessments, analyses, evaluations and studies, and to prepare the required preliminary designs, preliminary specifications, estimated bill of quantities, cost estimation and other necessary information for preparation of the Feasibility Report to facilitate award

¹ In cities with a population of less than 10 lakhs, 6% (six per cent) may be substituted by 10% (ten per cent).

of the Project on PPP basis through a competitive bidding process. To the extent possible, the selected Consultant would rely on existing data and facts, studies and analyses provided by the Authority and where such data is not available in a ready form, the Consultant and the Authority shall, on a best effort basis, compile the same from existing and available sources so as to complete the FR in a period of 18 weeks from award of contract. Such information to be provided by the Authority to the Consultant is listed in Attachment A of this TOR.

3.2 The scope of services is briefly explained below:

3.2.1 **Task 1: Describe the 'existing-state'**

The information on the existing system would include the following:

- (a) Details of baseline data and IT applications system; such as, Single Line Diagram(s) of network on topographical map(s) on e-format of the Urban Area, assets mapping, consumer/ meter data indexing, meter reading, billing, bill collection, GIS, MIS, energy audit, new connections, disconnections, connected load, customer care service, web self-service etc. to get verified baseline AT&C losses.
- (b) Details of performance indices, such as, AT&C losses, reliability indices (CAIFI/CAIDI/SAIFI/ SAIDI/ ASAI), quality of supply (voltage levels, stability and fluctuations at consumer supply point), power factor levels, safety performance (Accidents & incidents profile), coverage of supply in terms of geographical area as well as population/ households/ new connections, and performance of consumer services such as, transformer failure rate, supply restoration time, meter connection and energization time, billing and commercial complaint handling time, etc.
- (c) Details of system configuration, including network characteristics; such as, 33 & 11 kV substations, transformers and transformation capacity at various voltage levels, voltage-wise feeders and switching stations, control centers, public complaints centers etc.
- (d) Extent of coverage through regular and/ or temporary extended network in the Project Area (geographically as well as in terms of population). Reasons for areas covered through temporary extended network not covered currently within the Project Area (technical, commercial, etc).
- (e) To the extent readily available and collected as required, a detailed inventory of various classes of assets; physical condition of the existing assets, their aging profile, etc. (if comprehensive details are not available, provide details of representative area).
- (f) Details of ongoing capital schemes (e.g., through R APDRP).
- (g) Typical Load profile of feeders up to 33 kV level.
- (h) Details of distribution transformers, rating, capacity, loading pattern, vintage, maintenance records etc.

- (i) Metering capabilities, both at the system level as well as retail consumer level, extent and type of consumer metering (viz. single phase/ poly-phase/ EM/ Electronic with or without AMR) (if comprehensive details are not available, provide details of a representative area).
- (j) Details along with the hourly and seasonal variation in the daily load profiles of various 33 and 11 kV feeders.
- (k) Details of consumer and connected load mix and their approximate load factors for the last 5 (five) years.
- (l) Category-wise consumer details and number of high voltage and high value consumers above (a) 0.100 MW, (b) 0.500 MW and (c) 1 MW for the last 5 (five) years.
- (m) Consumer category-wise revenue details (numbers, load, units billed, amount billed, amount realized) for last 5 (five) years along with ageing analysis of arrear payments.
- (n) Detailed commercial data of the system, including sources, rates and quantum of power being currently provided to the different areas for the last 3 to 5 years.
- (o) Energy audit: practice being followed for measurement of supply to the different areas, feeder, DT and voltage-wise details of T&D and collection losses (i.e. AT&C losses) for the last 3 (three) years and as collected for the representative areas as required.
- (p) Existing unmet demand and the load shedding profile of different areas for the last 3 (three) years.
- (q) Details of current employees existing under different modes of employment at various levels along with organisational structure.
- (r) Safety performance: fatal/ nonfatal accident to human/ animal, near miss, unsafe act, unsafe condition, hazard and risk reported for last 5 (five) years.
- (s) Level-wise compensation structures including contributions towards superannuation benefits.
- (t) Actuarial valuation of terminal benefit liabilities and details of actual funding against the same.
- (u) Details of technical boundary of the licensed area and also the arrangement for measurement of power inflows/ status of boundary meters.
- (v) Details of billing systems, collection practices and receivables management, along with accounting practices for recognising bad and doubtful debts.
- (w) Expenditure details for last three years, viz. establishment costs, repair and maintenance costs, administration and general expenses.
- (x) Summary of existing agreements to be assigned to the concessionaire including existing PPAs that would be transferred to the concessionaire. Plan for sourcing power for the next 5 years.
- (y) Summary of existing vendors and contractors.

- (z) Latest audited accounts or accounts for the last 3 years, for the relevant region.
- (aa) Details of security and other deposits with the Authority in respect of the Project Area.
- (bb) Details of ongoing legal cases with significant implications.
- (cc) Brief particulars of the agreements that would continue beyond a period of 1 (one) year from the date of award of this Consultancy.

3.2.2 Task 2: Describe the 'Desired - State'

The Feasibility Report would need to clearly define the expected establishment of baseline data and IT applications within the broad framework provided in the System Requirement Specification document finalised by the Steering Committee of Ministry of Power; and state of the Distribution System in a time phased manner, at the end of 1, 3 and 5 years from commencement of the concession and consequent upon implementation of the identified schemes including the estimated investment. This may involve the following:

- (a) Metering capabilities, both at the system level as well as retail consumer level.
- (b) Expectations on key operational parameters at the end of 1, 3 and 5 years; such as, AT&C losses, reliability indices (CAIFI/CAIDI/SAIFI/SAIDI/ASAI), quality of supply (voltage levels, stability and fluctuation at consumer supply point), power factor levels, safety performance, coverage of supply in terms of geographical area as well as population/ households/ new connections and performance of consumer services; such as, transformer failure rate, supply restoration time, meter connection and energization time, billing, collection and receivables management and commercial complaint handling time, etc.
- (c) Description of the state of the distribution system at the end of 1, 3 and 5 years, broadly giving details of system configuration, including network characteristics; such as, 33 & 11 kV substations, transformers and transformation capacity at various voltage levels, voltage-wise feeders and switching stations, control centers, public complaints centers etc.
- (d) Analysis of regulatory performance standards, their state of compliance and improvement measures.
- (e) Details of capacity augmentation and system improvement plan for implementation during the 1, 3 and 5 year period, including the specifications and the quantum of changes envisaged; such as, 33 and 11 kV substations, transformers, renovation, augmentation and upgradation of 33 kV and below lines, reactive load compensation, load bifurcation, feeder segregation, Aerial Bundled Cabling and HVDS in thickly populated and high load density areas, Load balancing, maximum feeder load optimization and power factor improvement etc. to bring key operational parameters to desired levels.
- (f) Estimate of time phased investment required during the first 1, 3 and 5 years of the concession period based on estimated BOQs and prevailing rates of materials and works at current prices.

3.2.3 **Task 3: Future Projections**

- (a) Demand projections, including consumer mix, as submitted to and approved by the Electricity Regulatory Commission (the “**Commission**”).
- (b) Tentative Business Plan for the next 5 years with system, network and practice improvements.
- (c) Details of loss reduction trajectory envisaged during the next 5 years.
- (d) Computation of Wheeling Charge and Fixed Charge and financial projections for at least five years based on projected capital investments, loss reduction trajectory, demand growth, etc.

3.2.4 **Task 4:** Evolve a timeline for activities from award of the concession to the complete takeover of the Project by the concessionaire.

3.2.5 **Task 5:** Assessment of possible technical, social and commercial risks together with suggested mitigation options.

3.2.6 **Task 6:** Listing of all the relevant regulations, codes, standards, rules, statutory requirements, provisions of law and other such relevant references that would provide a ready reference to the prospective bidders for obtaining necessary clearances and for undertaking the operation and maintenance of the Project.

3.2.7 **Task 7:** Environmental and social impact assessment in compliance with the applicable laws, policies, regulations and guidelines of the government and suggest a strategy to address the underlying issues, including measures to mitigate the negative impacts so as to facilitate the development of the Project.

3.3 **Techno-economic justification**

The Feasibility Report shall include evaluation and assessment of the technical feasibility and economic justification and financial viability of the Project, including identification of the possible technical and commercial risks together with suggested mitigation options.

3.4 **Schedules of Concession Agreement**

The Consultant shall also be responsible for preparing the specified technical Schedules of the proposed Concession Agreement for the Project and for bringing out any special feature or requirement of the Project referred to in the Concession Agreement or the technical standards applicable for the Project under the Electricity Act , 2003 and the Indian

Electricity Rules, 1956, as amended, or the Regulations on Metering as notified by the Central Electricity Authority. The details and particulars to be specified in the Schedules shall be in accordance with the provisions of the relevant codes or regulations. Such provisions may be included in the Schedules by reference to the relevant provisions of the said codes/regulations and need not be reproduced.

3.5 System operation requirements:

3.5.1 The Consultant shall assess the technical standards applicable for the distribution system under the Electricity Act, 2003 and the rules made thereunder, as amended, and Regulations on Connectivity, Inter utility and Consumer Metering, Construction of Electric Lines, and Safety as notified by the Central Electricity Authority. It is assumed that a project of this scope would normally follow international standards. ISO recommendations shall govern the quality of project components, including design, engineering, equipment fabrication, and construction, testing and commissioning. It will be necessary to take into account the need for compatibility of the Distribution System with the transmission system.

3.5.2 The Consultant shall address the following aspects while defining the Project:

- (a) condition based preventive and restorative maintenance of the distribution lines;
- (b) requirement of spares;
- (c) emergency restoration system for the Distribution System and outage and trouble call management practices;
- (d) ancillary services requirements;
- (e) methodology for maximizing the quality of supply and reliability of the Distribution System; and
- (f) method for minimizing AT&C losses.

3.6 Operation and Maintenance Plan

The Consultant shall suggest the principal elements of an Operation and Maintenance (the “O&M”) plan for the Project. This may include facilities such as protection, communication, measurement, telemetry and interface equipment, probes and sensors required for connecting to other parts of the distribution grid as well as supervisory control and data acquisition (the “SCADA”) systems at the State, Regional and National levels to allow for the remote monitoring of equipment, to perform reliable and timely maintenance and to ensure safe, secure, stable, reliable and coordinated operation and maintenance of all the components of the Project. The Consultant is required to suggest periodic maintenance schedules for the Distribution System, including an indicative list of the diagnostic tools and testing equipments, etc.

3.7 Design, Technical Specifications and Construction standards

The Consultant will be responsible for preparing the preliminary design, technical specifications and construction standards of the Project, sufficient for awarding the Project on PPP basis. The detailed design is expected to be prepared by the selected concessionaire.

Based on the extant specifications and standards, the Consultant shall prepare the main characteristics and guaranteed technical particulars of the new equipment, including a description of the basic components of the Project – general layout, cross-section drawings, single line diagrams etc.

3.8 Cost Estimates

The Consultant will be required to prepare preliminary civil and electrical layout plans in sufficient detail to form the basis for the cost estimate(s). The Consultant shall prepare the cost estimates for the Project, including identification of the costs of the various system elements (such as cables, conductors, transformers, switchgears, capacitors, lightning arrestors and insulators, the control and communication system, engineering and project management, supervision and contingencies). The Project costs comprising the construction costs should be disaggregated by functional elements (sub-transmission, distribution lines, substations and distribution transformers etc.). To the total construction cost so arrived at, the Consultant may add 25% (twenty five per cent) thereof as a lump sum provision for physical and price contingencies, interest during construction and other financing costs, pre-construction expenses etc.

3.9 Project Implementation

The Consultant shall propose an overall implementation plan and schedule for the Project taking into account, system constraints and other relevant factors.

3.10 Financial Analysis

3.10.1 The financial analysis would be carried out by the Consultant assuming private participation, based on the inputs such as project costs, phasing of expenditures etc. The financial analysis would focus on (a) project level financial analysis, i.e., assessing the financial internal rate of return on the investment based on the benefits; and (b) the pricing of services. The relevant tariff determination orders of the appropriate Commission shall be used by the Consultant for his analysis. The financial analysis would deal separately with the energy charges and the wheeling charges. The Consultant shall also provide a preliminary assessment of the financial viability of the Project with a view to estimating the likely Internal Rate of Return (the “IRR”) over a concession period of 25 years.

3.10.2 The Consultant shall:

- (a) Calculate the IRR for the Project. It will undertake sensitivity analysis by identifying the most critical factors and determine their impact on the IRR, including varying project costs and benefits, implementation period, power demand, and combination of these factors; and
- (b) conduct a risk analysis, using the Monte Carlo method, by considering the possible values for key variables based on records, and their occurrence probability.

3.10.3 While undertaking the economic analysis and projecting the IRR, the following assumptions shall be adopted:

- (a) Capital cost shall be adopted as per estimates, to which 25% shall be added for physical and price contingencies, interest during construction, other financing costs etc.;
- (b) debt-equity ratio may be assumed as 70:30;
- (c) O&M costs may be assumed as per norms notified by the Authority/ State Electricity Regulatory Commission; and
- (d) the return may be calculated assuming the projected retail tariffs across consumer categories, separately for energy and wheeling charges. An important consideration in determining the projected tariffs would be the relevant tariff orders of the appropriate Commission.

3.10.4 If the IRR of the Project, based on the aforesaid calculations is less than 12% (twelve per cent), an effort should be made to reduce the capital costs in consultation with the Authority. This may be done either by omitting/ modifying some of the proposed investment schemes or by phasing them after a period of 5 (five) years or more, such that the IRR reaches a minimum of 12% (twelve per cent).

3.11 Stakeholder Consultations

Stakeholder consultations by the State Government and the Authority are an integral part of the project process. At a minimum, the Consultant will review the stakeholder consultations held by them and recommend administrative arrangements and requirements to ensure that the affected persons and communities understand the Project, its impact and the respective responsibilities of the various parties. Stakeholders should be allowed to participate in the formulation of development interventions by the Concessionaire to ensure that development plans adequately deal with their needs, priorities, and preferences. The Consultant will be required to:

- (a) Identify relevant stakeholders through a stakeholder analysis (existing employees would be important stakeholders);
- (b) assist the Authority and the State Government in organising consultations, during the pendency of the consultancy, with the stakeholders that shall be preceded by information dissemination, including in local languages;

- (c) document the discussions from consultative meetings and interviews; and
- (d) incorporate the relevant inputs from the stakeholder consultations in project development.

4. Deliverables

- 4.1 The Consultant shall deliver the following deliverables (the “**Deliverables**”) during the course of this Consultancy. The Deliverables shall be so drafted that they could be given to the prospective bidders for guidance in preparation of their bids. Twenty hard copies and two soft copies in CDs of all the final reports, drawings, etc. shall be submitted to the Authority. For draft reports, only five hard copies and one soft copy in CD shall be submitted to the Authority. The size of drawings shall be A-3 (maximum). For both the Draft and Final reports, the submission should be accompanied / preceded by making a PPT (Power Point Presentation) before the Authority explaining the detailed process and the outcomes etc.

A. Inception Report

Within a period of two weeks of commencement of the Consultancy, the Consultant shall submit an Inception Report. The Inception Report shall include the Consultant’s submissions towards understanding of the RFP and the Work Plan.

Within a period of six weeks of submission of the Inception Report, the Consultant shall submit a Supplementary Inception Report where it must clearly spell out the broad strategy for structuring the Project in a manner that would ensure its economic viability and justification. In this regard, the Consultant must make realistic assumptions about costs and revenues. The project components should be so formulated as to make the project viable. In determining its aforesaid strategy, the Consultant shall also seek the advice of the Authority. In the event that a viable project does not seem feasible for cogent reasons given to the Authority, the Consultant shall not proceed with the Consultancy and the same shall stand terminated. The Consultant shall be entitled to a payment of 10% (ten per cent) of the Agreement Value upon such termination.

B. Reports on Environmental and Social Impact Assessment

The Consultant shall submit reports on social impact assessment and environment impact assessment, including the plan for involuntary resettlement, if any, associated with land acquisition.

C. Feasibility Report

The Feasibility Report of the Project shall include, *inter alia*, all needed details collected, analyzed, estimated, and compiled in respect of the scope of work specified in paragraph 3 above, including the following:

- (a) *Investigation Reports*: Reports on the site survey of the Distribution System and GPS based route survey of distribution lines and substations including a schematic diagram showing the layout of the network on a topographical map of the Project Area and field investigations in about 6% (six per cent)² areas representing the Project Area.
- (b) *Technical design*: Preliminary design, drawings and preliminary engineering.
- (c) *Technical and commercial risks*: Report on technical, social, commercial and law & order risks together with suggested mitigation options.
- (d) *Relevant statutes*: Report on all the relevant regulations, codes, standards, rules, statutory requirements, provisions of law and other such relevant references.
- (e) *Preliminary costing*: Report on preliminary costing of the Project including investment and its phasing for provision of electricity 24X7, including estimated BOQs;
- (f) *Open access*: Phasing of open access for all consumers above 0.1 MW and all commercial consumers.
- (g) *System operation requirements and O&M Plan*: Report on the system operation requirements and O&M plan.
- (h) *Billing and collection*: Report on current billing, collections and receivables management practices, gap analysis and corrective measures.
- (i) *Report on Assessment of AT&C Losses*: This would contain information on AT&C losses, both existing and proposed, for the next five years.
- (j) *Implementation plan and schedule* including likely delays, if any, on account of land acquisition and/or other factors.

D. Schedules of the Concession Agreement

² In cities with a population of less than 10 lakhs, 6% (six per cent) may be substituted by 10% (ten per cent).

The Consultant shall separately provide the Technical Schedules of the Concession Agreement for the Project with supporting documentation relating to these Schedules.

E. Financial Analysis

The Consultant shall provide a preliminary financial assessment of the Project.

F. Assistance during Bid Process

The Consultant shall provide the required assistance to the Authority and its financial consultant and the legal adviser in preparation of bid documents. The Consultant shall also participate in Pre-bid Conferences and assist the Authority in clarifying the technical aspects of the Project and the Bid Documents, including the Feasibility Report.

5. Time and Payment Schedule

5.1 The total duration for preparation of the Feasibility Report and specified Schedules to the Concession Agreement shall be 18 weeks, excluding the time taken by the Authority in providing the requisite documents or in conveying its comments on the Draft Feasibility Report. The Consultant shall deploy its Key Personnel as per the Deployment of Personnel proposed. Intermittent services will be required beyond the 18th week and until the end of 52 weeks or two months after the signing of the Concession Agreement, whichever is earlier. The man-days required for the intermittent services shall be provided by the Consultant as per the Agreement.

5.2 Time schedule for important Deliverables (the “Key Dates”) of the Consultancy and the payment schedule linked to the specified Deliverables are given below:

Key Date No.	Description of Deliverables	Week No	Payment
KD1	Inception Report	2	Nil
KD2	Preliminary cost estimates	11	20%
KD3	Report on Environmental and Social Impact Assessment	12	20%
KD4	Draft Feasibility Report and Schedules to the Concession	16	30%

	Agreement		
KD5	Final Feasibility Report	18 [§]	20%
KD6	Completion of Services including assistance during Bid Process	52	10%
	Total		100%

[§]Excludes the time taken by the Authority in providing its comments on Draft Reports. The Consultant shall get two weeks for submission of the Final Feasibility Report after comments of the Authority are provided.

- 5.3 Mobilization Advance equal to 10% (ten per cent) of the total Agreement Value shall be paid on request against Bank Guarantee of a Scheduled Bank. This shall attract 8% (eight per cent) simple interest per annum and shall be adjusted against the first four bills in four equal instalments and the accrued interest shall be recovered from the fourth bill.
- 5.4 10% (ten per cent) of the Agreement Value has been earmarked as Final Payment to be made to the Consultant upon execution of the Concession Agreement.

1. Meetings

- 6.1 The Authority may review with the Consultant, any or all of the documents and advice forming part of the Consultancy, in meetings and conferences which will be held in **Jaipur** at the Authority's office. Further, the Consultant may be required to attend meetings and conferences with pre-qualified Bidders or the Selected Bidder. The expenses towards attending such meetings during the period of Consultancy, including travel costs and per diem shall be reimbursed in accordance with the Financial Proposal. The days required to be spent in **Jaipur** shall be computed at the rate of 8 (eight) man hours a day in case of an outstation Consultant. For a Consultant having its office within **Jaipur**, the time spent during meetings shall be calculated as per actual. No travel time shall be payable except in case of an expatriate Consultant who will be entitled to claim actual travel time, subject to a maximum of 10 (ten) man hours for a return journey.

7. Consultancy Team

- 7.1 The Consultant shall form a multi-disciplinary team (the "**Consultancy Team**") for undertaking this assignment. The following Key Personnel whose experience and responsibilities are briefly described herein would be considered for evaluation of the Technical Proposal. Other expertise such as that required for financial analysis, social impact assessment etc. for the Project shall be included in the Team either through the Key Personnel specified below or through other Professional Personnel, as necessary.

(a) Senior System Engineer-cum-Team Leader

Educational Qualifications	Graduate in Electrical Engineering
Essential Experience	15 (fifteen) years in planning, project preparation and design of distribution system projects.
Job responsibilities	He will lead, coordinate and supervise the multi-disciplinary team. It will be his responsibility to guide the team in arriving at solutions within the constraints specified in the TOR.
Minimum time required at site	40 (forty) days

(b) Distribution Expert

Educational Qualifications	Graduate in Electrical / Electronics / Mechanical Engineering
Essential Experience	7 (seven) years in analysis of condition of existing distribution systems and design of major distribution line systems.
Job responsibilities	He will be responsible for collecting all distribution system connected data relating to current operations, analysis thereof and suggesting improvements under the constraints described in the TOR and generally firming up the techno-commercial requirements of the Project.
Minimum time required at site	30 (thirty) days

(c) SCADA & Automation Expert

Educational Qualifications	Graduate in Electrical / Electronics/ Communication Engineering
Essential Experience	7 (seven) years in planning of SCADA project preparation and design of automation in transmission / distribution system projects.
Job responsibilities	He will be responsible for planning and assessing cost of

	SCADA & Automation in the Project.
Minimum time required at site	20 (twenty) days

(d) Surveyor

Educational Qualifications	Graduate in Civil/ Electrical Engineering or Diploma in Civil Engineering or Diploma in Surveying
Essential Experience	7 (seven) years in surveying, asset mapping and consumer indexing on Distribution system projects.
Job responsibilities	He will be responsible for carrying out the survey, and the works of asset mapping & consumer indexing of the Project.
Minimum time required at site	60 (sixty) days

(e) Financial Analyst

Educational Qualifications	Post Graduate in Commerce/ Chartered Accountant or equivalent.
Essential Experience	7 (seven) years in financial analysis and modeling of infrastructure projects.
Job responsibilities	He will be responsible for financial analysis and modeling of the Project.
Minimum time required at site	10 (ten) days

(f) Environmental and Social Impact Assessment Expert

Educational Qualifications	Masters/Bachelor in Environmental Science or equivalent
Essential Experience	7 (seven) years in environmental studies
Job responsibilities	He will conduct the environmental and social impact assessment of the Project
Minimum time required at site	10 (ten) days

7.2 The Consultant shall establish a Project Office managed by a Site Manager and other support staff at a suitable location in **Jaipur** for efficient and coordinated performance of its Services. Key Personnel as required from time to time shall be deployed, for the duration as necessary, at this office as specified in the Manning Schedule forming part of the Agreement. The authorized officials of the Authority may visit the Consultant's Project Office any time during office hours for inspection and interaction with the Consultant's Personnel. It is expected of the Consultant that it will carry out all the operations from the Project office during the first 18 weeks. However, it may operate from his Head/ Home office for the field data analysis and preparatory works and remaining consultancy services beyond the first 18 weeks.

7.3 The Consultant shall mobilize and demobilize its Professional Personnel and Support Personnel with the concurrence of the Authority and shall maintain the time sheet/ attendance sheet of the working of all Personnel in the Project Office. These time sheets/ attendance sheets shall be made available to the Authority as and when asked for and a copy of such record shall be submitted to the Authority at the end of each calendar month.

8. Reporting

8.1 The Consultant will work closely with the Authority. The Authority has established a Working Group (the "**WG**") to enable conduct of this assignment. A designated Project Director of the Authority will be responsible for the overall coordination and project development. He will play a coordinating role in dissemination of the Consultant's outputs, facilitating discussions, and ensuring required reactions and responses to the Consultant.

8.2 The Consultant may prepare Issue Papers highlighting issues that could become critical for the timely completion of the Project and that require attention from the Authority.

8.3 The Consultant will make a presentation on the Inception Report for discussion with the WG at a meeting. This will be a working document. The Consultant is required to prepare and submit a monthly report that includes and describes, *inter alia*, general progress to date; data and reports obtained and reviewed, conclusions to date, if any; concerns about availability of, or access to, data, analyses, reports; questions regarding the TOR or any other matters regarding work scope and related issues; and so on. The Consultants' work on the TOR tasks should continue while the report is under consideration and is being discussed.

8.4 Regular communication with the WG and the Project Director is required in addition to all key communications. This may take the form of telephone/ teleconferencing, emails, faxes, and occasional meetings.

8.5 The Deliverables will be submitted as per schedule provided in this RFP.

9. Data and Software to be made available by the Authority

Available data as may be required by the Consultant will be provided by the Authority on request. The Nodal Officer designated by the Authority shall facilitate handing over of such information as described in Attachment-A to the Consultant at the time of signing of Contract for Consultancy. Any other relevant data/ information that the Consultant may request within 2 weeks after signing of the Contract and as is readily available with the Authority will also be provided within 7 days of such request.

10. Completion of Services

10.1 All the study outputs including primary data shall be compiled, classified and submitted by the Consultant to the Authority in soft form apart from the reports indicated in the Deliverables. The study outputs shall remain the property of the Authority and shall not be used for any purpose other than that intended under these Terms of Reference without the permission of the Authority. The Consultancy shall stand completed on acceptance by the Authority of all the Deliverables of the Consultant and execution of the Concession Agreement or 52 weeks from the Effective Date, whichever is earlier. The Authority shall issue a certificate to that effect. The Consultancy shall in any case be deemed to be completed upon expiry of 1 (one) year from the Effective Date, unless extended by mutual consent of the Authority and the Consultant.

10.2 10% (ten per cent) of the Agreement Value has been earmarked as lump sum payment to be made to the Consultant upon execution of the Concession Agreement (the "**Lump Sum Payment**"). In consideration of the Lump Sum Payment, the Consultant shall provide such services to the Authority as may be necessary for concluding the Bid Process and execution of the Concession Agreement. In the event the Concession Agreement does not get executed within one year of the Effective Date, the Consultancy shall stand completed as specified in Clause 10.1 above, but no Lump Sum Payment shall be due to the Consultant, save and except the costs incurred for meeting its expenses during the period after expiry of 18 weeks from the Effective Date, including travel costs and personnel costs, at the agreed rates, which shall be reimbursed to the Consultant as per actual. For the avoidance of doubt, it is agreed that reimbursement of such costs on travel and personnel shall be due to the Consultant as aforesaid, even if the Concession Agreement is not executed.

Attachment A
(Refer para 3.2)

Information to be provided by the Authority

A1.1 The Authority shall provide the following to the Consultant on a best effort basis:

- (a) Jurisdiction Map, Single Line Diagram(s) of the Network/ and General Electrical Lay-Out (the “**GELO**”) of the Project Area;
- (b) Power Transmission and Distribution Map of **Jaipur** urban area, division-wise, as in 2011;
- (c) Output specifications of all equipment to be installed (to the extent feasible);
- (d) Eleventh and Twelfth Five Year Plans for the Power Sector (or latest available);
- (e) Load-Flow Studies up to 2013 (or latest available);
- (f) Prevailing environmental and Social Policies and Procedures;
- (g) Annual Accounts of the Authority for the last three years; and
- (h) Report on Electrical Power Survey of India: March 2010, Central Electricity Authority.
- (i) To the extent available, a detailed inventory of various classes of assets; physical condition of the existing assets, their aging profile etc (if comprehensive details are not available, provide details of a representative area).
- (j) Population profile and growth for last 10 years.
- (k) Consumer and connected load mix and category-wise revenue details for the last 5 years.
- (l) Season wise monthly and daily typical load curves for the last 3 years.
- (m) Detailed commercial data of the system, including sources, rates and quantum of power being provided to the area during the last 5 years.
- (n) Details of on-going or approved R-APDRP schemes being implemented in the **Jaipur** urban area.
- (o) Details of on-going or approved SCADA schemes being implemented in the Jaipur urban area.
- (p) To the extent available, feeder wise AT&C losses for the last 5 years.
- (q) Details of power demand, availability and gap in supply and demand for the last 3 years;

- (r) Category-wise employee details and age profiles as on April 1,2013;
- (s) Details of fatal/ non fatal accidents to human/ animals, near misses, unsafe acts, unsafe conditions, hazards and risks reported for the last 5 (five) years;
- (t) Transformer failure rate for the last 5 (five) years;
- (u) Norms of supply restoration time, meter connection and energization time, billing and commercial complaint handling time, etc.; and
- (v) Any other information requested by the Consultant and considered relevant by the Authority.

A1.2 The Consultant shall examine and suggest possible improvements in respect of any of the above reports, information material and analyses (including Land Plan, General Electrical Lay-Out, technical specifications of equipments and the civil and electrical engineering designs, etc.) that may be provided by the Authority to the extent it complies with customary standards of industry practice.