Amendment No. 1

RFP No.	**:** MSETCL/CO/D&E-S/DCM/RFP-1941
Name	**:** Selection of Project Management Consultant for providing consultancy services for Implementation of Corporate Level Data Warehouse in MSETCL

The bidders are requested to read following clauses from subject Request for proposal (RFP) and Terms of Reference (TOR) document as amended:

A. Following clauses are amended in Terms of Reference (TOR) :-

Clause : 2. Background

❖ **OLD**

MSECL has implemented automation in their sub-stations through SCADA implementation. There are about 700 substations of different types (440KV, 220KV etc).

❖ **REVISED**

MSETCL has implemented automation in several substations through SCADAS & plans to implement it in remaining substations

Clause : 3.Objective

❖ **OLD**

To develop and maintain the state of the art data acquisition, data monitoring and centralized control system to manage all operations of Power Transmission which should be integrated with existing MIS. The system should sustain high data transfer rate, high velocity storage and high response performance. All these capabilities with data are to be manifested through state-of-the-art Multilayer Data warehouse.

❖ **REVISED**

To develop and maintain the state-of-the-art C.D.W.S. having integration with existing MIS of MSETCL. The inputs to the CDWS shall include operational and non-operational data from substation SCADA/ Centralized Control Room SCADA, Remote access system of protection relays, asset data and manual data entry. The CDWS is to sustain high data transfer rate, high velocity storage & high response performance. All these capabilities with the data are to be manifested through multilayer CDWS which shall be utilized by Operations/Projects/Planning & Finance departments of MSETCL.

It is also envisaged that CDWS shall be source of data for several power sector analytical tools such as load flow studies, asset health analysis, fault analysis, trends of active & reactive power consumption & analytics reading & renewable energy generation.

Clause : 4.1 Scope of PMC

❖ **OLD**

- The PMC should understand the various aspect of the system which includes organization, users, existing system, and technical complexity.

- PMC should understand existing data generation and data flow, existing reporting system

- He should design and encourage next generation system, identifying component and overall specifications of component.

- PMC should complete blueprint of the project with all minute details which will be evaluated by owner/Agency on behalf of owner. The document should contain present and future storage requirement, hardware and system software requirement, application software requirement, listing of stakeholders and their views, integration with existing MIS, open and secure access of data warehouse, common unified format for the data which can be used by various types of software. The design plan should include possible uses of stream server, publish-subscribe model, stream analytics and time based data partitioning.

- PMC should make complete SRS for whole system in consultation with owner/Agency on behalf of owner

- PMC should advice MSETCL to prepare EOI/tender for Vendor.

- Testing components supplied by vender.

- Overall day to day monitoring of the Project and perform risk analysis and corrective action.

- Coordinate the training of the staff at various levels for system usage.

- The consultant shall help/assist the utility for floating the Tender. The entire project can be classified in four stages.
    1. Site survey or data collection for assessment of existing system or analyzing present practices with respect to CDW
    2. Tendering stage: This stage, the consultant has to prepare the detailed tender document for implementation of CDW and submit to the utility for approval for floating the same.
    3. Offer's analysis: This stage consultant has to scrutinize the offers received during the tender stage. Consultant will technically verify all the offers received, prepare the technical comparative document with scoring for different parameters and submit the same to the utility. Consultant will not involve in the process of award of the contract as it may be under sole discretion of the utility.
    4. Post bid stage: This stage, the consultant will coordinate with the successful bidder during tender process, will be guiding the successful bidder regarding the project process flow and time lines for completion of the project.

❖ **REVISED**

- The PMC should understand the various aspect of the system which includes organization,

users, existing system, and technical complexity.

- PMC should understand existing data generation and data flow, existing reporting system
- He should design and encourage next generation system, identifying component and overall specifications of component.
- PMC should complete blueprint of the project with all minute details which will be evaluated by owner/Agency on behalf of owner. The document should contain present and future storage requirement, hardware and system software requirement, application software requirement, listing of stakeholders and their views, integration with existing MIS, open and secure access of data warehouse, common unified format for the data which can be used by various types of software. The design plan should include possible uses of stream server, publish-subscribe model, stream analytics and time based data partitioning.
- PMC should make complete SRS for whole system in consultation with owner/Agency on behalf of owner
- PMC should advice MSETCL to prepare EOI/tender for Vendor.
- Testing components supplied by vender.
- Overall day to day monitoring of the Project and perform risk analysis and corrective action. **The PMC should also ensure that target system provides following essential properties**
    1. Accessibility : The PMC should ensure that the system should able to provide all access to all data in the open format which is generated by all sub-stations & which is required for decision making irrespective of the support of the vendor who has supplied the components.
    2. Durability: The PMC should ensure the system should provide full data guarantee irrespective of any type of hardware, network or any such failure. The PMC should list all types of failures and provide plan to overcome from such failures. The PMC should also ensure that there should not be any data loss due to operating conditions.
    3. Security: The PMC should ensure that the system should be full proof for any security hacks. The PMC should list all types of security attack and provide plan to overcome from such attacks.
    4. Scalability: the PMC should ensure that the system is scalable system at each level so that scalability should be achieved by adding components not by replacing them. The system should be designed to satisfy data needs for at least next 20 years.
    5. Functional Completeness: The PMC should ensure that the target system should be fully functionally complete and provide data & processing for fault diagnosis, fault analysis, fault prevention, fault prediction and total functional optimization which will include but not limited to functionalities like forecasting of future load, indicating asset health.
    6. Performance: The PMC should ensure that the system should have real time response and such measures should be provided for each level.
    7. External Interface: The system should be able to interact with external systems like MIS & GIS systems to accomplish total system optimization. It should also accommodate the external system like smart grid and should provide uniform data views.
    8. Standards: The components which will be used to provide build the system should

indicate recent standards.

9. Maintainability: The PMC should ensure that system can be fully maintained by the MAHATRANSCO in future. The PMC should ensure that the vendor should provide source code, full configurable software, data dictionary, data flows, documentation to incorporate new changes as well as operations, adequate training at each level. The PMC should provide documentation templates to make such documentation standard.

10. Controllability: The s/s system gateway hardware should be capable of controlling remote operations of S/s along with data acquisition & transfer capability.

11. Risk Management: The PMC should provide risk analysis in terms of technical feasibility, cost overrun & time delay at each stage of the project and plan to minimize such risks.

12. Testing

- The consultant shall help/assist the utility for floating the Tender. The entire project can be classified in four stages.
    1. Preparations & Submissions of blue print of the entire project including cost & implementation schedule.

    2. Tendering stage: This stage, the consultant has to prepare the detailed tender document for implementation of CDW and submit to the utility for approval for floating the same.

    3. Offer's analysis: This stage consultant has to scrutinize the offers received during the tender stage. Consultant will technically verify all the offers received, prepare the technical comparative document with scoring for different parameters and submit the same to the utility. Consultant will not involve in the process of award of the contract as it may be under sole discretion of the utility.

    4. Post bid stage: PMC shall co-ordinate with successful bidder for timely completion of the entire project including testing of the hardware & software.
- Coordinate the training of the staff at various levels for system usage

Clause : 4.2 Qualifying Requirement / Eligibility conditions of Project Management Consultant

❖ **OLD**

- The company should be infrastructure advisory and executioner in power sector with experience in project management in power sector in general and transmission sector in particular.

- The company should be proficient in data management and data governance required for the power sector in general and transmission sector in particular.

- The company should have working experience of 5 years at least with large public and private organizations on similar project as mentioned and successfully completed 2 projects including Smart-Grid/Analytics projects.

❖ **REVISED**

- The company should be infrastructure advisory and executioner in power sector or

equivalent with experience in project management in power sector or equivalent in general.

- The company should be proficient in data management and data governance required for the power sector or equivalent in general.
- The company should have working experience of 5 years at least with large public and private organizations on similar project as mentioned and successfully completed 2 projects including Smart-Grid/Analytics projects or equivalent.

Clause : 4.3.1 Technical Work Profile

❖ **OLD**

- Design and implementation of data warehouse of multiple levels and of sizes in the tune of hexabytes to petabytes and data marts design and implementation and installation strategies which includes for hardware as well as software.
- Ability to design system to control various components in substation from remote locations.
- Ability to integrate with the legacy systems.

❖ **REVISED**

- Design and implementation of data warehouse of multiple levels and of sizes in the tune of hexabytes to n-bytes and data marts design and implementation and installation strategies which includes design for hardware as well as software.
- Ability to design substation system hardware (Gateway) having capability of remote operations along with capability of data acquisition & transfer.
- Ability to integrate with the legacy systems/ MIS system.

Clause : 6. Deliverables

❖ **OLD**

   1. Cost estimation for implementation of Corporate Level Data warehouse.
3. Corporate Level Data warehouse implementation for MSETCL,

❖ **REVISED**

2   Cost estimation for implementation of Corporate Level Data warehouse along with end user application.
3   Corporate Level Data warehouse design along with end user application SRS and getting implementation done from vendor.

Clause : 7.1. Time Schedule

❖ **OLD**

The time period for completion of the entire project will be maximum of 1 year. The activity schedule to be given by PMC as per the following format:

Sl No.	Activity description	Time schedule
1		
2		
3		
4		
5		
6		
7		

❖ **REVISED**

The time period for completion of the entire project will be maximum of 1 year. The activity schedule to be given by PMC as per the following format:

Sr. No.	Activity description	Time schedule
1	Preparations & Submissions of blue print of the entire project including cost & implementation schedule / SRS for end user application.	3 months
2	Tendering stage: This stage, the consultant has to prepare the detailed tender document for implementation of CDW and submit to the utility for approval for floating the same.	1 month
3	Offer's analysis: This stage consultant has to scrutinize the offers received during the tender stage. Consultant will technically verify all the offers received, prepare the technical comparative document with scoring for different parameters and submit the same to the utility. Consultant will not involve in the process of award of the contract as it may be under sole discretion of the utility.	2 month
4	Post bid stage: PMC shall co-ordinate with successful bidder for timely completion of the entire project including testing of the hardware & software	12 month

Clause : 7.2 Payment Schedule

❖ **OLD**

The payment terms for the proposed project as follows

    1. Submission of Inception report : 10% of the order value

    2. Submission of Feasibility report : 10% of the order value

    3. Submission of Detailed project report or tender document preparation for the project : 15% of the order value

    4. Conducting a high level management workshop on the DPR : 10% of the order value

5. Submission of Final DPR along with budgetary estimate and BOQ for the proposed projects : 20% of the order value

6. Implementation of CDW : 25% of the order value

7.   Testing of CDW : 10% of the order value.

❖ **REVISED**

The payment terms for the proposed project as follows

Sr. No.	Activity description	Payment schedule
1	Preparations & Submissions of blue print of the entire project including cost & implementation schedule.	20% of order value
2	Tendering stage: This stage, the consultant has to prepare the detailed tender document for implementation of CDW and submit to the utility for approval for floating the same.	20% of order value
3	Offer's analysis: This stage consultant has to scrutinize the offers received during the tender stage. Consultant will technically verify all the offers received, prepare the technical comparative document with scoring for different parameters and submit the same to the utility. Consultant will not involve in the process of award of the contract as it may be under sole discretion of the utility.	20% of order value
4	Post bid stage: PMC shall co-ordinate with successful bidder for timely completion of the entire project including testing of the hardware & software	40% of order value

Clause : 9.1 Project Consultancy Team

❖ **OLD**

The PMC shall form a multi-disciplinary team (the "**Consultancy Team**") for undertaking this assignment as under:

Key Personal	Responsibility
Data Analytic Consultants/Experts	He will be responsible for the overall progress of the project; will lead the entire project team. He should have experience in handling data base structures for any reputed power system domain applications. He should have successfully completed the implementation of database structure design for any Data base system application under reputed projects of India in the past 3 years
Domain Analytic Consultants/Experts	He will be responsible for project implementation monitoring and relevant suggestions regarding power system domain. He should be Bachelor/ Master's Degree with more than 10 years of experience in power sector development.

❖ **REVISED**

The PMC shall form a multi-disciplinary team (the "Consultancy Team") for undertaking this assignment as under:

Key Personnel :	Data Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in IT/ Electronics / Computer Science
Experience	Should have experience in handling large data acquisition from machines, designing storage of large systems & providing analytical solution for large power system or equivalent field. He should have successfully completed the important projects of above characteristics in past three years.
Responsibility	He shall be responsible for overall progress & completion of the project & will lead the entire project team.

Key Personnel :	Domain Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in Electrical Engineering
Experience	Should have at least 10 years of experience in implementation of large Transmission Projects/ Operations & Maintenance of Transmission Systems/ Testing & Automation in Transmission Network
Responsibility	He shall be responsible for project implementation & monitoring. He will be responsible for giving relevant suggestion regarding power sector domain including relevant analytical tools.

B. Following clauses are amended in Request For Proposal (RFP) :-

Clause : 1.7 Schedule of Selection Process (point no.1 and 5)

❖ **OLD**
1. Downloading of Revised application documents - from 25.09.2017.

5. Proposal Due Date or PDD – 26.10.2017 (up to 11.30 Hrs)

❖ **REVISED**
1. Downloading of Revised application documents - from 26.10.2017.

5. Proposal Due Date or PDD – 09.11.2017 (up to 11.30 Hrs)

Clause : 2.1.3 Key Personnel

❖ **OLD**

The Consultancy Team shall consist of the following key personnel (the "**Key Personnel**") who shall discharge their respective responsibilities as specified below:

Key Personal	Responsibility
Data Analytic Consultants/Experts	He will be responsible for the overall progress of the project; will lead the entire project team. He should have experience in handling data base structures for any reputed power system domain applications. He should have successfully completed the implementation of database structure design for any Data base system application under reputed projects of India in the past 3 years
Domain Analytic Consultants/Experts	He will be responsible for project implementation monitoring and relevant suggestions regarding power system domain. He should be Bachelor/ Master's Degree with more than 10 years of experience in power sector development.

❖ **REVISED**

The Consultancy Team shall consist of the following key personnel (the "**Key Personnel**") who shall discharge their respective Qualification, Experience and Responsibilities as specified below:

Key Personnel :	Data Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in IT/ Electronics / Computer Science
Experience	Should have experience in handling large data acquisition from machines, designing storage of large systems & providing analytical solution for large power system or equivalent field. He should have successfully completed the important projects of above characteristics in past three years.
Responsibility	He shall be responsible for overall progress & completion of the project & will lead the entire project team.

Key Personnel :	Domain Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in Electrical Engineering
Experience	Should have at least 10 years of experience in implementation of large Transmission Projects/ Operations & Maintenance of Transmission Systems/ Testing & Automation in Transmission Network
Responsibility	He shall be responsible for project implementation & monitoring. He will be responsible for giving relevant suggestion regarding power sector domain including relevant analytical tools.

Clause : 2.2.2 (i) Technical

❖ **OLD**

1. The company should be working for last 5 years in the field of **Software and Database Consultants** with Electricity boards in India.

2. The bidder should have the experience of analysis/studies of large Electrical power system network such as national Grid Data/LDC data etc. for the Distribution & Transmission Utility in India. The perspective bidder shall also have the adequate knowledge of power sector operation and working of the state utility in managing the demand. Necessary documentary evidence along with the work completion certificate OR purchase order copies shall be enclosed along with the tender.

4 Team should comprise the members having experiences as per the following table:

Data Analytic	PG in IT/Electronics/Computer science with 10 years of power sector experience	Two
Domain Analytic	PG in IT/Electronics/Computer with 10 years' experience of Power transmission Sector.	Two

❖ **REVISED**

1. The company should have completed at least three major projects in the field of Data Warehousing preferably in power sector or in equivalent field in past five years. Necessary documentary evidence along with work completion certificate shall be enclosed with the tender.

2. The qualification & experience of key personnel of the company should be commensurate as given in section 2.1.3.

3. Company should have development/support centre in India for supporting the project at any given point of time during the project execution.

4. The Project Team of the company should comprise the members with qualification & experience as given in following table:

Key Personnel :	Data Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in IT/ Electronics / Computer Science
Experience	Should have experience in handling large data acquisition from machines, designing storage of large systems & providing analytical solution for large power system or equivalent field. He should have successfully completed the important projects of above characteristics in past three years.

Key Personnel :	Domain Analytic Consultant/Expert
Qualification	B.Tech / M.Tech in Electrical Engineering

Experience	Should have at least 10 years of experience in implementation of large Transmission Projects/ Operations & Maintenance of Transmission Systems/ Testing & Automation in Transmission Network

5. MSETCL shall follow the principles of a Quality and Cost Based Selection (QCBS) process for identification of 'Preferred Bidder'.

6. The applicant shall furnish contact particulars of the relevant Officers of the clients for which the above works have been executed, to enable MSETCL to verify the claim of the applicant.

7. The applicant should also furnish the following;

a. Successful completion certificate mentioning start and end date of the work duly signed by the client organization's project in-charge / any equivalent officer / the authorized signatory.

b. Copies of work orders / contracts from the client stating the project title, project value and the brief scope of work of the project.

c. If the applicant firm has completed projects as JV with some other firms, weightage shall be given as per the JV share. However, if the applicant firm has executed the project as associate with some other firms, 25% weightage shall be given to the applicant firm for the projects completed under such association.

This amendment provides for an **extension** in the Proposal Due Date (PDD) to **Thursday, November 9, 2017, 11:30 Hrs**.

All other terms and conditions remains the same.

sd/-

Chief Engineer
(Design, Contracts & Monitoring)