

CENTRAL ELECTRICITY REGULATORY COMMISSION
3rd Floor, Chanderlok Building, 36Janpath,
New Delhi-110001

No. MIS 1/2020-CERC

Dated, the 11th February 2021

Engagement of Corporate Consultant for
“Development of AI Based Regulatory Expert System Tool (REST) for
Central Electricity Regulatory Commission”
Terms of Reference (TOR)

1. Purpose of the Document:

1.1 This TOR Document is floated by the Central Electricity Regulatory Commission (also referred to as “CERC” or “the Commission”)to select a corporate consultant working in domain of Artificial Intelligence (AI), Machine Learning NLP (Natural Language Processing) to develop AI-based Regulatory Expert System Tool (REST) for CERC for the purpose of building institutional memory and for creation, reference and intelligent retrieval of information/documents to assist the Commission in discharge of its functions under the Electricity Act,2003 (in short, “the Act”).

2. Introduction:

2.1 CERC, as the central power sector regulator has been vested with various functions under the Act, which inter alia include framing regulations; determination of tariff of Central Generating Stations, inter-State generating stations and inter-State transmission of electricity, grant of licence for inter-State trading and transmission of electricity; regulation of inter-State transmission of electricity; formulation of the Grid Code; open access and market development; and adjudication of disputes. CERC discharges its functions as per the mandate of the Electricity Act, 2003 by notifying various regulations, granting licence and undertaking adjudication. CERC performs the role of a quasi-judicial authority and adjudicates upon disputes covered by the Act which are brought before CERC in the form of petitions. Over the years, the number of petitions filed before CERC have increased manifold which the Commission has also been disposing through its orders. Further, not only there has been a manifold increase in the number of orders, but also the orders issued by the Commission have ranged over increasing number of topics/issues. Therefore, monitoring and analyzing of such orders has become a challenging task for CERC. In addition, CERC regularly receives voluminous information from the regulated entities/ stakeholders/ nodal bodies that are important from the regulatory perspective. However, such information often contains inter-related data of complex nature that needs more analysis.

2.2 At present, data sources for CERC are CERC SAUDAMINI Portal (cerc-efiling.gov.in) and CERC website (www.cercind.gov.in).

2.3 Some of the challenges being faced in the existing MIS system are as follows:

- Lack of meaningful recommendations based on user's search history and those of other users, who did similar searches.
- Absence of intelligent search-based solution that provides easily searchable list of historical cases, citations etc.
- Lack of summary of each search result with ranking in terms of relevance along with metadata like date, case type, etc.
- Lack of ability to index various document types such as pdf, word, etc.,—and provide a taxonomy and semantic-based efficient search to find relevant documents from the existing repository.

3. Objective:

3.1 The objective of engaging the corporate consultant is to develop an AI-based Regulatory Expert System Tool (REST) for creation, reference and intelligent retrieval of information/documents to assist the Commission in discharge of its functions under the Electricity Act, 2003.

4. Scope of Work:

4.1 The Scope of the assignment will be to carry out the design, development, testing, deployment and maintenance of the AI-based Regulatory Expert System Tool. The broad scope of work of AI-based REST is as follows:

Module I: AI based Search

- i) Query completion- To guide users to use the right query, instead of only keywords.
- ii) Related searches- To guide users to use the query to get the best search results, as intelligent recommendations will be based on user's initial query. This would help users nail their searches quickly.
- iii) Related cases- When a user searches a case, he or she may like to explore other related cases. Suggestions within the search results (e.g. right under the description of the search result), can help users explore and find other similar case.
- iv) Deep indexing and analysis of data in case of documents in word, pdf etc., for key phrases and references etc., and provide related and recommended content.

Module II: Automatic Legal Document Creation & Assembly comprising of automated extraction of data to assist in preparation of fact sheets/ Record of Proceedings (ROP)/ orders/orders summary etc. for the Commission.

Module III: Process Automation & Data Visualization tool to automate the process like sending notices, ROPs, orders through email automatically on schedule and data visualization tool with dashboards for data trends, data analytics of regulatory compliance and petition status etc.

4.2 Activities: The major activities to be carried out to achieve the scope of work broadly cover the following:

- i) To conduct study of the existing systems and processes in respect of the functional requirements and the conceptualized REST.
- ii) User requirement gathering, preparation of Software Requirement Specification(SRS):

The SRS shall define the Solution Architecture Design for deploying the computerized system. The Solution Architecture design definition would essentially include the framework for

 - Design of User Interface Layer
 - Definition of Business Logic
 - Creating and managing the database /algorithms etc
 - View of Architecture for Deployment
- iii) Development, Testing and Hosting the system at CERC Data Center & NIC Meghraj Cloud.
- iv) Post go-live, handholding, removal of bugs, defects and small changes etc. in the system.

5. Detailed AI Based Regulatory Expert System Tool Components & Process Flow is attached at Annexure VI (Key Features of AI based Regulatory Expert System Tool):

5.1 AI-based Search

- Search that can parse documents & data by deep-indexing features that will provide intelligent search results.
- Suggest logical search attributes based on the search data being inputted. The attributes will act as guide to users to further narrow their results.

- Perform efficient search based on user's historic search patterns.
- Provide meaningful recommendations of similar content (cases) that exist in the database with the context reference.
- Integration with current SAUDAMINI portal (cerc-efiling.gov.in), cercind.gov.in and other data sources of CERC.

5.2 Additional System Features

- It should include consideration on textual as well as audio data.
- It should be a big data analytics system and should use relevant system architecture.
- It should be an AI-based system with components (whichever relevant) to be able to increase the outcome accuracy and performance with future learning.
- It should serve as a single data repository/institutional memory for all the data including CERC MIS system, CERC portals/websites and other disparate data sources like pdf (not in image format)/word/excel documents for intelligent (advanced AI-based search) analytics over existing data to speed up the order preparation process.
- It should serve both manual and automated search for relevant orders for any new reference petition.
- It should have provision to list and play audio/video recordings of past hearings available in the database.
- It should be scalable to any amount of data(at present, data size is about 2 TB) and further customizations/integrations around video, audio and textual content/data sources in future.
- It should be accessible from multiple client locations with role-based access.
- It should have a dedicated ACL module to provide role-based access to different category of users, with designated permissions as per the defined roles.
- It should be natively integrated with Facial Recognition System as needed.
- It should be designed on open source technology as far as possible and only in exceptional cases, it should have any 3rd party software dependency.
- It should have an intuitive User Interface (GUI) and should have separate options for searching relevant orders, creating summary report, issuing ROP, issuing order, sending hearing notice, dashboard and analytical reports.
- It should be able to collect data from MIS system to send hearing notices through emails automatically on schedule.
- It should be scalable to further additional third-party software/ data sources/ tool

integrations in future.

- It should have provision to create a dashboard in future to see visual data (graphs) based on statistics from MIS system and other data available in institutional memory.
- It should have provision to create a reporting section in future to export reports based on analytical data available in MIS system and Institutional memory.

6. Deliverables & Timelines:

6.1 Deliverables

- Regulatory Expert System Tool (REST) Source Code
 - Knowledge Transfer & Training
 - Software Requirement Specification (SRS)
 - Design Document
 - User Manual, Technical Manual, Installation Manual
 - One year warranty and production support after final deployment and go live.
- The warranty and production support shall cover all the deliverables which should be free from any bugs, defects in design and development, and minor changes, if any, required by CERC after using the System.

6.2 Timelines

- The assignment shall be completed within a period of 6 months from the date of signing of the agreement.
- The timelines for deliverables shall be strictly adhered to except where extension is allowed by Secretary, CERC. For delays, penalty/ liquidated damages as per clauses 8 and 9 of the Agreement will be applicable.
- Time is essence of the contract. In case of any delay on part of the Consultant, the Commission may, if need be, get the work done through an alternate source, at the cost of the bidder.
- The Consultant is expected to formulate the strategy regarding the presence of Team Members at CERC. The same shall be discussed and mutually agreed after the contract is awarded and as per the requirement of the Project.

7. Eligibility Qualification Criteria:

7.1 The bidder should have completed at least 3 (three) assignments in the last 5 (five) years involving the design and development of AI-based applications/solutions/tools. Documentary evidence in this regard shall be submitted by the bidder. In view of restrictions

in movement due to the prevailing Covid-19 pandemic, copy of email from previous clients can also be considered for project status update in case documentary evidence is not available.

7.2 The key staff of the bidder shall have professional qualifications and experience in the areas of Artificial Intelligence, ML & NLP. The bidder shall submit details of such staff who will handle the project.

7.3 The bidder shall be a firm or a start-up or a Micro, Small & Medium Enterprise (MSME) or a limited liability partnership or a Company registered in India. Documentary evidence in this regard shall be submitted by the bidder.

7.4 The bidder shall submit the methodology to be adopted for the proposed assignment.

8. Payment:

8.1 The Consultant shall be paid for the said assignment as per the following schedule:

Sl.No.	Stage	Percent of agreed amount
1.	Advance of the total fee of the system development at the time of signing agreement/ acceptance of the offer, subject to production of Bank guarantee for 10 % of amount to be valid till successful completion of work	10%
2.	Design, Development & Deployment of Module 1 of Regulatory Expert System Tool (REST)	25%
3.	Design, Development & Deployment of Module 2 of Regulatory Expert System Tool (REST)	25%
4.	Design, Development & Deployment of Module 3 of Regulatory Expert System Tool (REST)	25%
5.	On successful integration of all the modules in Regulatory Expert System Tool (REST) and acceptance of the same by the CERC with training and knowledge transfer.	15%

***Bank guarantee shall be released after successful completion of work.*

9. Bid & Bid Evaluation Criteria:

9.1 The bidders shall quote the rate exclusive of taxes which shall be over and above the quoted rates;

9.2 Any conditional bid is liable to be rejected;

9.3 The bidders should have a valid registered PAN/TAN and GST number;

9.4 Two separate sealed bids clearly marked as "Technical Bid" and "Financial Bid" are required to be submitted which shall be placed in one outer envelope clearly mentioning in

bold letters on top of envelope “**Development of AI Based Regulatory Expert System Tool (REST) for Central Electricity Regulatory Commission**”;

9.5 The format of application is at Annexure-I (for Technical bid) and Annexure-II (for Financial bid). The bidders are required to submit two (2) copies of Technical bid (each of which will be treated as original) along with the soft copy and one copy of Financial bid;

9.6 The bidder should not have been blacklisted or debarred by Government of India/ any State Government or Public Sector Undertakings and shall submit a declaration as per Annexure-III and a Certificate (as per Appendix- A);

9.7 The bids of the eligible bidders will be scrutinized by Consultancy Evaluation Committee (CEC) and shortlisted bidders will be called for interaction. The bidders shall be required to make a presentation and demonstrate Proof of Concept (POC)/past projects etc. before Consultancy Evaluation Committee (CEC) on the proposed Approach and Methodology. The total score will be obtained by adding the Technical component and Financial component;

9.8 The technical performance of the bidder shall be evaluated by the Consultancy Evaluation Committee on basis of the following criteria:

<i>Technical Parameters</i>	<i>Weights</i>
The bidders relevant experience for the assignment	40%
The quality of the methodology proposed	10%
The qualifications and experience of the key staff proposed	20%
Quality of presentation	30%
Total	100%

9.9 The minimum qualifying score shall be 70% for Technical component. Only those bidders who qualify technically, would be considered for Financial evaluation. The Financial bid of only technically qualified bidders will be opened;

9.10 Technical component will carry 70% weightage and financial component will carry 30% weightage;

9.11 Proposal with the lowest cost will be given a financial score of 100 and other proposals would be given financial scores that are inversely proportional to their prices;

9.12 CERC shall have the right to cancel the bid and/or reject any or all bids without assigning any reason thereof;

9.13 Any requests for extension of date for submission of bids will be at the sole discretion of CERC;

9.14 The successful bidder would be communicated the award of consultancy assignment. The successful bidder shall enter into an Agreement (as per Annexure-IV) and a Confidentiality/Non-Disclosure agreement (as per Annexure-V) prior to taking over the assignment and shall abide by the terms and conditions contained therein;

10. Termination of Contract:

The Consultant shall abide by the terms and conditions agreed to under the Agreements (Annexure-IV and Annexure-V) entered into by them. In case of non-performance or any breach/violation of any of the terms and conditions of any of the said agreement, CERC shall have the right to terminate the said agreement, in addition to the right to impose any penalty/liquidated damages.

For more clarification, answers to the queries/suggestions received from various bidders are enclosed at Annexure VII.

11. The address for submission of the bid/proposal and seeking any clarification through email (within the due date of submission of the TOR i.e. upto 1500 hours on 04th March , 2021) is given below:

The Secretary,
Central Electricity Regulatory Commission,
3rd Floor, Chanderlok Building,
36, Janpath, New Delhi – 110001
Email: secy@cercind.gov.in
Ph: 91-11-23353503 Fax: 91-11-23753923

Sd/-
(Sanoj Kumar Jha)
Secretary, CERC

Annexure - I
DETAILED PROPOSAL FOR ASSIGNMENT
(TECHNICAL)

Note: Two (2) copies of the proposal shall be submitted to Secretary, CERC.

I. GENERAL INFORMATION :

- 1) Title of the Proposed Assignment :
- 2) Name and address of the Organization/ Institution:
- 3) Name & Designation of the Key Person :
- 4) Contact address of the Key Person :
 - a) Address :
 - b) e-mail :
 - c) Telephone :
 - d) Fax :
 - e) Mobile No. :

II. TECHNICAL SPECIFICATIONS :

1. Net-worth/Turnover of the Organization/ :
Institution (To be supported by Annual Statement of Accounts of Last Financial Year)
2. Registered PAN/TAN and GST number of the Organization /MSMEs
3. Brief review of the experience in the relevant field (National and International).
4. Detailed Approach & Methodology for undertaking the assignment.
5. Facilities available for the proposed work in the applicant's organization/ institution
6. Previous experience of the applicant in this or related field
7. Biographical sketch of the System Development Team (for every team member)
 - (i) Name
 - (ii) Designation
 - (iii) Date of Birth
 - (iv) Education and Experience
- (v) Man days to be spent on this assignment

AA

A. Academic Qualification

Degree	University	Field(s)/Specialization	Year

B. Experience

- (1) Total Relevant Experience for the proposed assignment: Years
(2) Detailed Experience:

Institution	Topic of work done	Period

- (3) Field of major interest
(4) Additional information (if any)
8. Capacity to impart training/transfer of knowledge
9. Whether blacklisted/debarred for conducting studies or consultancy services, by any Government/semi-government/quasi-judicial agency, if so the details thereof:

[Undertaking to be given as per Annexure-III]

Signature of the Head of the Corporate Consultant

DETAILED PROPOSAL FOR ASSIGNMENT
(FINANCIAL)

I. GENERAL INFORMATION:

- i. Title of the Proposed Assignment :
 - ii. Name and address of the Organization/Institution :
 - iii. Name & Designation of the Key Person :
 - iv. Contact address of the Key Person :
(e-mail/fax/telephone)
1. Certificate of authorization in case of Institutes/other organizations (Format enclosed at Appendix-A).

II. Fee Proposed:

Amount of Fee proposed for:

Components	Basis	Amount (in Rs.)
I) System Development Charges Module I Module II Module III II) Suggested Third Party API/Software/ Licenses procurement if any(5 year cost) III) Misc./Others Charges (if any)		
Total		

(The amount quoted is exclusive GST)

(RUPEES _____)

Signature of the Head of the Corporate
Consultant

Declaration/Certification

To

The Secretary
Central Electricity Regulatory Commission,
3rd Floor, Chanderlok Building,
36, Janpath, New Delhi - 110001
Ph: 91-11-23353503 Fax: 91-11-23753923

Sir,

I have carefully gone through the Terms & Conditions contained in the Terms of Reference (TOR) regarding study on “**Development of AI Based Regulatory Expert System Tool (REST)**”pronounced by Central Electricity Regulatory Commission”. I hereby declare that my firm has not been debarred/blacklisted by any reputed Government/Semi Government Organizations from conducting Studies or consultancy services within last three years nor is there any pending dispute in this regard. I further certify that I am an authorized signatory of my company/firm and therefore competent to make this declaration.

Yours sincerely

Name: _____

Designation: _____

Company/firm: _____

Address:

CERTIFICATE

The undersigned agree to abide by the conditions of the agreement and certify that available facilities for proposed work shall be extended to the investigator/study team.

Signature of the Competent Authority of CERC	Signature of the Head of the Corporate Consultant
Name and Designation	Name and Designation
Date	Date
	Official stamp of Organization

On 100100 Stamp Paper

AGREEMENT

This AGREEMENT entered into on this ____ day of 2020 [here give the date of the agreement] BETWEEN _____ [give Name and full address of the Consultants who enters into agreement on behalf of the firm/company] hereinafter referred to as “the Consultants” or the party of the **First Part** (which term shall wherever the context permit include its successors and assigns) **AND** Central Electricity Regulatory Commission (herein after called "CERC") or the party of the „**Other Part**”(which term shall wherever the context permit include its successors and assigns) and represented by _____ (name and designation of the Officer signing this agreement) having its office at 3rd Floor Chanderlok Building, 36 Janpath, New Delhi -110001 WHEREAS

CERC, on being satisfied that there is a need to engage a [Corporate Consultant or Professional Expert] for the assignment of “**Development of AI Based Regulatory Expert System Tool (REST) for Central Electricity Regulatory Commission**”

- A. has invited quotations vide its notice [give here the details with date of the NIT/notice]
- B. On scrutiny of all the quotations received in response to the above NIT dated[], the quotation submitted by the Consultant [] vide Letter [give details with date of the quotation] emerged successful and accordingly, CERC has decided to engage the Consultant [] for the above said assignment in terms of the provisions of the Central Electricity Regulatory Commission (Appointment of Consultants) Regulations, 2008 as amended from time to time.
- C. The Consultant [] has by letter dated _____ (details of letter with date) unconditionally agreed to take up the above said assignment. The parties have therefore decided to put forward the terms of agreement in writing as stated below:

NOW THIS AGREEMENT WITNESSETH AS UNDER:

That the Parties to this Agreement have agreed to terms and conditions mentioned below:

1. Definitions:
 - i. “Commission” means the Chairperson and the Members of the Commission, including the Ex-officio member.
 - ii. “Confidential information” means any and all information but not limited to the information communicated to the consultant by the CERC duly marked so and as defined under the Confidentiality and Non-Disclosure Agreement.
 - iii. “Person” shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person;
 - iv. “Secretary” means the Secretary of the Commission.

2. Scope of work:

The scope of work assigned to the Consultant shall be as specified under clause 4 of the TOR

The consultant/professional expert shall be engaged as [Corporate Consultant or Professional Expert] for the assignment of “**Development of AI Based Regulatory Expert System Tool (REST) for Central Electricity Regulatory Commission**”The Scope of Work under the said assignment shall include, but is not limited to, the following:-

3. **Module I: AI based searching**

- i) Query completion- To guide users to the right query instead of only keywords. ii) Related searches - To help the users to use the query to get the best search results, as intelligent recommendations will be based on user's initial query. This would help users nail their searches quickly.
- iii) Related cases - When a user searches a case , he or she may like to explore other related cases.Suggestions within the search results (e.g. right under the description of the search result), can help users explore and find other similar case.
- iv) Deep indexing and analysis of data in case documents in word, pdf etc., for key phrases, keywords, references etc., and providing related and recommended content.

Module II: Automatic Legal Document Creation & Assembly comprising of automated extraction of data in preparation of Factsheets/ Record of Proceedings(ROP)/ orders/orders summary etc for the Commission

Module III: Process Automation & Data Visualization tool to automate the process like sending notices, ROPs, orders through email automatically on schedule and data visualization tool for data trends data analytics of regulatory compliance and petition status etc.

4. Commencement and duration of assignment:

The above assignment shall commence with effect from [the date of this agreement (or) specify the date] and shall be valid for a period of [here give the duration of the contract]

5. Obligations of the Consultant:

- (i) The Consultant shall adhere to the time-frame as specified in the Terms of Reference and shall submit the deliverables to the Secretary of the Commission.
- (ii) The Consultant shall make the presentations before the Commission as required by the Secretary.
- (iii) The Consultant shall ensure that the contents of the said assignment are strictly confidential and shall not be disclosed to any other authorities or person. The provisions of the confidentiality and nondisclosure agreement are applicable to these information.

[Here give any other responsibility to be discharged by the consultant].

- (iv) The Consultant shall provide the all reports and calculations in the report format as well as digital format as the CERC desires.(not clear)

6. Entitlements of the Consultants:

- (i) The Consultants shall be entitled to Rs. [Here give the amount payable and the schedule of payment and any other provision such as TDS, etc.];
- (ii) The mode of payment to the Consultant shall be as per Clause 6 of the Terms of Reference. If advance amount is not requested by the Consultant, 10% of the fee can be claimed at the end of the contract period on submission of the final report.
- (iii) The Consultant shall not be entitled to any other remuneration or reimbursement of perquisites or facilities.

7. Restrictive terms:

- (i) The Consultant further affirms and confirms that the current assignment is not and shall not be, in conflict with any of its present obligations to any party with whom he/she/it has association.
- (ii) The Consultant further affirms and confirms that he/she/it shall hold all Confidential Information in confidence and with the same degree of care he/she/it uses to keep his/her/its own similar information confidential, but in no event shall it use less than a reasonable degree of care; and shall not, without the prior written consent of CERC, disclose such information to any person for any reason at any time;
- (iii) CERC shall be entitled to, without prejudice to any other right for civil or criminal proceedings, receive from the Consultant [] a compensation for the damages for violation by him/her/it of any of the terms of the agreement which shall be limited to the total fee of the assignment.

8. Performance Guarantee:

The Consultant shall furnish an irrevocable Performance Bank Guarantee amounting to 10% of the value of (assignment) amount at the time of signing the agreement and the same shall be kept valid for 3(three) month after expiry of the agreement or completion of work whichever is later. In the event of extension of Assignment/Contract, the Performance Bank Guarantee furnished shall be suitably extended by the Consultant. The Performance Bank Guarantee and/or the extended Bank Guarantee shall be kept as security for performance of the contract work and shall if need be, invoked for breach of any of the terms of this Agreement and/or for non-performance of the terms of the contract.

9. Liquidated Damages:

The timelines for deliverables as per clause 5 above shall be strictly adhered to by the Consultant. The assignment shall be completed in a phased manner and overlapping of one or more study shall not be a constraint for adherence to the timelines specified. In case of any delay in adhering to the timelines for completion of the assignment or in case of any error/variation in the assignment submitted, liquidated damages shall be levied in the following manner.

9.1 **Liquidated Damages for delay and for error/ variation in the assignment report.**

In case of delay in the deliverables/schedule as per clause 5 and in case any error or variation is found in the assignment submitted to CERC by the Consultant and if such error or variation is found to be the result of negligence or lack of due diligence on the part of the Consultant, liquidated damages not exceeding an amount equal to 0.5% (zero point five per cent) per day of the agreement value, shall be imposed on the Consultant, from the payments to be made as per schedule, subject to a maximum of 10% (ten per cent) of the Agreement Value. However, in case of delay due to reasons beyond the control of the Consultant, suitable extension of time with no additional financial commitment shall be considered.

Prior to imposition of LD in case of error/variation, the Consultant may be issued notices to rectify the error/deficiencies as pointed out by CERC.

In the case of non-completion of the said assignment either in full or in case the assignment is partly completed, within the stipulated time or the extended time, CERC shall have the right to get the assignment (in full or in part) completed by another agency, at the risk and cost of the Consultants, in addition to the LD imposed as above.

In case significant deficiencies are noticed in services of the Consultant and in case these deficiencies cause or likely to cause adverse effect on the assignment or on the reputation of CERC, appropriate legal action, including debarring the Consultants for a specific period may be considered.

10. **Termination of Contract**

In addition to the imposition of LD as above, CERC has the right to terminate the agreement on account of non-performance or breach of the terms and conditions of the said agreement.

(i) Without any notice: The assignment may be terminated by CERC, any time, with immediate effect, under following circumstances.

(a) It has come to notice that the consultant/professional expert has been convicted for an offence involving moral turpitude or unethical professional practices. In such an event, the Performance Bank Guarantee shall be invoked in addition to any further legal remedy against the Consultant.

(ii) With one-month notice: The assignment may be terminated by CERC, under any of the following circumstances, by giving one month's notice and after providing an opportunity to the consultant/professional expert to offer explanation. In case the explanation is not satisfactory, the Performance Bank Guarantee amount shall be invoked/ encashed:

(a) It has come to the notice of the CERC that the consultant/professional has resorted to fraud or suppression of material information or submission of false information or unethical means to secure the assignment.

(b) It has come to the notice of the CERC that there is a material change in the circumstances of the Consultant based on which the assignment was awarded to the consultant/professional expert.

(c) The Consultant has failed to perform the assignment as per terms and conditions of the agreement; and

(d) The Consultant has violated or breached any of the provisions of the agreement.

(iii) The CERC and the Consultant shall have the option to terminate the agreement on „mutual consent’ by giving notice of one month to the other. This is however subject to adjustment of Liquidated Damages imposed if any, for any error/variation in the assignment or for delay in completion of the work as per deliverables/schedule in this agreement.

11. Effect of termination:

On pre-mature termination of the assignment at any time under circumstances other than those mentioned above, CERC shall pay the Consultants, the **consultation fee** only for the work performed by them till the date of such termination, subject to adjustment of any liquidated damages imposed by CERC as per terms of this agreement.

Provided that in case of any dispute as to what is the entitled **consultation fee** for the work, the matter shall be referred to arbitration under the provisions of this agreement.

12. Notice:

Any notice between the parties shall be in writing and posted to the other party to the last known address.

13. Arbitration:

- i) Any difference, dispute, claims which may arise between the parties hereto as to the construction or true intent and meaning of any of the terms and conditions herein contained or as to any payment to be made in pursuance hereof or as to any other matter arising out or as to any other matter arising out of or connected with or incidental to these presents or as to the rights, duties and obligations of any of the parties, such difference, dispute or claim shall be mutually settled amicably by the parties failing which the parties may resort by arbitration in terms of the Arbitration and Conciliation Act 1996 as amended from time to time. In the event of arbitration, CERC shall appoint sole arbitrator which shall be binding on the Consultant.
- ii) The venue of the arbitration will be Delhi/New Delhi and the language shall be English.

14. JURISDICTION:

In respect of any legal proceedings arising as a result of or relating to or incidental to this agreement, the courts in New Delhi alone shall have exclusive jurisdiction.

IN WITNESS WHEREOF, the Parties above named have executed this Agreement of the day, month and year mentioned hereinabove.

[The corporate consultant/
or on his behalf of]

[on behalf of the CERC]

in the presence of [witness]

the presence of [witness]

Signature

Signature.....

Name.....

Name

Signed by:

Signed by:

On Rs.100 Stamp Paper

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT entered into on this _____ day of, 2018 [here give the date of the agreement] BETWEEN [give the Name and full address of the Consultant or Professional Expert] hereinafter referred to as “the Consultant” or the party of the First part AND Central Electricity Regulatory Commission represented by (name and designation of the Officer) having its Office at 3rd and 4 the Floor Chanderlok Building, 36 Janpath, New Delhi -110001 (herein after called "CERC") or the party of the other part:

Whereas CERC has undertaken a bidding process for selection of a Consultant/Professional expert for the assignment of “**Development of AI Based Regulatory Expert System Tool (REST) for Central Electricity Regulatory Commission**”(hereinafter called “the assignment”) in accordance with the provisions of the Central Electricity Regulatory Commission (Appointment of Consultants) Regulations, 2008 and its amendments thereof;

A) Whereas, CERC, after evaluation of bids, decided to engage [name of Consultant] as the Consultant for the said assignment and the said Consultant has agreed to take up the above said assignment and has entered into an contract agreement on [Insert date] for undertaking the said assignment;

B) Whereas, CERC, desires to share business information which inter-alia include CERC information or business information of confidential or non-confidential nature to the Consultant for the purpose of the assignment for which the consultant agreed to enter into a confidential and non-disclosure agreement;

C) Whereas, the said Consultant has agreed to enter into a confidential and nondisclosure agreement in accordance with clause 8 of the Terms of Reference and Clause 6 of the Contract Agreement dated (Insert Date of Contract Agreement);

D) Whereas, CERC intends to lay down in writing the obligations of the Consultant with respect to the handling and disclosure of the business Information shared with or made known to the said Consultant by in connection with the said assignment.

NOW THIS AGREEMENT WITNESSETH AS UNDER:

In consideration of the mutual covenants and conditions set forth herein, the consultant, is legally bound and agrees as follows:

1. Definitions :

(a) “CERC Information or Business Information” includes, but is not limited to, information relating to tariff petitions, intellectual property, reply affidavits / rejoinders/objections, written submissions, technical and financial information, sources of information, strategic decisions and discussions, plans, datas, methods and approach, personnel and business relationships in respect of the functioning of CERC etc.

(b) “Commission” means the Chairperson and the members of the CERC including the Ex-officio member.

(c) “Confidential information” includes, but is not limited to business information and includes all and any information communicated to the said Consultant in writing or orally by CERC:

Explanation: The Confidential Information shall not include any information which (i) was already known to the consultant/professional prior to the time of disclosure by CERC as evidenced by written records, (ii) or is available or becomes available to the public, through any other source, other than through a breach of this Agreement by the Consultant /professional.

(d) “Person” shall include any company or body corporate or association or body of individuals, whether incorporated or not, or an artificial juridical person;

(e) “Secretary” means the Secretary of the Commission.

(f) “Effective Date” means the date from which this agreement is signed by the consultant/professional;

2. The Consultant/Professional expert agrees that:

(a) It shall use the business information including confidential information or non-confidential Information for the assignment and for no other purpose whatsoever;

(b) It shall take all necessary and appropriate steps to keep the business information including confidential and shall protect the confidential Information including: (i) restricting access to all confidential Information received, to those employees who have a “need to know” and advising such employees of their obligations to handle the Confidential Information with the highest degree of care and prudence to prevent any violation of this Agreement; and (ii) not using, disclosing, or allowing access to such Confidential Information by any third party, except as authorized by CERC in writing.

(c) It shall be liable for any breach of this agreement by any of its employees, employees of its affiliates or subsidiaries and by any Consultant, agent, or other third party to whom it has communicated the said business information including confidential Information.

3. Disclosure of information

3.1 If the Consultant/professional expert becomes legally required to disclose business information including confidential Information, or any part thereof, the Consultant will give CERC prompt notice of such requirement. Upon such notice or request, CERC shall either waive compliance to any of the terms of this agreement or if CERC is unable to obtain any order prohibiting disclosure of such business Information and made known to the consultant, only then the Consultant shall disclose that portion of the Confidential Information, which are necessary to ensure compliance of such legal requirement.

3.2 Any business information including confidential Information that is disclosed pursuant to a legal obligation as above shall maintain its confidential or restrictive access character if the disclosure does not result in the information becoming generally known or available to third parties, without restrictions on further disclosure. The Consultant shall have the responsibility to show that the information remains confidential based on the foregoing exceptions and must inform CERC within forty eight hours from the date /time of disclosure

upon such exceptions.

4. Rights on Information

4.1 The Consultant agrees that business information including confidential Information is and will remain the property of CERC and all such Information in tangible form and copies thereof will be returned promptly to CERC upon request of officer in charge or at the end of the assignment. In case, the consultant is required to hold on to the confidential information in furtherance of the assignment, then such copy shall be maintained in a safe and secure location by the said consultant. No use of such business information including confidential Information is permitted except as provided in this agreement, and the Consultant agrees not to rely upon, in any manner, the said confidential Information, except as authorized by this agreement. No grant of any of the CERC's intellectual property rights, including any license implied or otherwise, is given or intended to be given.

4.2 Any additional information provided by CERC to the Consultant for its evaluation, together with the tariff petitions and the information obtained by the Consultant/professional expert as a result of the scrutiny and examination thereof shall also be deemed to be confidential Information and is subject to this agreement. The interim report or analysis or deliverables made there from shall be returned or disposed of as directed by CERC.

5. Effective date and termination of the Agreement:

5.1 This Agreement will be effective as on the Effective date of (Insert Date) and will cover all the business information including Confidential Information disclosed to the Consultant by CERC subsequent to such date. This agreement shall remain valid for 10 years from and after the effective date of this agreement and from the termination of the agreement dated (Insert Date) unless extended by CERC in relation to the said assignment/Permitted Purpose.

5.2 The expiry of the agreement dated (Insert Date) does not give liberty to Consultant to disclose any information shared/disclosed by CERC and available with the consultant and/or their employees and the Consultant shall indemnify CERC to the extent of the breach of confidentiality and affecting the interests of CERC.

6. The Consultant acknowledges and agrees that the unauthorized disclosure or any other violation, or any perceived violation of this agreement by the Consultant will cause irreparable damage to CERC. The Consultant agrees that CERC has the authority to prohibit the Consultant/professional expert from any such disclosure, attempted disclosure, violation or perceived violation without the necessity of proving damage of its interests. The Consultant hereby agrees and indemnifies and holds the CERC harmless from and against all or any damage, losses and costs (including reasonable attorneys' fees) resulting from any such actual, attempted or threatened disclosure or perceived violation.

7. Neither this agreement nor anything disclosed or provided pursuant to this agreement shall create or should be construed to create, in any manner, any obligation to enter into any contract or business arrangement nor does it obligate either Party to purchase any service or item from the other or offer for sale any products using or incorporating Confidential Information.

8. The Consultant agrees and acknowledges that neither CERC nor its officers, employees, assigns or advisors make any representation or warranty (express or implied) as to the

accuracy and completeness of Confidential Information except as may be expressly represented or warranted in any subsequent agreement concluded between the Parties.

9. This Agreement may not be amended or modified, nor may any right or remedy of any Party be waived, except in writing and signed by such Party. The waiver by any Party of the breach of any term or provision hereof by any other Party will not be construed as a waiver of any other subsequent breach.
10. The rights and obligations of the parties pursuant to this Agreement shall be in addition to and shall not derogate from either party's obligations under any other agreement between them. In the event of any conflict between any provision(s) of this Agreement and those of any other agreement between them, the more restrictive provision(s) shall apply and the interpretation of CERC in this regard shall be final.
11. The Consultant affirms that the individual(s) executing this agreement on behalf of the said consultant has the authority to bind the Consultant to the terms hereof.
12. The consultant acknowledges and agrees that each and every term of this agreement is of the essence. If any one or more of the provisions contained in this agreement should be declared invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained in this Agreement shall not in any way be affected or impaired thereby so long as the commercial, economic and legal substance of the transaction contemplated hereby are not affected in any manner materially adverse to any Party. Upon such a declaration, the Parties shall modify this Agreement so as to carry out the original intent of the Parties as closely as possible in an acceptable manner so that the purposes contemplated hereby are consummated as originally contemplated to the fullest extent possible. However, the decision of CERC shall be final.

13. Arbitration:

- a) Any difference, dispute, claims which may arise between the parties hereto as to the construction or true intent and meaning of any of the terms and conditions herein contained or as to any payment to be made in pursuance hereof or as to any other matter arising out or as to any other matter arising out of or connected with or incidental to these presents or as to the rights, duties and obligations of any of the parties, such difference, dispute or claim shall be mutually settled amicably by arbitration through a sole arbitrator to be appointed by CERC.
- b) The Arbitration shall be conducted in accordance with the Arbitration and Conciliation Act, 1996 or any statutory amendments thereof. The venue of such arbitration will be Delhi/New Delhi. Arbitration shall be subject to English language.

14. Jurisdiction:

In respect of any legal proceedings arising as a result of or relating to or incidental to this agreement, the courts in Delhi/New Delhi alone shall have exclusive jurisdiction

IN WITNESS WHEREOF, the Parties above named have executed this Agreement on the day and month of the year mentioned hereinabove.

Signed by, [the consultant/Professional expert] for on behalf of.....] in the

Presence of

Witness

1.

2.

Signed by, for on behalf of CERC in the presence of

Witness

1.

2.

CERC AI Based Regulatory Expert System Tool (REST) Components& Process Flow

- I. Input component to take in Documents, text, drop-down menus etc.
- II. Integration layer
- III. A Core processing Engine:
 - A. Document templates and document creation engine
 - B. Institutional memory
 - C. Search Engine
 - D. Speech to Text conversion engine
 - E. NLP Algorithm (Natural Language processing)
 - F. Facial recognition system
- IV. Output system (Results and export system)

I) Input layer:

- a) The input section should consider taking user inputs as well as inputs directly from CERC SAUDAMINI Portal, CERC Website etc.
- b) The Input system should have a provision of taking a custom query as input by user for further processing over the data available in the system's institutional memory.
- c) The Input system should be able to take in documents like Petitions, Factsheets, ROP, Orders as input in editable word documents/PDF (in non-image formats) for further processing and searching relevant orders/other documents as results.
- d) The Input system should take in video recordings and/or audio recordings for draft ROP (Record of Proceedings) document preparation and Speech to text conversion.
- e) The Input layer should have specified filters to select and search relevant orders from institutional memory. The filters may include various parameters like Coram Members, Regulations, Petition type, Petition status, Petitioner name, Project type, asset name, relevant sections and keywords.

II) Integration Layer:

- a) The System designed should be integrated with MIS (Management information system) available and already functional at CERC. The MIS system and CERC website will be a key source of information for the resultant system's institutional memory.

- b) The System should be integrated with CERC web portal for accessing required information and download it as required.
- c) The System should be able to integrate with other structured and unstructured data file formats like Word, PDF (not in image format), excel, etc. to capture relevant information as and when needed.
- d) The System should be integrated in such a way that the data and information flow is smooth and flawless.

III) Core Processing Engine:

III A) Search Engine:

- a. The Search engine considered should be an elastic search engine
- b. The Search engine should have both custom query search, phrase search, document (browse and upload) search and drop-down menu search.
- c. The search engine should have relevant filters including Coram members, Regulation, Petition type, Petition status, Petitioner Name, Project Name, Asset name, relevant sections and keywords.
- d. The search engine should have automated search mechanism for document (petition) search and yield results as relevant in terms of:
 - i. Resultant orders by Petition no.
 - ii. Resultant orders by Petition type, Petition Status
 - iii. Resultant orders by Project type
 - iv. Resultant orders by Project name, location, etc.
 - v. Resultant orders by Petitioner
 - vi. Resultant orders by Petitioner versus Main Respondent
 - vii. Resultant orders by Coram
 - viii. Resultant orders by Petition Status
 - ix. Resultant orders by Keywords
 - x. Resultant orders by Regulation
 - xi. Resultant orders by Relevant Electricity Act sections
 - xii. Resultant orders by Asset Name
 - xiii. Resultant orders by Similar Petitions/Review Petitions/IA through Natural Language Processing, Understanding and Interpretation (NLP/NLU/NLI)

- xiv. Resultant Orders sorted by Relevance Percentage/Score w.r.t. relevance between the new petition and orders in the database.
- e. The search engine should have provision to refine search results (search on search mechanism) appeared by enabling/disabling filter options.
- f. The search engine should also provide a preview with search results to understand the relevance of document before opening it.
- g. The search engine should list relevant results in the order of their relevance through a relevance score. This scoring system will be developed after a detailed discussion with CERC officials.

III B) Institutional Memory:

- a) The system should have a provision of a dedicated institutional memory for storing all relevant data and to process the same for different desired outcomes.
- b) The institutional memory should receive data constantly from different data sources as specified in this document.
- c) The institutional memory should be able to store both Textual and Audio-visual data formats.
- d) The institutional memory designed should be scalable in future to accommodate increasing amount of data in both Textual and Audio-Visual formats.
- e) The institutional memory should be designed to keep the space optimized and should be easily accessible at all the point of time.
- f) The institutional memory components should be designed in the best possible way to provide search results in least possible amount of time.

III C) Document Templates and Document creation engine:

- a) The Document creation engine should have templates for Summary report (Factsheet), ROP (Record of Proceedings) and Draft Orders.
- b) The document creation engine should work on automated creation of a Summary report draft from any new petition received.
- c) The document creation engine should provide an automated ROP draft based on the ROP document template, proceedings records, summary report and petition as existing already.

- d) The proceeding records so available for ROP creation will be in Audio or Audio-visual file formats and the system should be able to conduct Speech to Text for the draft preparation.
- e) The system should be able to automatically create a draft order utilizing the petition received, summary report, ROP(s) and draft orders. System can also use other relevant orders from the institutional memory for reference.
- f) The System should provide all created draft document including Summary report, ROP(s) and Order draft for final manual supervision and proof-reading for final document preparation.
- g) System should utilize NLP techniques to understand, interpret and process the data for automated document creation with maximum accuracy.

III D) Speech to Text conversion engine:

- a) The System should have a provision for Speech to Text conversion to automatically convert Audio/Audio-visual data to text.
- b) The System should be able to identify the speaker from the Audio/Audio-Visual data to utilize the same information for ROP document preparation.
- c) The system should be an AI (Artificial Intelligence) based system and be able to learn new datasets (Speech data) in future to identify new speakers.
- d) The system if required should be able to learn new content (Legal content, relevant for CERC) in future.
- e) System should have Speech to Text as native algorithm/component to the core processing engine and should be seamlessly integrated with it.

III E) NLP (Natural Language Processing):

- a) The system should be an AI based system with a provision to carry out Natural Language Processing through Natural Language Understanding and Interpretation.
- b) The system should have NLP as key component and should be natively integrated.
- c) The system should have provision to further learn new data and interpret in future as and when needed.
- d) The System should be able to predict the outcome of the petition as accurately as possible through the native NLP algorithm.

- e) The system should have NLP as source of Auto-Correct/Auto-Suggest while working on any document creation including Summary report, ROP or Order.
- f) The NLP component should be able to understand different pronunciations of same word by different people and interpret the same while creation of the documents, specifically an ROP.
- g) The NLP engine should have a logical mechanism to understand the relevance between 2 statements. It should not only depend on matching keywords in 2 statements but the theme of the statement to be similar as well.

III F) Facial Recognition System:

- a) The system should have a Facial recognition system to assist speaker identification during ROP creation.
- b) The Facial recognition system should be able to accurately recognize the faces of the multiple people in any video stream.
- c) The Facial recognition system should be able to recognize the faces in live video stream, a recorded video stream or offline images to the images saved in the database for identification of the person.
- d) The facial recognition system should be able to differentiate between the CERC Officials, Petitioner and Respondents.
- e) The system shall use the Artificial Intelligence based Deep learning mechanism for detection, search and recognition solution that uses a stored database of faces to detect, recognize and record people's faces that appear in a camera's field of view for facial recognition.
- f) The system should be able to interact with the image database flawlessly and should be able to perform Facial recognition over newly added images as well.

IV) Output Section (Results and Export section):

- a) The output section should be able to provide display results as per the search criteria provided.
- b) The output section should be able to export the search results with selection.
- c) The output section should be able to export the metadata of search results in a CSV or Excel format.
- d) The search results should be in HMTL formats.

- e) The search results should have hyperlink (for direct and quick reference) to the relevant regulations, review petitions mentioned and other relevant content as specified and required.
- f) The output section should have Summary reports, ROPs and Orders as additional outcomes of different processes outlined earlier.
- g) The output section will allow the outputs as drafts (Summary report, ROP and Orders) to be exported to word and PDF formats.
- h) The output section will allow the outputs as drafts to be reviewed and amended before final export in a small view and edit panel.
- i) The output section will suggest outcomes of the case based on pattern . . .
- j) The output section will provide data analytics dashboard of number of petitions based on various parameters like Petition Type, Petition Status, Number of Hearings etc.

Programming Platforms (As relevant):

- Programming Languages: PHP, HTML5, CSS3, Python, C++, OpenCV, PyTorch, Tensorflow or similar/relevant
- Technologies: Artificial Intelligence, Machine Learning, Big Data Analytics, Natural Language Processing
- Database: Elastic Search, Apache Solr, PostgreSQL or similar/relevant
- Others: Apache spark, Pyspark, Hadoop or similar/relevant

Important Links for Reference:

<http://www.cercind.gov.in/> (For Sample ROP, Orders, Regulation Documents)

<https://cerc-efiling.gov.in/cerc/> (Online Help Section - For Sample Domain Knowledge and search parameters)

<https://www.manupatrafast.com/> (For Sample AI Searching User Interface & Features)

<http://apps.powergridindia.com/cerc/> (For Sample Petitions Documents)