

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO. LTD.

CIN No.: U40109MH2005SGC153646

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Ref: MSETCL-9020/CO/CE-STU/EOI/

No - 6331 Date: 14 JUL 2025

NOTIFICATION

Invitation for Expression of Interest (EOI) for Appointment of agency to provide services related to compilation & processing various data using a suitable, latest modelling & Simulation software & preparation of reports for compliances to MERC as per provisions of RA Regulation, 2024.

DISCLAIMER:

The information contained in this Expression of Interest ("EOI") document or subsequently provided to Parties whether verbally or in documentary or any other form by or on behalf of STU, MSETCL or any of their employees or advisors, is provided to Parties on the terms and conditions set out in this EOI and such other terms and conditions subject to which such information is provided.

This EOI is not an agreement and is neither an offer nor invitation by MSETCL to the prospective Parties or any other person. The purpose of this EOI document is for exploration of competent Agency and discovery of competitive rates for floating of RFP to provide services related to compilation & processing various data using a suitable, latest modelling & Simulation software & preparation of reports for compliances to MERC as per provisions of RA Regulation, 2024 . This document provides interested parties with relevant information that may be useful to them in preparing their proposal pursuant to this EOI.

This EOI includes statements, which reflect various assumptions and assessments arrived at by STU, MSETCL in relation to the assignment. Although every attempt has been made to include all relevant information, such assumptions, assessments and statements do not purport to contain all the information that each Party/entity may require.

This EOI may not be appropriate for all persons, and it is not possible for MSETCL, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this EOI.

The assumptions, assessments, statements, and information contained in this EOI may not be complete, accurate, adequate, or correct. Each entity/Party should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements, and information contained in this EOI and obtain independent advice from appropriate sources.

Information provided in this EOI to the Parties is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The STU, MSETCL accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The STU, MSETCL, its employees and advisors make no representation or warranty and shall have no liability to any person, including any entity/Party under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this EOI or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the EOI and any assessment, assumption, statement or information contained therein or deemed to form part of this EOI or arising in any way in the process.

The STU, MSETCL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any entity/Party upon the statements contained in this EOI. MSETCL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this EOI. The issue of this EOI does not imply that MSETCL is bound to select a Party/entity or to appoint the Party for the Project and MSETCL reserves the right to reject all or any of the entity/Party or response documents without assigning any reason whatsoever.

The entity/Party shall bear all its costs associated with or relating to the preparation and submission of its response document including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by MSETCL, or any other costs incurred in connection with or relating to its response document submission. All such costs and expenses will remain with the entity/Party and MSETCL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by entity/Party in preparation or submission of the response document, regardless of the conduct or outcome of the selection process.

Background:

Maharashtra Electricity Regulatory Commission made Resource Adequacy Regulations, 2024. The objective of these Regulations is to enable the implementation of Resource Adequacy framework by outlining a mechanism for planning of generation and transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix. Provided that the planning of transmission resources shall be consistent with “MERC (State Grid Code) Regulations, 2020” and amendments thereof. The Resource Adequacy framework shall cover a mechanism for demand assessment and forecasting, generation resource planning, procurement planning, and monitoring and compliance.

These Regulations shall apply to the generating companies, distribution licensees, State Load Despatch Centre, State Transmission Utility, full transmission Open Access participants, and other grid connected entities and stakeholders within Maharashtra. Provided that distribution licensees shall consider demand of partial open access consumers while forecasting their demand for RA planning.

Resource Adequacy framework shall cover following important steps:

- a) Demand assessment and forecasting;
- b) Generation resource planning;
- c) Procurement planning;
- d) Monitoring and compliance.

Purpose:

The distribution licensee shall develop and prepare Long-Term Distribution Resource Adequacy Plan (LT-DRAP), Medium-Term Distribution Resource Adequacy Plan (MT-DRAP), and Short-Term Distribution Resource Adequacy Plan (ST-DRAP) in accordance with the conditions outlined under the Regulations. 5.5. The distribution licensees, State Transmission Utility and State Load Despatch Centre shall provide requisite information and data including demand forecasts for a period up to 10 years to various Agencies to enable Central Electricity Authority and Grid India/NLDC to undertake LT-NRAP and ST-NRAP studies, respectively, as per CEA RA Guidelines.

Based on the MT-DRAP and ST-DRAP, STU and MSLDC shall communicate the state-aggregated capacity shortfall to the Commission by 15th September of each year for the ensuring year(s) and advise the distribution licensees to commit additional capacities. The Commission shall approve RA plans by 30th September of each year.

Distribution licensees shall comply with the RA requirement and in case of non-compliance, appropriate non-compliance charge shall be applicable for the shortfall for RA compliance.

For shortfall in RA compliance, MSLDC shall levy and collect non-compliance charge from the concerned Distribution Licensee.

The rate of Non-compliance charges shall be equivalent to 1.1 times the Marginal Capacity Charge (Rs/kW/month) or 1.25 times the Average Capacity Charge (Rs/kW/month) whichever is higher, as approved by the Commission for the power procurement by concerned distribution licensee under its ARR/Tariff Order for the relevant financial year, unless separately specified by the Commission.

The distribution licensee shall not be allowed to recover such non-compliance charge as part of its ARR.

Distribution licensees shall maintain and share with STU/MSLDC all data related to demand assessment and forecasting such as but not limited to consumer data, historical demand data, weather data, demographic and econometric variables, T&D losses, actual electrical energy requirement and availability including curtailment, peak electricity demand, and peak met along with changes in demand profile (e.g.: agricultural shift, time of use, etc.), historical hourly load shape, etc.

Distribution licensee shall maintain at least past 10 years of statistics in its database pertaining to consumption profiles for each class of consumers, such as domestic, commercial, public lighting, public water works, irrigation, LT industries, HT industries, railway traction, bulk (non-industrial HT consumers), open access, captive power plants, insights from load survey, contribution of consumer category to peak demand, seasonal variation aspects, etc. shall also be shared.

MSLDC shall maintain the licensee-specific as well as aggregate for state as whole, the statistics and database pertaining to aggregate demand assessment and forecasting data mentioned above and share state-level assessment with the Authority and the NLDC for national assessment from time to time.

The distribution licensee shall share information and data pertaining to the existing and contracted capacities with their technical and financial characteristics including hourly generation profiles to with STU and MSLDC for computation of state-level capacity credit factors and for preparation of state-level assessment.

MSLDC and STU shall aggregate generation data and share state-level assessment with the Authority and NLDC for assessment of RA requirement.

STU shall communicate allocation of national RA requirement to the distribution licensees.

As per RA Regulation 2024, Distribution licensees shall submit demand forecasts to MSLDC by 30th April of each year for the ensuring year(s). MSLDC shall aggregate and submit state-level forecasts to the Authority and the NLDC by 31st May of each year for the ensuring year(s).

Distribution licensees shall perform MT-DRAP and ST-DRAP exercise by 31st August of each year for the ensuring year(s).

STU and MSLDC shall communicate the state-aggregated capacity shortfall to the Commission by 15th September of each year. MSETCL and MSLDC shall communicate state-aggregated capacity shortfall to the Commission by 15th of September of each year for the ensuing year(s). The Commission shall approve RA plans by 30th September of each year. MSETCL and MSLDC shall submit state-level aggregated plan to RLDC/NLDC by 31st January of each year.

Key Roles and Responsibilities of State Transmission Utility (STU) under Resource Adequacy (RA) Regulation 2024.

1. Aggregation and Communication

- **Data Aggregation:** STU, along with MSLDC, shall aggregate generation data and shares state-level assessments with the Authority and NLDC for RA requirement assessment.
- **Communication:** STU shall communicate the allocation of national RA requirements to the distribution licensees.

2. Timelines and Reporting

- **Capacity Shortfall:** STU and MSLDC shall communicate the state-aggregated capacity shortfall to the Commission by 15th September each year.
- **Approval:** MERC will approve RA plans by 30th September each year.

3. Resource Adequacy Planning

- **Allocation:** STU shall allocate each distribution licensee's share in the state peak based on the average of the share in state coincident peak demand (CPD) and non-coincident peak demand (NCPD) for medium-term and short-term RA.

4. Compliance and Monitoring

- **Monitoring:** STU shall monitor compliance with RA requirements and checks for any slippages by states.

5. Coordination

- **Coordination with MSLDC:** STU shall work closely with MSLDC to ensure accurate data aggregation and communication of RA requirements and capacity shortfalls.

Use of software tools in Resource Adequacy (RA) planning for the State Transmission Utility (STU):

1. Demand Forecasting and Load Analysis

- **Hourly/Sub-hourly Forecasts:** Creating detailed demand forecasts on an hourly or sub-hourly basis, which is essential for accurate RA planning.
- **Scenario Analysis:** Simulation of various demand scenarios (e.g., most probable, business as usual, aggressive) to understand potential future demands and prepare accordingly

2. Generation Resource Planning:

- **Capacity Crediting:** Calculation of Capacity Credit (CC) factors for different generation resources, including renewable energy sources like wind and solar.
- **Resource Mapping:** Mapping existing, upcoming, and retiring resources, considering their characteristics and parameters such as heat rate, auxiliary consumption, ramp rates, and availability factors

3. Optimization and Simulation:

- **Optimal Resource Mix:** Optimizing the generation mix to ensure the most cost-effective and reliable supply of electricity, considering factors like fuel costs, emissions, and operational constraints.
- **Simulation of Outages:** Simulation of forced and planned outages to assess their impact on resource adequacy and plan for contingencies.

4. Planning Reserve Margin (PRM):

- **PRM Calculation:** Calculation of the Planning Reserve Margin (PRM) by analysing reliability indices such as Loss of Load Probability (LOLP) and Normalized Energy Not Served (NENS).
- **Sensitivity Analysis:** Determining the most probable PRM required to meet reliability standards.

5. Compliance and Monitoring:

- **Capacity Shortfall Calculation:** Simulating the generation dispatch and calculate the capacity shortfall by comparing the available generation capacity (adjusted for CC factors) against the forecasted demand.
- **State-Level Aggregation:** Aggregate the capacity shortfall data from all distribution licensees to determine the state-level shortfall.
- **Peak Load Sharing:** Allocation to each distribution licensee's share in the state peak based on the average of the share in state coincident peak demand (CPD) and non-coincident peak demand (NCPD) for medium-term and short-term RA.
- **Reporting:** Generate detailed reports on RA compliance, highlighting any potential shortfall and suggesting corrective actions.

EOI NOTICE
State Transmission Utility,
Maharashtra State Electricity Transmission Company Limited,
Prakashganga, Plot No., C-19, “E” Block, BKC, Mumbai-400051
www.mahastu.in

EXPRESSION OF INTEREST

From interested parties

For Providing services related to compilation & processing various data using a suitable, latest modelling & Simulation software & preparation of reports for compliances to MERC as per provisions of RA Regulation, 2024.

Scope of work	Last date for Submission of response
<p>Scope of Work: The scope for the contract in respect of preparing compliance of MERC RA Regulation 2024 will be comprised of following items:</p> <ol style="list-style-type: none">1. Agency has to compile, process all data shared by Distribution licensees related to demand assessment and forecasting to verify Distribution licensees wise demand assessment and compute state as a whole aggregated demand assessment and forecasting data in different time frames of Short Term & Medium Term using a suitable and latest modelling and simulation software tool.2. Agency has to compile, process all data shared by Distribution licensees related to the existing and contracted capacities with their technical and financial for computation of state-level capacity credit factors and for preparation of state-level assessment using a suitable and latest modelling and simulation software tool.3. Agency has to compile, process all data shared by Distribution licensees related to its power procurement plan for verification of its consistency with STU's transmission system plan for the intra-State Transmission System, prepared in accordance with the Regulations of the Commission governing Transmission Open Access using a suitable and latest modelling and simulation software tool.4. Based on the MT-DRAP and ST-DRAP, agency has to compute the state-aggregated capacity shortfall using a suitable and latest modelling and simulation software tool and put up report for onward submission as per MERC - RA Regulation 2024.5. Agency has to calculate allocation of national RA requirement to different distribution licensees for further communication and compliance purpose.6. Agency has to put up state aggregated ST DRAP & MT DRAP as per provisions of MERC - RA Regulation 2024 for compliance purpose.7. Agency has to aggregate generation data and put up report on state-level assessment for submission to National level agency for national assessment of RA requirement for compliance purpose.8. Training to the nominated STU staff (15days) on the RA modelling software	<p style="text-align: center;">21-07-2025 Up to 13:00 Hrs</p>

The EOI shall be submitted via e-mail to cestu@mahatransco.in alongwith supporting documents or hand delivered.

Eligibility Conditions of Parties for EOI Participation:

A. Technical Experience

The bidder must have successfully completed at least one Resource Adequacy or Generation Adequacy or Power System Reliability Assessment projects in the last 5 years, for:

- a. National or State Load Dispatch Centres,
- b. Central/State Transmission Utilities,
- c. Regulatory Commissions,
- d. DISCOMs or LSEs,
- e. Multilateral institutions (World Bank, ADB, etc.).

Supporting Documents Required:

Work Orders / Completion Certificates / Client Testimonials.

B. Software and Technical Capability

The bidder must demonstrate expertise in using one or more of the following software/tools: PLEXOS, PSSE, GE MAPS, Promod, Aurora, GridPath, or equivalent simulation tools.

With capability to conduct:

Probabilistic simulations (e.g., LOLE, LOLP, EUE),

Load forecasting and generation adequacy modelling,

Integration of renewables and energy storage systems into reliability models.

Supporting Documents Required:

Project reports or screenshots of modelling work, tools used.

C. Team Composition and Qualifications

The bidder must propose a team meeting the following minimum criteria:

Role	Minimum Qualification	Minimum Exp
Team Leader (Power Systems)	Postgraduate in Power/Energy Systems	10+ years
RA Modeling Expert	Degree in Engineering/Math/Statistics tool expertise	5+ years
Data Analyst/Programmer	Graduate with Python/R/SQL expertise	3+ years

Supporting Documents Required:

CVs of key personnel with relevant certifications (if any).

D. Financial Capacity

1. The average annual turnover of the bidder in the last three financial years should be at least INR 01 Crore,
2. The bidder should have positive net worth in the last financial year.

Supporting Documents Required:

Audited Financial Statements or CA-certified summary for last 3 years.

Timeline for Submission of Report:

Timeline will be in accordance with timelines specified under RA Regulation 2024.

(As per Resource Adequacy (RA) Regulation 2024, the state-aggregated capacity shortfall has to be submitted to the Commission by 15th September of each year.)

Payment Terms: Bidder shall mention payment milestones.

All payments shall be made within 30 days of receipt of invoice and approval of milestone completion by MSETCL-STU. Agency shall submit a signed invoice and supporting documents for milestone completion for each stage. No advance payment shall be made unless specifically approved by the Competent Authority. In case of delays attributable to agency, MSETCL-STU reserves the right to impose penalties or withhold payments.

Terms and Condition:

1. **Rates:** The rates should be firm till completion of assignment and to be quoted in figures as well as in words. The rates of all the taxes/ duties inclusive/ exclusive etc. must be clearly specified if applicable.
2. **Period of contract:** The period of the Work contract shall be 3 years
3. **Data Support:** The data required for the assignment will be forwarded by MSETCL/STU based on distribution licensee submission.
4. **Work Details:** Details of works/ location will be limited to MSETCL Corporate office in Mumbai.
5. **Details and Registration Nos.:** EOI to be submitted on original letter head with PAN, GST, Contact no, Address for Correspondence, Bank Details with IFSC Code, Account number and Branch.
6. **Jurisdiction:** Order is valid for jurisdiction of Mumbai Court.
7. **Confidentiality:**

Agency shall treat the details of the contract as private and confidential, except to the extent Necessary to carry out its obligations under it. The Agency shall not publish any, Information, drawings or photographs concerning the Works, or permit to be published, or otherwise disclose any particulars of the Contract in any trade or technical paper or any document or elsewhere without the prior consent in writing of the MSETCL-STU, and subject to any terms and conditions that he may prescribe. Agency shall ensure that all the output/deliverable/ information is considered as confidential. In this regard, Agency should execute Non-Disclosure Agreement on Rs. 500 stamp paper. A sample of Non-Disclosure agreement is enclosed herewith.
8. **General:** The undersigned reserves the right to reject any or all offers without assigning any reason thereof. Participation in a EOI process does not guarantee that a bidder will be awarded the contract.

The EOI shall be submitted via email to cestu@mahatransco.in along with supporting documents or shall be hand delivered to receipt clerk of this office at office of State Transmission Utility (STU), 4th Floor, Prakashganga Building, E block, Plot C-19, BKC, Bandra (East) Mumbai 400 051 in two parts Part 1 and Part 2 to reach this office on or before **21.07.2025 at 13.00 Hrs.** .

Part1: In this part Agency has to submit their details (i.e. Name, Address, Contact Information, Year of Establishment, PAN and GST details, Date of Commencement of Activity, Company status (Proprietorship/ Partnership/ Limited /others), Annual Turnover, Experience, copies of Workorders and other supporting documents.

Part 2: In this part agency has to submit the Price Bid. The Price Bid shall be submitted with Base Cost and GST separate.

The Lowest Price bid of the Eligible participants will be considered for estimation purpose for floating a RFX for the above scope of work as per MSETCL norms.

Thank you for your attention, and we look forward to your enthusiastic participation!


(Peeyush Sharma)
Chief Engineer (STU)

Copy s.w.rs.to:

1. The Chairman and Managing Director, MSETCL, C.O., Mumbai.
2. The Director (Operations)/ Director (Finance), MSETCL, C.O., Mumbai.