EXPRESSION OF INTEREST (EoI)

Selection of Service Provider for Development of a Drawing-Based Intelligent 3D Thermal Power Plant Model with Equipment Contextualisation, DMS Integration and Real-Time Operating Data Visualisation

EoI Reference No.	Date of Issue	Last Date for Submission	Submission E-mail / Portal
[UPRVUNL/EoI/3D/2026]	[05.11.2026]	[20.11.2026, 16:00 IST]	cpm.pragati@uprvunl.org

NOTICE INVITING EXPRESSION OF INTEREST

Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL), Government of Uttar Pradesh undertaking, invites Expressions of Interest from competent and experienced agencies, technology providers, engineering service providers, system integrators and consortia (where permitted) having relevant capability in drawing-based 3D plant modelling, engineering information contextualisation, document management integration and industrial real-time data integration.

The purpose of this EoI is to understand available technologies, implementation approaches, relevant experience, indicative delivery timelines and budgetary cost ranges for a potential project covering selected UPRVUNL thermal power plant areas. This EoI is for market assessment and planning; it is not a Request for Proposal (RFP) or a commitment to award a contract.

1. Background and Purpose

UP Rajya Vidyut Utpadan Nigam Limited (UPRVUNL), a state-owned power utility, operates six thermal power stations across Uttar Pradesh and hydro power plants of 524.9 MW capacity.

Thermal Plants overview:

Thermal Power Station	Location	Capacity (MW)
Anpara TPS	Sonebhadra, U.P.	2630
Harduaganj TPS	Aligarh, U.P.	1270
Jawaharpur TPS	Etah, U.P.	1320
Obra TPS	Sonebhadra, U.P.	2320
Parichha TPS	Jhansi, U.P.	920
Panki TPS	Kanpur, U.P.	660

UPRVUNL proposes to develop an interactive, intelligent 3D representation of selected thermal power plant areas primarily from available engineering drawings and records. The intended solution shall connect the 3D model with equipment tag numbers, P&IDs, General Arrangement (GA) drawings, equipment documents, the Document Management System (DMS), and selected real-time operating parameters from the DCS, SCADA and/or plant historian.

The objective is to assess solutions that go beyond a visual walkthrough and provide an equipment-centric plant information environment. The solution should support tag-based search, model-to-drawing navigation, document retrieval, equipment relationship tracing, and display of selected operating values and trends where the relevant source data is available.

2. Indicative Scope of the Proposed Initiative

The proposed initiative may include, but is not necessarily limited to, the following:

- Review and inventory of existing engineering drawings and records, including GA drawings, P&IDs, equipment drawings, piping layouts, structural drawings, equipment registers, line lists and instrument indexes.
- Development of a navigable 3D model from available drawings, using an agreed modelling detail and clearly identifying limitations caused by incomplete or outdated source information.

- Creation of an equipment/tag register linking each relevant 3D object with plant/unit, system, equipment tag, attributes and source drawings.
- Contextualisation of equipment, piping, valves and instruments with related drawings, manuals, datasheets and other approved documents.
- Bidirectional navigation between 3D objects and related drawings, wherever supported by source formats and selected software.
- Integration with the existing DMS or approved document repository, including document references and revision metadata.
- Read-only integration of selected real-time operating data from DCS/SCADA/historian through approved interfaces such as OPC UA, historian APIs or equivalent supported methods.
- Display of selected operating values, units, timestamps, data-quality/freshness indicators, equipment status and historical trends where available.
- Secure plant-level and/or centralised viewing architecture, subject to UPRVUNL's IT/OT and cybersecurity requirements.
- Training, configuration documentation, editable model files, data exports, support and future integration capability.

Important: Laser scanning is not mandatory for the proposed base concept. Respondents should explain what can be reliably achieved from drawings alone, how drawing gaps would be handled, and what optional site verification or laser scanning may be required.

3. Expected Functional Capabilities

Capability	Indicative expectation
3D navigation	Navigate by station, unit, area, system and equipment; select, isolate, hide/show and highlight objects.
Equipment contextualisation	Search by tag number/description and display attributes, location and associated equipment relationships.
Drawing linkage	Open relevant P&IDs, GA drawings and equipment drawings from a selected model object; reverse navigation where technically supported.
DMS linkage	Retrieve approved documents using document IDs/links and display revision/status metadata in line with existing permissions.
Live operating data	Map selected DCS/historian tags to equipment/model objects and display values with units, timestamps and quality/freshness status.
Trends and status	Show historical trends and equipment status where supported by source data and included in the eventual scope.
Data validation	Report missing, duplicate or conflicting tags, unlinked documents and unresolved drawing discrepancies.
Cybersecurity	Read-only operational data path, controlled interfaces, role-based access, auditability and compliance with approved IT/OT architecture.
Interoperability	Provide agreed native and neutral model exports, tag registers, mapping tables and documented interfaces.

4. Information Requested from Interested Agencies

Interested agencies are requested to submit a structured response covering the following:

1. Company profile, ownership, years of operation, offices and relevant business domains.
2. Description of the proposed solution and architecture, including software products, components, deployment options and integration approach.

3. Relevant experience in thermal power plants or comparable industrial facilities, including client, scope, approximate scale, completion status and reference contact where disclosure is authorised.
4. Experience in converting 2D drawings into 3D models, contextualising equipment tags, linking P&IDs/GA drawings and developing engineering information systems.
5. Experience integrating DMS/document repositories and industrial data sources such as DCS, SCADA, OPC UA or plant historians.
6. Approach for handling legacy/scanned drawings, missing dimensions, inconsistent revisions, duplicate tags and incomplete source records.
7. Proposed modelling methodology, level of detail, quality assurance process and validation approach.
8. Proposed cybersecurity and IT/OT architecture, including read-only data acquisition, network segregation, gateway/interface requirements and data hosting options.
9. Indicative implementation schedule, manpower plan, key dependencies and role of UPRVUNL.
10. Indicative commercial model: implementation charges, modelling charges, tag/object-based charges, software licences, annual subscriptions, infrastructure, integration and annual support.
11. List of assumptions, exclusions, third-party dependencies, recurring costs and optional services such as laser scanning or site verification.
12. Potential risks, constraints, recommended pilot approach and suggestions for preparing a comprehensive RFP.

5. Suggested Response Format

A. Agency details	Legal name, registered address, contact person, e-mail, telephone, website and legal constitution.
B. Technical capability	Solution description, architecture, products, data interfaces, modelling and contextualisation approach.
C. Relevant projects	Project references and evidence of comparable work; clearly identify work performed by the respondent itself.
D. Delivery approach	Pilot proposal, implementation phases, estimated schedule, staffing and dependencies.
E. Cybersecurity	Read-only design, IT/OT segregation, hosting/data location, security controls and compliance approach.
F. Indicative cost	Budgetary cost ranges with clear assumptions, taxes, licence and recurring cost separation.
G. Deviations and assumptions	Limitations, exclusions, required inputs and additional site verification requirements.
H. Supporting documents	Company profile, project sheets, product brochures, authorisations and client references where available.

6. Eligibility and Participation

This EoI is intended to invite responses from agencies with relevant technical capability. Respondents may include engineering design/modelling firms, industrial digitalisation providers, software/platform providers, system integrators and, subject to the eventual tender conditions, consortia or joint ventures.

Respondents should demonstrate credible experience in one or more relevant areas. The EoI response shall state which elements are delivered directly by the respondent and which rely on OEMs, subcontractors or partners. Any minimum eligibility criteria for a subsequent RFP will be finalised separately in accordance with applicable procurement rules and UPRVUNL policy.

There is no restriction on the legal form of the respondent. Companies, start-ups, research institutions, public sector undertakings, and joint ventures are all eligible to respond.

7. Indicative Process After the EoI

1. Receipt and review of EoI responses for market assessment.
2. Clarifications or technical presentations from selected respondents, if considered useful by UPRVUNL.
3. Assessment of available technologies, implementation models, risks, market capability and indicative cost ranges.
4. Finalisation of the detailed requirements, scope, BOQ, qualification criteria and acceptance parameters.
5. A separate procurement process, including an RFP/tender, may be undertaken if approved by UPRVUNL.

8. Submission Instructions

Proposals shall be submitted in English by e-mail or physical submission as specified below, with any supporting brochures or appendices, by the deadline specified on the first page. Both soft copy (searchable PDF/Word) and hard copy (if submitted physically) shall be provided. The response shall include, as a minimum:

- A covering letter on the organisation's official letterhead
- Company/consortium profile and organisational overview
- Proposed technical solution covering all areas listed in Section 4
- Indicative cost and delivery timeline
- Relevant past experience with supporting case studies or reference letters
- Contact details of the authorised representative

Submission detail	**To be completed by UPRVUNL before publication**
Submission mode	E-mail or physical submission
Addressed to	Chief Project Manager, Pragati Unit, UPRVUNL
E-mail / portal link	cpm.pragati@uprvunl.org
Postal address	Vidyut Sewa Aayog, SLDC Complex, Vibhuti Khand, Gomti Nagar, Lucknow, U.P. India - 226010
Subject line	EoI – Intelligent 3D Plant Model and Real-Time Data Contextualisation
Last date and time	[20.11.2026, 16:00 IST]
Queries contact	Chief Project Manager, Pragati Unit, UPRVUNL; E-mail: cpm.pragati@uprvunl.org; Phone:

9. General Conditions and Disclaimer

- This EoI is issued solely to understand market capability, solution options, indicative costs and implementation approaches. It is not a tender, RFP, purchase order or promise to procure.
- Submission of an EoI does not create any right to participate in a future tender or to receive an award. UPRVUNL may amend, defer, cancel or close this market consultation without assigning a reason, subject to applicable rules.
- UPRVUNL is not obliged to reimburse costs incurred in preparing or presenting an EoI response.

- Any indicative cost or technical proposal submitted will be used for planning and market assessment; it shall not be treated as a binding offer unless expressly agreed in a subsequent procurement process.
- Respondents shall not assume access to plant sites, confidential drawings, DCS data or DMS repositories at this stage. Any access, demonstration or site visit shall require prior written authorisation and compliance with security requirements.
- Respondents shall identify confidential information clearly. Handling of submitted information shall be governed by applicable law and UPRVUNL policy.
- The subsequent RFP, if issued, will specify final scope, eligibility, evaluation criteria, commercial terms, security obligations and acceptance requirements.
- UPRVUNL reserves the right to accept or reject any or all proposals without assigning any reason.
- UPRVUNL may seek additional information, call for presentations, or conduct pilot demonstrations at its discretion.
- UPRVUNL may initiate a separate, competitive procurement / tendering process subsequently, for which this EoI response may or may not be considered.
- UPRVUNL reserves the right to modify, suspend, or cancel this EoI process at any stage without incurring any liability.

Disclaimer: This Expression of Interest is intended solely for market assessment and planning. No contractual obligation, express or implied, shall arise from the issuance of this EoI or from any response received thereto.

10. Contact for EoI

For and on behalf of Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited
Chief Project Manager, Pragati Unit, UPRVUNL
Vidyut Sewa Aayog, SLDC Complex, Vibhuti Khand, Gomti Nagar, Lucknow, U.P. India - 226010
E-mail: cpm.pragati@uprvunl.org

Note: All queries must be submitted in writing (by e-mail or post) to the above address. Telephonic queries will not be entertained. Consolidated responses to all queries received will be published on the UPRVUNL website.

Important Note: Submission of a response to this EoI does not guarantee any award or future engagement. This document is for information and response purposes only. UPRVUNL shall not be liable for any costs incurred in preparing or submitting a response. All information submitted shall be treated as confidential.

— End of Expression of Interest —