

Request for Expression of Interest (REoI)

Appointment of an Engineering firm/Consultant for the ‘Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of Assistance/Other Services for the process: Recovery of High Purity Toluene from Hydrogenated PyGas’

Letter of Invitation:

CSIR-Indian Institute of Petroleum
Dehradun – 248005

No.: REoI/IIP/RPBD-01/2026 Dated: **23.06.26**

Dear Sir/Madam,

CSIR–Indian Institute of Petroleum (CSIR–IIP), Dehradun, invites Expression of Interest (EoI) from eligible engineering firms/consultants for the Preparation and Supply of the Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of associated engineering services for the Toluene Extraction Process.

The Request for Expression of Interest (REoI) document, containing details of the qualification criteria, submission requirements, project objectives, scope of work, and Terms of Reference (ToR), is enclosed for your reference.

The REoI document is also available on the Institute’s website at: <https://www.iip.res.in/tenders/>

Interested parties are required to submit their REoI responses exclusively through the Central Public Procurement (CPP) Portal at www.etenders.gov.in within the stipulated timeline. REoI submissions received through any mode other than the CPP Portal shall not be considered and will be rejected without further correspondence.

Query if any, may be preferred in writing to Head-BD, CSIR-IIP, and Dehradun-248005 or telephone no. 0135-2525725 or at email: atul.ranjan@csir.res.in

Important dates are as under:

S.No.	Critical Events	Date	Time
1	REoI publishing date	As per CPP Portal	
2	REoI response submission start date		
3	REoI response submission end date		
4	REoI response opening date		

Section I: Request for Expression of Interest (REoI)

1. Introduction

CSIR–Indian Institute of Petroleum (CSIR-IIP), Dehradun, invites Expressions of Interest (EoI) from eligible and experienced Engineering Consultants/Engineering Companies for Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of Assistance/Other Services for an extractive distillation-based Toluene Extraction Process developed by CSIR-IIP for a leading integrated refining and petrochemical organizationClient.

The purpose of this REoI is to identify competent and interested Engineering Consultants possessing relevant experience in refinery, petrochemical, gas processing, and hydrocarbon separation technologies and to facilitate structured interaction with prospective bidders prior to issuance of the final Request for Proposal (RFP).

Participation in the REoI process is intended to:

- a) Assess market capability and identify prospective bidders;
- b) Obtain preliminary information regarding technical competence and organizational capability;
- c) Facilitate interaction between CSIR-IIP and interested parties through a REoI meeting;
- d) Finalize tender requirements and bidding conditions based on industry feedback, wherever considered appropriate by CSIR-IIP.

Submission of an EoI shall not constitute a bid, nor shall it create any obligation on CSIR-IIP to issue a tender, shortlist any party, or award any contract.

2. Scope of Proposed Assignment

The proposed assignment broadly includes:

- Preparation of a comprehensive Basic Design Engineering Package (BDEP);
- Preparation of Supervisory Operating Manual (SOM);
- Post project completion, Assistance/Other Services for support during Detailed Engineering at the Client site.

Detailed Scope of Work and Deliverables for BDEP and SOM preparation are provided in Annexure 1 and 2 of attached Terms of Reference (ToR) Document.

Note: The content of BDEP as given in Annexure-1 of ToR Document shall be part of the agreement and no deviation in the contents is permitted.

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3. Eligibility to Submit EoI

Interested Engineering Consultants, Engineering Companies, or Engineering Firms (hereinafter referred to as the "Applicant") submitting an Expression of Interest (EoI) shall satisfy all of the following minimum eligibility requirements:

1. Legal Status

The Applicant shall be an Indian engineering consultancy firm, company, or organization, defined as an entity incorporated or registered in India, including Indian subsidiaries, branch offices, or project offices of international engineering companies operating in India and undertaking engineering assignments for domestic projects.

The Applicant shall possess a valid registration to operate in India and shall be solely responsible for execution of the assignment and compliance with all applicable statutory, contractual, and regulatory requirements in India.

2. Quality Management System

The Applicant shall possess a valid ISO 9001 certification in force on the date of submission of the EoI.

3. Average Annual Turnover

The Applicant shall have an average annual turnover of at least 3.00 Crore INR since FY 2022 – 23.

4. Blacklisting

The Applicant shall not have been blacklisted, debarred, banned, or declared ineligible by any Government Department, Government Agency, Public Sector Undertaking (PSU), Central Public Sector Enterprise (CPSE), or Statutory Authority as on the date of submission of the EoI. **(For details refer Annexure 3 of ToR)**

5. Consortiums and Joint Ventures

Considering that the assignment involves closely integrated, multidisciplinary, and time-bound engineering activities requiring single-point responsibility, seamless coordination, and expedited decision-making, participation through consortiums, joint ventures (JVs), partnerships, associate arrangements, or similar collaborative structures shall not be permitted. Participation shall be permitted only as a single legal entity.

Submission of Supporting Documents

Applicants shall submit documentary evidence in support of the above eligibility requirements, including but not limited to:

- Certificate of Incorporation/Registration;

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- Valid ISO 9001 Certification;
- Report of Financial Strength and Annual Turnover of company (**Format 5**);
- Declaration regarding Debarment, Blacklisting and Related Matters. (**Format 7**);
- Any other documents considered necessary to establish eligibility.

Only Applicants meeting the above eligibility requirements shall be considered for further evaluation.

Relaxation in Turnover Requirement for MSEs and Start-ups

Micro and Small Enterprises (MSEs) registered under Udyam Registration and Start-ups recognized by the Department for Promotion of Industry and Internal Trade (DPIIT) shall be exempted from the minimum average annual turnover requirement specified in the Qualification Criteria (QC), subject to the following:

- a) The Applicant shall submit valid documentary evidence of its status as an MSE and/or DPIIT-recognized Start-up along with the EoI.
- b) CSIR-IIP reserves the right to verify the authenticity and validity of the submitted registration certificates and supporting documents.

Non Relaxation in Prior work experience

The work is highly specialized in nature and requires proven experience in refinery/petrochemical process engineering and hydrocarbon separation systems and plant safety. Any shortcomings in process design, equipment sizing, process safety considerations, control philosophy, relief system design, or integration with existing facilities may lead to serious operational and safety issues. Since the unit will operate within an existing petrochemical environment where there is practically no room for engineering errors, therefore the Applicant should have demonstrated prior experience and multidisciplinary engineering capability in handling similar refinery/petrochemical projects.

Accordingly, the prescribed prior work experience criteria are kept mandatory for all applicants, including MSEs/startups.

4. Special Provisions for Evaluation of Experience and Execution through Indian Offices

For Indian Offices/Subsidiaries of Foreign Engineering Companies participating in the REoI process:

- ❖ The Applicant shall submit a declaration confirming that the complete scope of work related to preparation of the Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) for this project shall be executed entirely

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through its Indian office(s). All engineering deliverables, including but not limited to Process Flow Diagrams (PFDs), Piping & Instrumentation Diagrams (P&IDs), equipment datasheets, engineering calculations, and associated documents, shall prominently bear the name and logo of the Indian office/entity, wherever applicable.

Annexure XXX.

- ❖ For the purpose of evaluation of technical experience and eligibility, only the work experience executed through the Applicant's Indian office(s), whether for domestic or international clients, shall be considered.

For Indian Engineering Companies participating in the REoI process:

- ❖ For the purpose of evaluation of technical experience and eligibility, the work experience executed through the Applicant's offices located in India and/or abroad, for domestic as well as international clients, shall be considered.

5. Information to be submitted

The EoI is to be submitted online only on CPP portal at <https://etenders.gov.in/> along with all information as detailed below (No hard copies / emails will be accepted):

- a) Power of Attorney in favor of Authorized Signatory with long and short signature of Authorized person.
- b) Applicant's Expression of Interest as per **Format-1**.
- c) Organizational Contact Details as per **Format-2**.
- d) Experience of the organization as per **Format-3**.
- e) List of experts/consultants on payroll as per **Format-4**.
- f) Report of Financial Strength and Annual Turnover of company as per **Format-5**.
- g) Compliance sheet as per **Format-6**.
- h) Other documents as per compliance sheet **Format-6**.
- i) Declaration regarding Debarment, Blacklisting and Related Matters as per **Format-7**.
- j) Declaration regarding execution of work through Indian office(s) as per **Format-8**
- k) Integrity Pact **Format-9, (signed on each page)**. Document received without signatures will be rejected summarily.
- l) Valid ISO 9001 Certification
- m) Udyam Registration Certificate / Certificate of Recognition from DPIIT in case of MSE/ Start-up Applicant

6. REoI Presentation/Meeting

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Following the closure of the REoI submission period, CSIR-IIP may organize a REoI Meeting to discuss the project scope, objectives, deliverables, timelines, commercial framework, and tender conditions. Only those parties that have submitted a valid REoI response and meet the prescribed eligibility and qualification criteria shall be eligible for invitation to the REoI Presentation/Meeting.

7. Response:

Participants shall submit their responses strictly in accordance with the formats prescribed in this REoI document. Responses that are incomplete or not submitted in the prescribed formats may be rejected by CSIR-IIP without further consideration. Participants may also provide observations, suggestions, or comments on the project objectives, scope of work, deliverables, or other requirements outlined in the REoI, along with their submissions.

8. Conflict of Interest:

1. Applicants shall not have any Conflict of Interest that may adversely affect the fairness, transparency, integrity, or objectivity of the REoI process or any subsequent selection process undertaken by CSIR-IIP.
2. A Conflict of Interest shall be deemed to exist where the Applicant, its affiliates, parent company, subsidiaries, directors, partners, employees, advisors, or representatives:
 - a) have any relationship, financial or otherwise, with any person or entity involved in the preparation of the REoI, evaluation of submissions, shortlisting process, or subsequent procurement activities that could influence, or reasonably be perceived to influence, the outcome of the selection process;
 - b) have participated in the preparation of the Terms of Reference (ToR), project definition, design basis, technical specifications, qualification criteria, or any other document related to the present assignment in a manner that may provide an unfair competitive advantage;
 - c) have any business, contractual, or other interest that may impair their ability to provide independent and objective services in connection with the assignment;
or
 - d) are subject to any other circumstance that results in, or may reasonably be perceived as resulting in, a conflict between the interests of the Applicant and those of CSIR-IIP.
3. The Applicant shall disclose, as part of its REoI submission, any actual, potential, or perceived Conflict of Interest together with full particulars thereof. Such disclosure shall be submitted in writing along with the REoI response.

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4. The Applicant shall have a continuing obligation to promptly disclose any Conflict of Interest that arises or becomes known during the REoI process, short listing stage, subsequent RFP process, or execution of the assignment.
5. CSIR-IIP shall examine the facts and circumstances relating to any disclosed or identified Conflict of Interest and shall determine whether such conflict is material and whether it can be mitigated. The decision of CSIR-IIP in this regard shall be final and binding.
6. Failure to disclose any actual, potential, or perceived Conflict of Interest, or submission of false, misleading, or incomplete information relating thereto, may result in rejection of the REoI submission, exclusion from further participation in the selection process, cancellation of shortlisting, or any other action deemed appropriate by CSIR-IIP.

9. Last date of submission of EoI:

The last date of submission of EoI is **13th July 2026, 3:00 PM**

10. EoI Validity:

A submitted EoI shall remain valid for a period of 90 (ninety) days from the deadline for the EoI submission.

11. Performance Security:

1. Post RFP, Within Twenty-One (21) days of issuance of the Letter of Award (LoA), the successful bidder (Engineering Consultant) shall furnish a Performance Security equivalent to ****five percent (5 %) of the Contract Value**** in favor of CSIR-Indian Institute of Petroleum (CSIR-IIP), Dehradun.
2. The Performance Security may be furnished in the form of a Bank Guarantee (including e-Bank Guarantee), Insurance Surety Bond, Demand Draft, Banker's Cheque, or any other form acceptable to CSIR-IIP.
3. **The Performance Security shall remain valid until Three Hundred Sixty Five (365) days beyond the date of acceptance of the final contractual deliverables by CSIR-IIP.**
4. The Performance Security shall serve as a safeguard for the due, timely, and satisfactory fulfillment of the Engineering Consultant's obligations under the Contract, including, but not limited to, the following:
 - a) Timely submission of all milestone deliverables in accordance with the approved project schedule and Contract requirements;

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- b) Preparation and submission of the Basic Design Engineering Package (BDEP), Operating Manual, and all other contractual deliverables in conformity with the approved Scope of Work and technical requirements;
 - c) Timely incorporation and closure of comments, observations, and review remarks issued by CSIR-IIP and/or its Client;
 - d) Participation in review meetings, technical presentations, coordination meetings, design reviews, and other project-related interactions as required under the Contract;
 - e) Fulfillment of all obligations necessary for the successful completion of the assignment in accordance with the Contract; and
 - f) Provision of timely technical support, clarifications, responses to queries, and resolution of process design-related issues through minor modifications in BDEP, if required, arising during Detailed Engineering/ Implementation Phase of the project based on prepared BDEP and SOM, within the timelines specified by CSIR-IIP or its Client, without any additional cost or financial implication to CSIR-IIP.
5. The Performance Security may be invoked, wholly or partly, in the event of:
- a) Failure to submit any contractual deliverable within the agreed timeline without valid justification acceptable to CSIR-IIP;
 - b) Repeated submission of incomplete, substantially deficient, or technically unacceptable deliverables requiring major rework;
 - c) Failure to address and close review comments within the agreed timeframe;
 - d) Abandonment of the assignment or refusal to perform contractual obligations; or
 - e) Any material breach of the Contract resulting in delay, disruption, or additional expenditure to CSIR-IIP.
6. The Performance Security may be invoked, wholly or partly, to recover any amounts due and recoverable from the Engineering Consultant under the Contract, including Liquidated Damages, risk-and-cost recoveries, and other contractual dues.
7. Upon satisfactory completion of the assignment, acceptance of all contractual deliverables, and fulfillment of all obligations by the selected Engineering Consultant, the Performance Security shall be released within thirty (30) days of receipt of a written request from the Engineering Consultant.

12. Technical Support during Detailed Engineering, Procurement, Construction, Commissioning and PGTR

The Engineering Consultant (EC) shall provide all necessary technical support, clarifications, explanations, review comments, and engineering assistance arising out of the BDEP, SOM, and associated deliverables prepared under this Contract throughout the Detailed Engineering, Procurement, Construction, Pre-Commissioning, Commissioning, Start-up, Performance Guarantee Test Run (PGTR), and stabilization period of the Project.

Such support shall include, but not be limited to:

- a. Responding to technical queries, requests for clarification (RFCs), technical deviations, design interpretations, and engineering comments raised by CSIR-IIP, the Client, PMC, Detailed Engineering Contractor, EPC Contractor, LSTK Contractor, Vendors, or any agency authorized by the Client;
- b. Review and confirmation of engineering documents, process calculations, equipment sizing, operating philosophy, control philosophy, process safety-related matters, utility integration, and other matters directly related to the BDEP and SOM prepared by the EC;
- c. Providing revised calculations, explanatory notes, technical memoranda, corrigenda, or amendments to the BDEP/SOM where required due to omissions, inconsistencies, or clarification needs attributable to the original engineering package;
- d. Supporting resolution of technical issues encountered during implementation and start-up, to the extent such issues relate to the process design and engineering package prepared under this Contract.

The EC shall provide such support from the Effective Date of Contract until successful completion of the Performance Guarantee Test Run (PGTR) of the Project or five (5) years from submission and acceptance of the final BDEP/SOM, whichever occurs earlier.

The EC shall ensure that all technical queries are acknowledged within three (3) working days and responded to within seven (7) working days, unless a different timeline is specified by CSIR-IIP based on the criticality of the matter.

No claim for additional payment on account of the duration, frequency, volume, or number of technical queries raised during the support period shall be entertained, and the EC shall be deemed to have included the cost of such services in its quoted Contract Price.

The EC shall maintain access to suitably qualified process engineering personnel familiar with the developed BDEP/SOM throughout the support period. Replacement of key personnel shall not relieve the EC of its obligations under this Contract.

13. Disclaimer and Condition(s) under which REoI is issued:

1. This Request for Expression of Interest (REoI) is being issued by CSIR–Indian Institute of Petroleum (CSIR–IIP) solely for the purpose of identifying, evaluating, and shortlisting qualified and experienced engineering firms/consultants for potential participation in a subsequent Request for Proposal (RFP) process for preparation and supply of the Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and associated engineering services for the Toluene Extraction Process.
2. The issuance of this REoI shall not be construed as a commitment, promise, offer, or invitation to award any contract, nor shall it create any contractual or legal relationship between CSIR–IIP and any participating party.
3. Participation in the REoI process does not confer any right upon any participating party to be shortlisted, invited to participate in the RFP process, awarded any contract, or receive any reimbursement of costs incurred in connection with preparation and submission of its REoI response.
4. Director, CSIR–IIP reserves the right, at its sole discretion and without assigning any reason, to amend, suspend, withdraw, cancel, reissue, or modify the REoI, the project scope, qualification criteria, procurement methodology, timelines, or any other requirement associated with the proposed assignment.
5. Director, CSIR–IIP reserves the right to accept or reject any or all REoI responses, seek additional information or clarifications from participating parties, shortlist any number of parties, or decide not to proceed further with the proposed procurement process, without incurring any liability whatsoever.
6. The information contained in this REoI is provided solely for facilitating preparation of responses by interested parties. Participating parties are expected to undertake their own independent assessment of the assignment, requirements, risks, and obligations before submitting their responses.
7. Any subsequent RFP, if issued, shall be based on the requirements, scope, conditions, evaluation methodology, and commercial framework prevailing at the time of issuance of the RFP, which may differ from those contained in this REoI.
8. Participation in the REoI process shall be deemed to constitute acceptance of the terms and conditions contained herein by the participating party.

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Section II: Appendix to REoI

The following project-specific information shall apply to this REoI.

Item	Particulars
REoI Reference No.	REoI/IIP/RPBD-01/2026 Dated: 23.06.26
EoI Mode	Open Tender Enquiry (OTE)
Procuring Entity	CSIR–Indian Institute of Petroleum (CSIR-IIP), Dehradun
Assignment Title	Selection of Engineering Consultant for Preparation of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM) and Assistance/Other Services
Technology Basis	Extractive Distillation based Toluene Extraction Process
Indicative Plant Capacity	~32 TPH Feed Throughput
Assignment Type	Consultancy Services
Expected Deliverables	BDEP, SOM, and Assistance/Other Services
Consortium/JV Participation	Not Permitted
EoI Submission Mode	As specified in REoI Notice
EoI Submission End Date	13th July 2026, 3:00 PM
EoI Validity	90 (ninety) days from EoI submission deadline
Contact Person	Head-BD, CSIR-IIP
Contact E-mail	headbdd.iip@csir.res.in
Address for Communication	Head-BD, CSIR-IIP CSIR–Indian Institute of Petroleum, Mohkampur, Dehradun – 248005
Website	https://www.iip.res.in/tenders/

Documents to be Submitted with REoI

1. Power of Attorney in favor of Authorized Signatory with long and short signature of Authorized person.
2. Applicant’s Expression of Interest as per **Format-1**
3. Organizational Contact Details as per **Format-2**
4. Experience of the organization as per **Format-3**
5. List of experts/consultants on payroll as per **Format-4**
6. Report of Financial Strength and Annual Turnover of company as per **Format-5**
7. Compliance sheet as per **Format-6**

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8. Other documents as per compliance sheet **Format-6**
9. Declaration regarding Debarment, Blacklisting and Related Matters as per **Format-7**
10. Declaration regarding execution of work through Indian office(s) as per **Format-8**
11. Integrity Pact **Format-8, (signed on each page)**. *Document received without signatures will be rejected summarily.*
12. Valid ISO 9001 Certification

Important Note

- ❖ All Formats and Declarations to be furnished on official letter head of organization.
- ❖ REoI details have also been hosted on the Institute website at <https://www.iip.res.in/tenders/>. The bidders are expected to examine all instructions, forms, terms and other details in the REoI document carefully. Failure to furnish complete information as mentioned in the REoI document, or submission of a proposal not substantially responsive to the REoI document in every respect, will be at Bidder's risk and may result in rejection of the proposal. All forms / formats enclosed with REoI shall be submitted online only on CPP Portal at <https://etenders.gov.in>. In case firm feels necessary to submit any other document which is not possible to upload easily may be send through off line mode to the following address:

**Head-BD, CSIR-IIP
CSIR–Indian Institute of Petroleum,
Mohkampur, Dehradun – 248005, Uttarakhand**

- ❖ Participation in the REoI shall not automatically qualify an organization for award of work. Detailed eligibility criteria, technical evaluation methodology, commercial requirements, and contractual conditions shall be defined in the subsequent RFP document.

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Section III: Qualification Criteria (QC)

The proposed assignment involves preparation of a Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Assistance/Other Services for a hydrocarbon separation process intended for implementation within an operating refinery/petrochemical environment. The assignment requires a high degree of technical accuracy, multidisciplinary engineering capability, process safety expertise, and experience in development of engineering packages for complex hydrocarbon processing facilities.

Any deficiencies in process design, equipment sizing, control philosophy, utility integration, relief and flare system design, process safety considerations, or overall engineering deliverables may have significant implications on plant operability, safety, reliability, and project execution. Accordingly, only those parties possessing relevant experience, demonstrated engineering competence, adequate organizational capability, and proven track record in similar refinery, petrochemical, or gas processing projects shall be considered for shortlisting.

The qualification criteria specified herein are intended to identify and shortlist parties possessing the requisite technical, engineering, and organizational capabilities for successful execution of the assignment. The EoIs received shall be evaluated against the prescribed criteria on a scoring basis, and screening shall be carried out based on the Technical Score (TS) obtained.

Evaluation and Screening of EoIs

Eligible EoIs will be evaluated and screened on the following categories:

- 1. E1.A – Core Process Engineering Experience (Overall 50 % Weightage):** Experience in preparation of complete Basic Design Engineering Package (BDEP) / Process Engineering Package (PEP) for separation technologies/ processes such as Distillation [CDU, VDU, Naphtha Splitter, Kerosene-Diesel Fractionator, De-Ethanizer, De-Propanizer, De-Butanizer, Propane-Propylene Splitter, Ethylene Fractionator / De-Methanizer / De-Ethanizer Train, Benzene-Toluene Splitter, Toluene-Xylene Splitter, Styrene Distillation Systems, MEG Purification Columns, Reactive Distillation systems, Azeotropic Distillation systems], Extractive Distillation (ED) + Solvent Recovery [Using solvents like NMP, SULFOLANE, NFM, DMSO, DMF, Glycols or similar], Liquid-Liquid extraction (LLE) + Solvent Recovery [Using solvents like SULFOLANE, NFM, NMP, DMSO, DMF, Glycols or similar], Amine based Gas Absorption units in hydrocarbon refinery/ petrochemical complexes.

Evaluation category E1.A shall be graded as per the Table 1.0 below:

No. of BDEPs (separation-based technologies/processes) for plants having ≥ 10 TPH throughput	N1	No. of complete BDEP/PEP projects done for separation-based technologies/processes (N1 and/or N2)		Marks (M)
		0	0	
No. of BDEPs (separation-based technologies/processes) for plants having < 10 TPH throughput	N2	1	40	
		2	60	
		3	80	

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		4 and above	100
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$$E1.A = M_{N1} \times 0.8 + M_{N2} \times 0.2 \text{ (When } N1 < 4 \text{ and } N2 > 0)$$

$$E1.A = M_{N1} \text{ (When } N2=0 \text{ or } N1 \geq 4)$$

2. **E1.B – Core Process Engineering Experience (Overall 10 % Weightage):** Experience in preparation of FEED Package for separation technologies/ processes such as Distillation [CDU, VDU, Naphtha Splitter, Kerosene-Diesel Fractionator, De-Ethanizer, De-Propanizer, De-Butanizer, Propane-Propylene Splitter, Ethylene Fractionator / De-Methanizer / De-Ethanizer Train, Benzene-Toluene Splitter, Toluene-Xylene Splitter, Styrene Distillation Systems, MEG Purification Columns, Reactive Distillation systems, Azeotropic Distillation systems], Extractive Distillation (ED) + Solvent Recovery [Using solvents like NMP, SULFOLANE, NFM, DMSO, DMF, Glycols or similar], Liquid-Liquid extraction (LLE) + Solvent Recovery [Using solvents like SULFOLANE, NFM, NMP, DMSO, DMF, Glycols or similar], Amine based Gas Absorption processes in refinery/ petrochemical complexes, for units having a minimum feed throughput of 10 TPH, in hydrocarbon refinery/ petrochemical complexes.

Evaluation category E1.B shall be graded as per the Table 2.0 below:

No. of FEED projects for separation-based technologies/processes done with unit feed throughput ≥ 10 TPH (N)	Marks (M)
0	0
1	40
2	60
3	80
4 and above	100

$$E1.B = M_N$$

3. **E2 – Process Safety & HAZOP Experience (Overall 5% Weightage):** Experience in Execution of HAZOP studies for separation/non-separation technologies / processes in refinery, petrochemical, or chemical plants, with a minimum feed throughput of 1 TPH. HAZOP experience for plants having < 1 TPH throughput, shall not be considered for evaluation.

Evaluation category E2 shall be graded as per the Table 3.0 below:

No. of HAZOPs done completely In-house (throughput > 1 TPH)	N1	No. of projects done with unit feed throughput >1 TPH (N1 / N2)	Marks (M)
		0	0
No. of HAZOPs done with external association (throughput > 1 TPH)	N2	1	40
		2	60

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	3	80
	4 and above	100

$$E2 = M_{N1} \times 0.8 + M_{N2} \times 0.2 \text{ (When } N1 < 4 \text{ and } N2 > 0)$$

$$E2 = M_{N1} \text{ (When } N2 = 0 \text{ or } N1 \geq 4)$$

4. **E3 – Other Process Engineering Experience (Overall 5% Weightage):** Experience in preparation of complete BDEP / FEED / PEP for non-separation process technologies in refinery, petrochemical, or chemical industries, for units with a minimum feed throughput of 5 TPH.

Evaluation category E3 shall be graded as per the Table 4.0 below:

No. of complete BDEPs / FEED / PEPs developed for non-separation processes/technologies with unit feed throughput > 5 TPH (N)	Marks (M)
0	0
1	40
2	60
3	80
4 and above	100

$$E3 = M_N$$

5. **E4 – Engineering Team Strength (India-based) (Overall 30% Weightage):** Indian office should have at least 10 full-time process engineers with ≥ 3 years' experience in hydrocarbon sector and at least 10 more multidisciplinary full time engineers (Mechanical Engineering, Piping Engineering, Instrumentation & Control, Electrical Engineering, Civil & Structural Engineering, Process Safety/ HAZOP Engineers, CAD/Drafting Specialist, Material/Metallurgy Specialist, Project Engineering/Coordinator).

Evaluation category E4 shall be graded as per the Table 5.0 below:

No. full-time process engineers with ≥ 3 years' experience in hydrocarbon sector (N1)	N1 < 10		N1 ≥ 10	
Marks (M_{N1})	0		100	
No. of Multidisciplinary full time engineers over and above N1 (N2)	N2 < 10	10 \leq N2 < 20	20 \leq N2 < 30	30 \leq N2
	Marks (M_{N2})	0	25	50

$$E4 = M_{N1} \times 0.50 + M_{N2} \times 0.50$$

With respect to the above Tables, the technical score of any particular applicant will be calculated at per the formula given below:

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Technical Score (TS)

$$= E1.A \times 0.50 + E1.B \times 0.10 + E2 \times 0.05 + E3 \times 0.05 + E4 \times 0.30$$

The minimum qualifying score will be 75 out of maximum 100

Declaration of Shortlist and Issue of RFP

1. CSIR-IIP may seek clarifications, if required, from the applicants regarding their submitted Eois. Upon completion of the clarification process, the Eoi submissions shall be evaluated against the prescribed eligibility and qualification criteria, and parties securing a Technical Score (TS) of **75 or above** shall be shortlisted by CSIR-IIP.
2. After approval by the Competent Authority, all participating parties shall be informed of the outcome of the REoi process. Shortlisted parties may be invited to attend a REoi Meeting organized by CSIR-IIP before issuing the RFP.
3. The list of shortlisted parties may be published on the CSIR-IIP website and/or tender portal. Evaluation scores, rankings, and comparative assessment details shall not be disclosed.
4. Shortlisting is an administrative step only and does not confer any legal or contractual right to award of work.
5. Shortlisting shall remain subject to verification of the information and documents submitted. CSIR-IIP reserves the right to withdraw the shortlisting if any information is found to be false, misleading, or unverifiable.
6. Shortlisted parties shall not publicize or advertise their shortlisting without prior written approval of CSIR-IIP.

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FORMAT-1

APPLICANT'S EXPRESSION OF INTEREST (To be furnished on the letter head of the organization)

To,
The Director,
CSIR-IIP,
Dehradun- 248005

Subject: Submission of Expression of Interest (EOI) for the 'Preparation of Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Assistance/Other Services for Toluene Extraction Process'.

Dear Sir,

In response to the invitation for Expression of Interest (EOI) published on GEM CPP portal (<https://etenders.gov.in>) we would like to express interest to carry out the above proposed task. As instructed, following documents have been filled and submitted:

1. Applicant's Expression of Interest as per **Format-1**.
2. Organizational Contact Details as per **Format-2**.
3. Experience & Technical Qualification of the organization as per **Format-3**.
4. List of experts/consultants on payroll as per **Format-4.A and 4.B**.
5. Financial strength of the company as per **Format-5**.
6. Compliance sheet as per **Format-6**.
7. Other documents as per compliance sheet (**Format-6**).
8. Declaration regarding Debarment, Blacklisting and Related Matters as per **Format-7**
9. Valid ISO 9001 Certification
10. Declaration regarding execution of work through Indian office(s) as per **Format-8**
11. Integrity Pact as per **Format-9, signed on each page**
12. Power of Attorney in favor of Authorized Signatory with long and short signature of Authorized person.
13. Udyam Registration Certificate / Certificate of Recognition from DPIIT in case of MSE/ Start-up Applicant

Sincerely yours,

(Signature of the applicant duly authorized)
(Full name of applicant) _____
Date: _____
Stamp _____

Encl.: As above.

Request for Expression of Interest (REOI)

FORMAT-2

Sl. No.	Organization Summary and Contact Details	
1	Name of Organization	
2	Main areas of business	
3	Type of Organization: Firm/Company/JV/Partnership firm registered under the Indian Companies Act, 1956/ the Partnership Act, 1932	
4	Whether the firm has been blacklisted by any Central Govt. / State Govt./PSU/Govt. bodies/ Autonomous/ Any other Body. If yes, details thereof.	
5.	Address of registered office with telephone no., fax, email	
6.	Contact person with telephone no. & email id	

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Request for Expression of Interest (REOI)

FORMAT-3

Experience & Technical Qualification			No. of Projects	
Sl. No.	Category			
1	E1.A	No. of complete BDEPs / PEPs developed for Listed* or similar <u>Separation Based Processes</u> for any Refinery / Petrochemical complex	Throughput ≥ 10 TPH (N1)	Throughput < 10 TPH(N2)
2	E1.B	No. of complete FEED packages developed for Listed* or similar <u>Separation Based Processes</u> having throughput ≥ 10 TPH for any Refinery / Petrochemical complex (N1)		
3	E2	No. of HAZOP studies carried out for separation/non-separation technologies / processes in refinery, petrochemical, or chemical plants, with throughput ≥ 1 TPH	Fully In house (N1)	With external association (N2)
4	E3	No. of BDEP/FEED/PEPs developed for non-separation technologies / processes in refinery, petrochemical, or chemical industries, with throughput ≥ 5 TPH		
5	E4	Engineering Team Strength (India-based) N1 and N2 may be indicated in range if above 30	No. of full time Process Engineers (N1)	No. of Multidisciplinary Engineers** (N2)

- ❖ For each of the categories E1.A, E1.B, E2, and E3 **provide data ONLY since 1st January 2015.**
- ❖ **Listed*** : [CDU, VDU, Naphtha Splitter, Kerosene-Diesel Fractionator, De-Ethanizer, De-Propanizer, De-Butanizer, Propane-Propylene Splitter, Ethylene Fractionator / De-Methanizer / De-Ethanizer Train, Benzene-Toluene Splitter, Toluene-Xylene Splitter, Styrene Distillation Systems, MEG Purification Columns, Reactive Distillation systems, Azeotropic Distillation systems], Extractive Distillation (ED) + Solvent Recovery [Using solvents like NMP, SULFOLANE, NFM, DMSO, DMF, Glycols or similar], Liquid-Liquid extraction (LLE) + Solvent Recovery [Using solvents like SULFOLANE, NFM, NMP, DMSO, DMF, Glycols or similar], Amine based Gas Absorption units] for a hydrocarbon industry (such as a refinery or petrochemical, complex) application.
- ❖ **Multidisciplinary Engineering****: Mechanical Engineering, Piping Engineering, Instrumentation & Control, Electrical Engineering, Civil & Structural Engineering,

Request for Expression of Interest (REOI)

Process Safety/ HAZOP Engineers, CAD/Drafting Specialist, Material/Metallurgy Specialist, Project Engineering/Coordinator

- ❖ For each of the categories E1.A, E1.B, E2, and E3 applicant has to submit the following information:

Overview of the past experience of the Organization						
SI No.	(Project Name) and Scope (BDEP/FEED/PEP/HAZOP STUDY)	Year of completion	Throughput (tph) of the unit designed	Order Value of the assignment in Lakhs of Rs. (Enclose copy of work order)	Name of Client/Organization (enclosed completion certificates)	Copy of Work Order or Completion Certificate enclosed (Yes/No)
1						
2						
3						
4						

- ❖ **FORMAT-4.A and FORMAT-4.B needs to be filled in support for Evaluation Category E4.**

Note:

1. Decision of Evaluating Committee in ascertaining “similar nature” and “similar assignment” will be final.
2. Attach copy of Completion Certificate, or copy of work order

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Request for Expression of Interest (REOI)

FORMAT-4.A

List of experts/consultants on payroll

<u>(Minimum availability of 10 full-time Process Engineers (PE) and 10 additional full-time multidisciplinary engineering (ME) personnel, with at least one engineer in each specified discipline)</u>					
Multidisciplinary Engineering Categories Mechanical Engineer, Piping Engineer, Instrumentation & Control Engineer, Electrical Engineer, Civil / Structural Engineer, Process Safety / HSE Engineer, Drafting / 3D-Modelling Support, Material/Metallurgy Specialist					
Sl. No.	Employee Name	Designation	Area of Expertise	Qualification	Years of Experience
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Note: Applicant has to provide inputs in support of all personnel being considered under Qualification Criteria E4. (*Maximum entries allowed: 40*)

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Request for Expression of Interest (REOI)

FORMAT-4.B

Provident Fund (PF) Returns filed

Employer: _____

Financial Year: _____

Sl. No.	Employee Name	PF Number	PF Returned (Amount in Rs.)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Note: In addition to Format 4.A, applicant needs to fill Format 4.B and get it duly certified and stamped by a Chartered Accountant

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

(Signature of Chartered Accountant)
Name: _____
Registration No.: _____
Date: _____
Stamp _____

Request for Expression of Interest (REOI)

FORMAT-5

Financial strength of the Organization (India Office(s) only)			
Sl. No.	Financial Year	Whether profitable (Yes/No)	Overall annual turnover (In Crore INR.)
1	2022-23		
2	2023-24		
3	2024-25		
4	2025-26 (If ready)		
Average Annual Turnover since FY 2022-23: _____ Crore INR			

Note:

1. *Format should be duly certified and stamped by a Chartered Accountant*
2. *Copy of Balance Sheet for relevant year(s) to be attached*

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

<p>(Signature of Chartered Accountant)</p> <p>Name: _____</p> <p>Registration No.: _____</p> <p>Date: _____</p> <p>Stamp _____</p>
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Request for Expression of Interest (REOI)

FORMAT-6

Compliance Sheet		
SL. No.	Description of Document of be enclosed	Documents enclosed (Yes/No)
1	Format-1 to 8 complete in all respects, duly signed and on Company Letterhead	
2	Power of Attorney in favor of an authorized signatory with short & long signatures of the authorized person	
3	Copy of Certification of Incorporation / Article of Association and Partnership Deed under the Indian Companies Act,1956 & Partnership Act, 1932 respectively	
4	FORMAT-3 (Relevant Work Experience) with Copies of Completion Certificate(s), or Copies of Work Order(s)	
5	FORMAT-4.A (Number and Expertise of Employees on Payroll)	
6	FORMAT-4.B duly signed and stamped by Chartered Accountant	
7	FORMAT-5 (Annual Turnover) duly signed and stamped by Chartered Accountant	
8	Copy of PAN no. certificate enclosed	
9	Copy of GST registration certificate enclosed	
10	Valid ISO Certificate	
11	FORMAT-7 (Declaration Regarding Debarment, Blacklisting, and Related Matters) duly signed with organization seal.	
12	FORMAT-8 (Declaration Regarding execution of work through Indian office(s)) duly signed with organization seal.	
12	FORMAT-9 (Integrity Pact) duly signed and stamped on all pages	
13	Udyam Registration Certificate in case of MSE applicant / Recognition certificate from DPIIT for Startups	

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Request for Expression of Interest (REOI)

FORMAT-7

Declaration

(Regarding Debarment, Blacklisting, and Related Matters)

We hereby confirm our interest in participating in the Request for Expression of Interest (REOI) for the work titled "Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Associated Engineering Services for Toluene Extraction Process."

We further declare and confirm that:

1. Our organization, including its directors, partners, proprietors, and, where applicable, any member of a Joint Venture (JV), consortium, or partnership arrangement, has not been blacklisted, debarred, suspended, banned, or otherwise declared ineligible for participation in tendering/procurement processes by any Central Government Ministry/Department, State Government, Public Sector Undertaking (PSU), Statutory Authority, Autonomous Body, or any other Government Agency as on the date of submission of this EOI.
2. No order of blacklisting, debarment, suspension, or prohibition restricting our participation in public procurement is currently in force against our organization.
3. All information, documents, and particulars furnished by us in connection with this REOI are true, complete, authentic, and accurate to the best of our knowledge and belief.
4. We understand that any misrepresentation, suppression of facts, submission of false information, or material discrepancy found at any stage of the selection process may result in rejection of our EOI, disqualification from further participation and such other action as may be deemed appropriate by CSIR-IIP.

We hereby certify that the above declaration is correct and binding on our organization.

For and on behalf of the Organization

Date: _____

Place: _____

Official Seal of the Organization

Signature: _____
Name: _____
Designation: _____
Organization: _____

Request for Expression of Interest (REoI)

FORMAT-8

DECLARATION REGARDING EXECUTION OF WORK THROUGH INDIAN OFFICE(S)

(To be submitted on the Letterhead of the Applicant)

Subject: Declaration regarding execution of BDEP and SOM through Indian Office(s)

We, _____ (Name of the Applicant), having our registered office at _____, hereby declare and confirm the following:

1. We are participating in the present REoI process through our Indian office/subsidiary, namely _____.
2. In the event of award of work, the complete scope of work pertaining to the preparation and supply of the **Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and associated engineering services** for the project shall be executed entirely through our Indian office(s) located in India.
3. We further confirm that all engineering activities, including but not limited to process engineering, equipment sizing, preparation of Process Flow Diagrams (PFDs), Piping & Instrumentation Diagrams (P&IDs), equipment datasheets, engineering calculations, utility estimates, operating manuals, technical reports, drawings, and all associated deliverables under the assignment, shall be carried out and coordinated through our Indian office(s).
4. We undertake that all engineering deliverables submitted under the assignment shall prominently bear the name and logo of the Indian office/entity through which the work is being executed, wherever applicable.
5. We understand and accept that, for the purpose of evaluation of eligibility and technical experience under the REoI, only the work experience executed through our Indian office(s) shall be considered by CSIR-IIP.
6. We further undertake that any misrepresentation, concealment of facts, or deviation from the above declaration shall render our application liable for rejection and may lead to such other action as deemed appropriate by CSIR-IIP.

We hereby certify that the information furnished above is true and correct to the best of our knowledge and belief.

For and on behalf of the Organization

Date: _____

Place: _____

Official Seal of the Organization

Signature: _____
Name: _____
Designation: _____
Organization: _____

INTEGRITY PACT

FORMAT - 9

Between

Council of Scientific & Industrial Research (CSIR) a Society registered under the Indian Societies Act 1860 represented by Director, CSIR – Indian Institute of Petroleum, Dehradun, Uttarakhand, India, hereinafter referred to as “The Principal”.

And M/sherein referred to as “The Applicant/Bidder/ Contractor.”

Preamble

The Principal intends to seek/award, under laid down organizational procedures, EoI / Contract/s for ***‘Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of Assistance/Other Services for the process: Recovery of High Purity Toluene from Hydrogenated PyGas’***. The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/ transparency in its relations with its Applicant(s) and/or Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - (a). No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - (b). The Principal will, during the tender process treat all Applicant(s) / Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Applicant(s) / Bidder(s) the same information and will not provide to any Applicant(s) / Bidder(s) confidential/additional information through which the Applicant(s) / Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - (c). The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action.

Section 2 – Commitments of the Applicant(s)/ Bidder(s)/ Contractor(s)

- (1) The Applicant(s)/ Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - (a). The Applicant(s)/ Bidder(s)/ Contractor(s) will not, directly or through any other Person or firm, offer, promise or give to any of the Principal’s employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - (b). The Applicant(s)/ Bidder(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, Certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - (c). The Applicant(s)/ Bidder(s)/ Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - (d). The Applicant(s)/ Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the

(Signature of the applicant duly authorized)

Date: _____

Stamp: _____

INTEGRITY PACT

Agents/representatives in India, if any. Similarly the Applicant(s)/ Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Applicant(s)/ Bidder(s)/ Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is annexed and marked as Annexure.

- (e). The Applicant(s)/ Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Applicant(s)/ Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- (3) The person signing IP shall not approach the courts while representing the matters to IEMs and he/she will await their decision in the matter.

Section 3 – Disqualification from tender process and exclusion from future Contracts

- (1) If the Applicant(s)/ Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Applicant(s)/ Bidder(s)/ Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings".

Copy of the "Guidelines on Banning of business dealings" is annexed and marked as **Annexure – 4 of ToR Document**.

Section 4 – Compensation for Damages

- (1) If the Principal has disqualified the Applicant(s) / Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security as applicable.
- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 – Previous transgression

- (1) The Applicant / Bidder declares that no previous transgressions occurred in the last 3 Years with any other Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- (2) If the Applicant(s) / Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings."

Section 6 – Equal treatment of all Bidders / Contractors/ Sub-contractors

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all Subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 – Criminal charges against violating Bidders / Contractors/ Subcontractors

- (1) If the Principal obtains knowledge of conduct of an Applicant/ Bidder/ Contractor or Subcontractor or of an employee or a representative or an associate of an Applicant/ Bidder/ Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitors

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(Signature of the applicant duly authorized)

Date: _____

Stamp: _____

INTEGRITY PACT

- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the JS (A), CSIR.
- (3) The Applicant(s)/ Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Applicant(s)/ Bidder(s)/ Contractor(s) / Subcontractor(s) with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- (5) As soon as the Monitor notice, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- (6) The Monitor will submit a written report to the JS(A), CSIR within 8 to 10 weeks from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problematic situations.
- (7) Monitor shall be entitled to compensation on the same terms as being extended to/provided to Independent Directors on the CSIR.
- (8) If the Monitor has reported to the JS(A),CSIR, a substantiated suspicion of an offence under relevant IPC/PC Act, and the JS(A), CSIR has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commission
- (9) The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 10 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by JS(A), CSIR.

Section 10 – Other provisions

- (1) This agreement is subject to Indian Law. Place of performance and Jurisdiction is the Registered Office of the Principal, i.e. New Delhi
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made
- (3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & On behalf of the Principal)
(Office Seal)

(For & On behalf of Bidder/Contractor)
(Office Seal)

Place.....

Place.....

Date.....

Date.....

Witness 1:

(Name & Address): _____

Witness 2:

(Name & Address): _____

(Signature of the applicant duly authorized)

Date: _____

Stamp: _____

Terms of Reference (ToR)

Selection of Engineering Consultant for

'Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of Assistance/Other Services for the process: Recovery of High Purity Toluene from Hydrogenated PyGas'

1. Description of Assignment:

CSIR–Indian Institute of Petroleum (CSIR IIP), Dehradun possesses the process know-how for an extractive distillation–based technology for recovery of high-purity toluene from hydrogenated pyrolysis gasoline feedstock. CSIR IIP intends to engage an engineering consultant for the development of a Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) for the said technology.

The BDEP shall be developed by the selected engineering consultant based on the Technology Information Package (TIP) prepared by CSIR IIP, a copy of which shall be provided upon issue of official work order and signing of a Non-Disclosure Agreement (NDA). The TIP shall contain the requisite process design basis, technical data, and process engineering inputs necessary to establish the design foundation for BDEP preparation.

The BDEP shall contain necessary and sufficient information to permit any competent Detailed Engineering Contractor (DEC) to prepare detailed mechanical design/ drawings for construction, procurement, commissioning, and operation of the Unit. Contents of BDEP shall be in English language using metric system of measurements and shall contain, but not be limited to, items defined in **Annexure-1**.

In addition to the BDEP, the Engineering Partner shall prepare a Supervisory Operating Manual (SOM) for the Unit. The SOM shall include recommended operating conditions and process control ranges, normal operating temperatures and pressures, start-up and shutdown procedures, emergency operating and upset-handling guidelines, process safety information, special operating precautions, and a description of standard operating practices required for safe, reliable, and efficient operation of the Unit, details of which are mentioned in **Annexure-2**. The SOM shall be of sufficient detail and quality to form the basis for preparation of a detailed Operating Instruction Manual by any DEC during the subsequent Detailed Engineering / Engineering, Procurement and Construction (EPC) phase.

2. Procuring Entity's Organisation Background

The Indian Institute of Petroleum, one of the constituent laboratories under the umbrella of Council of Scientific & Industrial Research (CSIR), was established on April 14, 1960. The Institute has continued its efforts to grow into an internationally renowned R&D organization, providing quality research and innovative technologies for the national and international market place and to produce technical support to the industry. Accredited with ISO 9001: 2008 certificate, Institute is devoted to multidisciplinary areas of Research and Development in the downstream sector of hydrocarbon and

Terms of Reference (ToR)

related industry. CSIR Indian Institute of Petroleum has experience and expertise in the process and product development (lab / bench / pilot scale), process scale-up, process design, process optimization, process improvement, and revamping.

Some of IIP's major activity areas are Petroleum Refining, Catalytic Refining and Catalysis, Separation Process, Solvent Extraction, Adsorption, Membranes, along with evaluation and characterization of Lubrication Oil and Modified Bitumen and Carbon Materials. Other areas of expertise are Thermal Conversion Process, Modeling and Simulation, Chemicals /Petrochemicals, Intermediates and Additives for relevant industries. Process and product development for Specialty Chemicals, Petrochemical intermediates, Bio-processing of petroleum streams; Fuel, Lubes and Chemicals from Biomass are recently introduced.

CSIR IIP has developed several processes and technologies and many of them have been transferred to the industry. Almost every refinery in the country has a product/ technology licensed by the institute. Test techniques are also developed for evaluation of petroleum products with BIS specifications. The institute has also established global tie-ups for contract research and technical services and has filed/granted patents in India and abroad. Large numbers of research papers are published in reputed International and National journals. The institute is bestowed with many prestigious awards in recognition of excellence in various fields.

3. Assignment Background

A leading integrated refining and petrochemical organization, hereafter referred to as “The Client”, operates a large-scale refining and petrochemical complex comprising a Naphtha Cracker Unit (NCU) along with downstream olefin derivative and aromatics processing facilities. As part of the existing aromatics recovery configuration, the complex includes facilities for separation and processing of hydrocarbon streams derived from hydrogenated pyrolysis gasoline (PyGas), including fractionation systems handling C6, C7, and C8 hydrocarbon cuts.

At present, the C7–C8 hydrocarbon stream generated within the complex is partly routed through downstream processing and fractionation units, wherein portions of the C8 fraction are utilized for aromatics recovery, while part of the C7 fraction is blended into refinery fuel streams. The C7–C8 cut contains a significantly high concentration of toluene (approximately 50–55 wt.%), thereby representing a valuable hydrocarbon stream with substantial potential for further value addition and recovery.

In order to enhance value realization from the available PyGas-derived streams and improve aromatics recovery, the Client is evaluating implementation of a dedicated Toluene Extraction Unit (TEU) for recovery of high-purity toluene from the C7–C8 stream. The proposed initiative is expected to support improved feedstock valorization, reduction in dependence on imported aromatic intermediates, and enhancement of overall petrochemical value integration within the complex.

The recovery of aromatics from hydrocarbon streams using solvent-based separation techniques—particularly Extractive Distillation (ED) and Liquid–Liquid Extraction (LLE)—is a well-established and globally practiced technology. In this context, CSIR–Indian Institute of Petroleum (CSIR-IIP), Dehradun, has developed significant domain expertise in solvent-based separation processes for refinery and petrochemical applications, including successful implementation of such technologies in commercial operating units.

Terms of Reference (ToR)

Leveraging this expertise, CSIR-IIP has developed an indigenous Extractive Distillation-based process for recovery of high-purity toluene from PyGas-derived C7–C8 streams. The process is capable of producing toluene with purity greater than 99.9 wt.% while achieving an overall recovery exceeding 98.5 wt.% with respect to feed. The technology has been validated at laboratory scale using representative refinery feedstock, thereby providing a high degree of confidence towards scale-up and commercial implementation.

The Client proposes to invite competitive bids from prospective technology licensors for supply of the toluene recovery technology. As part of the licensor's scope, the following key engineering deliverables are envisaged:

- ❖ Basic Design Engineering Package (BDEP)
- ❖ Supervisory Operating Manual (SOM)

In line with this requirement, CSIR-IIP intends to participate as a technology licensor and shall develop a comprehensive Technology Information Package (TIP), which shall form the basis for downstream engineering and project execution activities.

Accordingly, the present assignment envisages selection and engagement of a competent and experienced Engineering Consultant (EC) for preparation of the BDEP and SOM for a commercial-scale Toluene Extraction Unit having an indicative design feed throughput of approximately 32 TPH.

Note 1:

CSIR-IIP shall initially float an official Request for Expression of Interest (REOI) from prospective Engineering Consultants and identify suitable participants. Based on Eligibility and Qualification Criteria, CSIR IIP will screen Applicants. Shortlisted applicants may be invited for a REOI meeting to discuss the project scope, technical requirements, payment terms, deliverables, timelines, and associated tender conditions. Accordingly, only those parties that have formally responded to the REOI and fit the eligibility and qualification criteria shall be issued the Request for Proposal (RFP) for subsequent submission of Technical and Financial Bids.

The selected engineering consultant shall be required to:

- ❖ Work in close coordination with CSIR IIP for interpretation and translation of process know-how into engineering deliverables
- ❖ Develop a BDEP suitable for detailed engineering and EPC execution
- ❖ Prepare a comprehensive SOM covering safe and efficient plant operation
- ❖ Adhere to stringent timelines, with overall completion targeted within a compressed schedule

The assignment demands a high level of technical competence, multidisciplinary engineering capability, and experience in refinery/petrochemical process design, particularly in the domain of complex separation systems. The outcome of this engagement will form the foundation for subsequent detailed engineering, procurement, and construction of the proposed unit.

4. Statement of Purpose/ Objectives

The purpose of this assignment is to engage a competent engineering consultant for preparation of a

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Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) for a commercial-scale Toluene Extraction Unit (TEU) based on extractive distillation technology developed by CSIR IIP.

The objective is to translate the Technology Information Package (TIP) and licensor know-how into a BDEP suitable for downstream detailed engineering and project implementation.

The key objectives of the assignment are as follows:

- ❖ Preparation of BDEP covering design basis and scope of work as per Annexure – 1 to ensure seamless downstream detailed engineering, procurement, and project execution
- ❖ Development of a Supervisory Operating Manual defining normal operating conditions, start-up and shutdown procedures, emergency handling, and safe operating practices, etc
- ❖ Execution of the assignment within the stipulated schedule through a structured, milestone-driven approach.

Note: The content of BDEP as given in Annexure-1 shall be part of the agreement and no deviation in the contents is permitted.

5. Statement of Assignments Outcomes

The assignment shall result in:

- ❖ A BDEP ready for detailed engineering and EPC execution
- ❖ A Supervisory Operating Manual (SOM) for safe and efficient operation

These deliverables shall enable smooth transition to the project implementation phase.

6. Detailed Scope of Work and Time-line

Scope of Work – Engineering Consultant

Shall cover but not be limited to the following:

- ❖ Review and understand the Technology Information Package (TIP) provided by CSIR IIP and seek necessary clarifications.
- ❖ Participate in design basis finalization in close coordination with CSIR IIP.
- ❖ Carry out all engineering activities in alignment with licensor inputs, process philosophy, and project objectives.
- ❖ Ensure integration across all engineering disciplines (process, mechanical, instrumentation, piping, electrical, civil).
- ❖ Develop and maintain engineering deliverables in a structured, traceable, and version-controlled manner.
- ❖ Coordinate closely with CSIR IIP for technical discussions, interim reviews, and decision-making inputs.
- ❖ Participate in meetings with client (through CSIR IIP) including design reviews,

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clarifications, and presentations.

- ❖ Incorporate and address comments from CSIR IIP and client in a timely and systematic manner.
- ❖ Identify and highlight design gaps, risks, operability/safety concerns, and propose suitable engineering solutions.
- ❖ Ensure consistency across all deliverables (drawings, data sheets, calculations, lists, etc.).
- ❖ Maintain strict adherence to applicable codes, standards, and industry best practices.
- ❖ Ensure confidential handling of licensor data and compliance with NDA requirements.
- ❖ Provide necessary support for bid-stage discussions, technical clarifications, and presentations (if required).
- ❖ Assist CSIR IIP in addressing client queries during evaluation/approval stage.
- ❖ Ensure timely submission of all deliverables as per agreed schedule and milestones.
- ❖ Provide post-submission support till final approval of deliverables by client.

Detailed requirements of BDEP and SOM are provided in Annexure 1 & 2

Scope of Work – CSIR IIP (with respect to Engineering Consultant)

- ❖ Provide the Technology Information Package (TIP) including process know-how, basis of design, and key engineering inputs required for BDEP development.
- ❖ Define and finalize the Design Basis in consultation with EC and client.
- ❖ Review, guide, and validate EC's engineering work to ensure alignment with licensor process philosophy and performance intent.
- ❖ Provide timely clarifications, technical inputs, and decisions required for smooth progress of engineering activities.
- ❖ Conduct and lead design review meetings (PFD, HMB, P&ID, safety, etc.) with EC.
- ❖ Consolidate and communicate client (THE CLIENT) comments to EC and provide interpretation wherever required.
- ❖ Review and approve all key deliverables submitted by EC before onward submission to client.
- ❖ Ensure that the engineering package meets licensor standards, quality expectations, and EPC-readiness.
- ❖ Interface with the client for technical discussions, presentations, and approvals, with support from EC.
- ❖ Safeguard confidentiality and proper use of proprietary/licensor know-how shared with EC under NDA.
- ❖ Monitor EC's progress against agreed schedule and milestones and ensure adherence.
- ❖ Provide necessary inputs for SOM development philosophy and operating guidelines.
- ❖ Support resolution of technical queries raised during client evaluation stage.

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- ❖ Facilitate coordination between EC and client for smooth execution of the assignment.
- ❖ Issue final approval for submission of BDEP/SOM to client after internal validation

7. Tasks, Activities, dependencies, bar chart and Gantt Chart, Milestones

Milestones

Milestone No.	Key Deliverables	Timeline (Weeks)
M1	Kick-off Meeting (KOM), Design Basis Finalization and Data Freeze	T0
M2	Heat & Material Balance (HMB), Process Flow Diagrams (PFDs), Utility Summary and Review Closure	1-2
M3	Final PFDs, Equipment List, Equipment Sizing and Long Lead Equipment Datasheets	2-4
M4	First Issue P&IDs, Logic Diagrams, Control Philosophy and Plot Plan and Review Closure	4-6
M5	Complete BDEP Preparation / Compilation / Submission and Review Closure	6-8
M6	Supervisory Operating Manual (SOM), and Final Package Submission	8-12

Roles & Responsibilities Matrix

Activity / Function	CSIR IIP (Licensor)	Engineering Consultant (EC)	THE CLIENT
Technology Know-how (TIP)	Provide TIP, process philosophy, key parameters	Study, understand, and apply	Review at high level
Design Basis Finalization	Lead and approve	Support, develop drafts	Review and concur
Process Design Philosophy	Define and control	Implement in engineering	Review/approve
Engineering Execution	Guide, monitoring	Primary responsibility for all engineering activities	—
Interdisciplinary Integration	Oversight and review	Ensure full integration across disciplines	—
Deliverable Preparation	Review & approve	Prepare all deliverables	Review final submission
Design Reviews (PFD, P&ID, etc.)	Lead review meetings	Participate, present, revise	Participate & comment
Client Interaction	Primary interface	Support through CSIR IIP	Participate, provide inputs
Comment Resolution	Consolidate & interpret	Address and incorporate	Provide comments
Deviation Control	Approve/reject deviations	Propose (if required)	Review critical deviations
Quality Assurance	Ensure licensor standards	Maintain engineering quality	Review adequacy
Schedule Monitoring	Monitor & enforce	Execute within timeline	Track overall progress

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Data Consistency & Completeness	REVIEW	Ensure consistency across all deliverables	Review
Confidentiality / NDA	Ensure compliance & strict adherence	Ensure compliance & strict adherence	Ensure compliance & strict adherence
SOM Philosophy Inputs	Provide operating philosophy, Lab support manual for carrying out QC tests	Provide industry best-practice, practical inputs, aligned with applicable standards and licensor design intent, Develop document	Review
Submission to Client	Final authority for submission	Support	Receive & review
Technical Queries (Post Submission)	Lead responses	Support with inputs	Raise queries
Approval & Closure	Coordinate closure	Support	Approve

Clarity of Roles

- **CSIR IIP (Licensor):** Owns technology, Final BDEP and SOM, Design intent, and Approval
- **Engineering Consultant (EC):** Owns preparation of BDEP and SOM
- **THE CLIENT:** Owns review, feedback, and final acceptance

Gantt Chart (Work Activity based):

Milestone / Activity	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
M1: Kick-off Meeting (KOM), Design Basis Finalization and Data Freeze												
M2: HMB, Preliminary PFDs, Utility Summary and Review Closure												
M3: Final PFDs, Equipment List, Equipment Sizing and Long Lead Equipment Datasheets												
M4: First Issue P&IDs, Logic Diagrams, Control Philosophy, Plot Plan and Review Closure												
M5: Complete BDEP Preparation / Compilation / Submission and Review Closure												
M6: Supervisory Operating Manual (SOM), and Final Package Submission												

8. Place of Assignment and Touring Requirements if any

The assignment shall primarily be executed at the Engineering Consultant's office. However, representatives of the Engineering Consultant shall attend meetings at The Client's site, as required, including key reviews such as PFD and P&ID review meetings.

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9. Length and Duration of assignments

SCHEDULE OF SUPPLY OF BDEP and SOM

S.No.	Item	Schedule (Weeks from KOM/Design Basis Finalization)
1.	Issue of LOA, Kick-off meeting / Design Basis Finalization Meeting whichever is later	T0
2.	Issue of PFD, Heat & Material Balances	2
3.	Review and Finalisation of PFD/ HMB	3
4.	Datasheets of Long Lead items (Extruder, compressors, Conveying system, Reactors, Feed Pumps, etc.)	4
5.	First issue of P&IDs, Logic Diagram & Plot Plan	5
6.	P&ID, Plot Plan, Control Philosophy and Logic Diagrams review and closure	6
7.	Issue of Complete BDEP	8
8.	Supervisory Operating Manual & Lab Manual	12

Notes:

- 1. Zero Date & Commencement:** Zero Date for the Engineering Consultant (EC) shall be the earlier of:

- ❖ 10 Days from issuance of LOA/Work Order by CSIR-IIP; or
- ❖ Date of Kick-off and Design Basis Finalization Meeting (KO/DBFM).

Any delay attributable to the EC shall not alter the Zero Date.

- 2. Kick-off Meeting Timeline**

- ❖ Within 10 days of LOA issuance by CSIR IIP.
- ❖ In case of delay attributable to EC, Zero Date shall be deemed as 10 days from LOA, with no extension of schedule.

- 3. Liquidated Damages (LD) Framework**

For delays attributable solely to the EC:

- LD = 0.5 % per week delay
- The upper limit of Maximum cumulative LD shall be 10 % (Ten percent) of the contract value.

LD shall not apply for delays attributable to CSIR-IIP.

- 4. Final Acceptance of BDEP and SOM**

Contents of the Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) shall be subject to review and acceptance by CSIR-IIP and the Client. Mere submission of any deliverable by the Engineering Consultant shall not constitute completion, acceptance, or approval of the corresponding milestone.

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The Engineering Consultant shall review, address, and satisfactorily close all comments, observations, queries, and revision requirements raised by CSIR-IIP and/or the Client during the review process. The Consultant shall provide all necessary revisions, supporting calculations, technical justifications, explanations, presentations, and clarifications required for obtaining acceptance of the deliverables.

Final acceptance of the BDEP and SOM shall be deemed to have occurred only upon written confirmation by CSIR-IIP that all review comments have been satisfactorily closed and the deliverables have been accepted by the Client as meeting the approved design basis, project objectives, technical requirements, and contractual scope of work.

The Engineering Consultant shall continue to provide all necessary support, revisions, and clarifications until such acceptance is obtained. No milestone associated with submission of the BDEP and/or SOM shall be considered complete, nor shall any corresponding payment become due, until written acceptance has been issued by CSIR-IIP.

10. Team Composition and Qualification Requirements for the Key Experts (and any other requirements which will be used for evaluating the key experts under the Bid data sheet)

Indian office should have at least 10 full-time process engineers with ≥ 3 years' experience in hydrocarbon sector and at least 10 more multidisciplinary full time engineers across (Mechanical Engineering, Piping Engineering, Instrumentation & Control, Electrical Engineering, Civil & Structural Engineering, Process Safety/ HAZOP Engineers, CAD/Drafting Specialist, Material/Metallurgy Specialist, Project Engineering/Coordinator)

1. Project Manager / Project Lead

Qualification: B.E./B.Tech (Chemical/Mechanical)

Experience: ≥ 5 years

Requirement:

Experience in process engineering / FEED / BDEP projects (not necessarily multiple completed BDEPs)

Role: Overall coordination and interface with CSIR IIP

2. Lead Process Engineer (Key Position)

Qualification: Chemical Engineering

Experience: ≥ 5 years

Requirement:

Experience in distillation / separation systems (fractionation / extraction)

Working knowledge of process simulation tools (Aspen/HYSYS or equivalent)

Role: Process design basis, HMB, PFDs, simulation

3. Process Engineer(s)

Qualification: Chemical Engineering

Experience: ≥ 3 years

Role:

Experience Mass & energy balances, PFD/P&ID preparation, Utility calculations, datasheets,

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in distillation / column design / hydraulics, Demonstrated exposure to similar systems through projects / simulation / vendor interaction

4. Lead Mechanical Engineer

Qualification: Mechanical Engineering

Experience: ≥ 3 years

Role: Equipment datasheets, design conditions

5. Lead Piping Engineer

Qualification: Mechanical Engineering

Experience: ≥ 3 years

Role: Line sizing, layout inputs

6. Lead Instrumentation & Control Engineer

Qualification: Instrumentation / Electronics

Experience: ≥ 3 years

Role: Control philosophy, instrumentation

7. Lead Electrical Engineer

Qualification: Electrical Engineering

Experience: ≥ 3 years

8. Lead Civil / Structural Engineer

Qualification: Civil / Structural Engineering

Experience: ≥ 3 years

9. Lead Process Safety / HSE Engineer

Qualification: Chemical / Safety Engineering

Experience: ≥ 3 years

Note: Can be shared resource or external consultant

Role: Safety review, basic HAZOP support

10. Drafting / 3D-Modelling Support and Materials/ Metallurgy Specialist

Adequate team with relevant experience in PFD/P&ID/layouts, Metallurgy and Materials

Note: CSIR IIP reserves the right to seek clarifications, request technical presentations, or require engagement of domain experts, as necessary, to ensure adequate engineering capability.

11. Capacity Building, Training and Transfer of Knowledge, if any

CSIR IIP shall provide a comprehensive Technology Information Package (TIP) for its Toluene Extraction process from PyGas to the selected Engineering Consultant, strictly under applicable Non-Disclosure Agreement (NDA) provisions. The TIP shall be utilized solely for preparation of the BDEP and SOM in accordance with the defined scope of work.

12. Deliverables, Reporting Requirements and Time Schedule for Deliverables [If no reports are to be submitted, state here “Not applicable.”]

a. Format, frequency, and contents of reports; dates of submission

❖ **Intermediate deliverables Submission:** All intermediate deliverables (including

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PFDs, P&IDs, datasheets, and related documents) shall be submitted in accordance with the defined time schedule.

- ❖ **BDEP Submission:** BDEP to be submitted as per details provided in Annexure 1.

Engineering File Formats

All drawings (PFDs, P&IDs, Plot Plans, Layouts, etc.) shall be submitted in: Native AUTOCAD (.dwg) format + PDF (No locked/non-editable formats shall be accepted).

Data Sheets & Lists

EP shall provide the following in fully editable formats:

1. Line List → MS Excel (with tagging & line numbering philosophy)
2. Instrument Data Sheets → MS Excel (bulk editable)
3. Equipment Data Sheets → Excel/Word (as applicable)

Data shall be consistent with P&IDs and HMB (cross-verified).

- ❖ **Supervisory operating manual submission:** SOM to be submitted as per details provided in Annexure 2.

Draft documents shall be submitted to CSIR IIP in soft copy (and one hard copy, if required) for review. CSIR IIP shall communicate its observations, including corrections, additions, and suggestions, which shall be duly incorporated by the Engineering Partner. The revised final documents shall be submitted to CSIR IIP within one (1) week of receipt of CSIR IIP's comments/observations.

b. Number of copies, and requirements for electronic submission (or on computer media)

- ❖ **Intermediate deliverables:** Intermediate deliverables such as datasheets, PFDs, P&IDs for review may be sent over email.
- ❖ **BDEP:** 4 hard copies (final, signed & stamped) and 4 soft copies (USB drives/cloud transfer)
- ❖ **SOM:** 4 hard copies are to be supplied to CSIR IIP and 4 copies (editable soft & PDF) in USB drives are to be supplied to CSIR IIP.

c. Persons (indicate names, titles, submission address) to receive them;

Dr Atul Ranjan

Senior Principal Scientist, Head Business Development
CSIR-Indian Institute of Petroleum
PO IIP, Mohkampur, Haridwar Road
Dehradun-248005 (UK) India
Email: atul.ranjan@csir.res.in

Sh. Prasenjit Ghosh

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Senior Principal Scientist
CSIR-Indian Institute of Petroleum
PO IIP, Mohkampur, Haridwar Road
Dehradun-248005 (UK) India
Email: prasanjeet.ghosh@csir.res.in

Dr Sunil Kumar
Senior Principal Scientist
CSIR-Indian Institute of Petroleum
PO IIP, Mohkampur, Haridwar Road
Dehradun-248005 (UK) India
Email: sunil.kumar02@csir.res.in

13. Background material, Data, reports, records of previous surveys, and so on, to be provided to the consultant (Mention a caveat about reliability of material provided and need for the consultant to verify and crosscheck vital aspects)

CSIR-IIP shall provide a comprehensive Technology Information Package (TIP) to the Engineering Consultant as the basis for development of the Basic Design Engineering Package (BDEP). The TIP shall include, but not be limited to, the Design Basis, Process Description, Process Flow Diagrams (PFDs), stream-wise Heat and Material Balance, utility consumption estimates, preliminary equipment datasheets (including columns, vessels, pumps, heat exchangers), Feed and Product characterization data, Product Quality Specifications, Effluent summary, List of chemicals and solvents along with Material Safety Data Sheets (MSDS), and other relevant process, operational, and technical information available with CSIR-IIP for execution of the assignment.

14. Facilities such as local conveyance, office space, office machines, secretarial assistance, utilities, local services, etc., which would be provided to the consultant by the Procuring Entity (Specifically mention, what facility/ utilities would not be provided and also, charges if any for facilities offered)

Discussion room/space at CSIR IIP Campus, in case the kickoff meeting / any review meeting is held physically at CSIR IIP, Dehradun

15. Institutional and organisational arrangement

a. Counterpart Project Manager and Team

Consultancy Evaluation Committee (CEC) and Contract Monitoring Committee (CMC)

A Consultancy Evaluation Committee (CEC) and Contract Monitoring Committee (CMC) shall be constituted by CSIR-IIP with the approval of the competent authority in

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accordance with the applicable provisions of the *Manual for Procurement of Consultancy and Other Services (Second Edition, 2025)* issued by the Government of India, Ministry of Finance, Department of Expenditure. The provisions and principles laid down in the said Manual shall serve as guiding principles for the constitution and functioning of these Committees. The Committees shall comprise members from relevant functional areas including, but not limited to, Technical, Finance, Purchase, Business Development (BD), RPPM, and Administration, as deemed necessary and duly approved by the Director, CSIR-IIP. The composition may additionally include domain experts or any other members considered necessary for effective discharge of their respective responsibilities.

- 1. Consultancy Evaluation Committee (CEC):** The Consultancy Evaluation Committee (CEC) shall be responsible for managing all activities associated with the consultant/Engineering Partner selection process. The Committee shall oversee activities including review of EOI responses, formulation and finalization of technical requirements and evaluation criteria, assessment of technical and financial proposals, conduct of discussions and clarifications, and recommendation of the most suitable Engineering Partner for the assignment. The CEC shall ensure that the selected consultant possesses the necessary technical capability, relevant experience, and resources required for successful execution of the project.
- 2. Contract Monitoring Committee (CMC):** Following award of the contract, the Contract Monitoring Committee (CMC) shall function as the project oversight and governance mechanism during the contract execution phase. The Committee shall monitor progress against agreed milestones and deliverables, review the adequacy and quality of submitted outputs including BDEP, SOM, and associated engineering deliverables, monitor compliance with contractual obligations, identify implementation risks and bottlenecks, and facilitate timely resolution of issues arising during project execution. The CMC shall ensure satisfactory and timely completion of the assignment in accordance with the agreed contractual requirements and project objectives.

b. Chain of Command for reporting

Selected Vendor ← → PI/CO-PI (Primary contacts) ← → CEC/CMC ← → Director, CSIR IIP

16. Procedure for review of the work of consultant after award of contract

As per the provision in the MANUAL FOR PROCUREMENT OF CONSULTANCY SERVICES (Second Edition, 2025), Government of India, Ministry of Finance, Department of Expenditure

17. Minimum Eligibility Criteria for participation in EOI or Subsequent Tendering Process

Engineering Consultants/Engineering Companies shall satisfy the following minimum eligibility requirements:

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1. Legal Status

The Applicant shall be an Indian engineering consultancy firm, company, or organization, defined as an entity incorporated or registered in India, including Indian subsidiaries, branch offices, or project offices of international engineering companies operating in India and undertaking engineering assignments for domestic projects.

The Applicant shall possess a valid registration to operate in India and shall be solely responsible for execution of the assignment and compliance with all applicable statutory, contractual, and regulatory requirements in India.

2. Quality Management System

The Applicant shall possess a valid ISO 9001 certification in force on the date of submission of the EoI.

3. Average Annual Turnover

The Applicant shall have an average annual turnover of at least 3.00 Crore INR since FY 2022 – 23.

4. Blacklisting

The Applicant shall not have been blacklisted, debarred, banned, or declared ineligible by any Government Department, Government Agency, Public Sector Undertaking (PSU), Central Public Sector Enterprise (CPSE), or Statutory Authority as on the date of submission of the EoI. **(For details refer Annexure 3 of ToR)**

5. Consortiums and Joint Ventures

Considering that the assignment involves closely integrated, multidisciplinary, and time-bound engineering activities requiring single-point responsibility, seamless coordination, and expedited decision-making, participation through consortiums, joint ventures (JVs), partnerships, associate arrangements, or similar collaborative structures **shall not be permitted**. Participation shall be permitted only as a single legal entity.

Relaxation in Turnover Requirement for MSEs and Start-ups

Micro and Small Enterprises (MSEs) registered under Udyam Registration and Start-ups recognized by the Department for Promotion of Industry and Internal Trade (DPIIT) shall be exempted from the minimum average annual turnover requirement specified in the Qualification Criteria (QC), subject to the following:

- a. The Applicant shall submit valid documentary evidence of its status as an MSE and/or DPIIT-recognized Start-up along with the EoI.
- b. CSIR-IIP reserves the right to verify the authenticity and validity of the submitted registration certificates and supporting documents.

Non Relaxation in Prior work experience

The work is highly specialized in nature and requires proven experience in refinery/petrochemical process engineering and hydrocarbon separation systems and plant safety. Any shortcomings in process design, equipment sizing, process safety considerations, control philosophy, relief system design, or integration with existing facilities may lead to serious operational and safety issues.

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Since the unit will operate within an existing petrochemical environment where there is practically no room for engineering errors, therefore the Applicant should have demonstrated prior experience and multidisciplinary engineering capability in handling similar refinery/petrochemical projects.

Accordingly, the prescribed prior work experience criteria are kept mandatory for all applicants, including MSEs/startups.

CONTENTS OF BASIC DESIGN ENGINEERING PACKAGE (BDEP)

The package shall contain adequate process and mechanical design data and information to proceed with and perform the detailed engineering, procurement, construction, and commissioning of the Projects. All documents shall be in accordance with the Project specifications. Basic Design Engineering Package shall comprise (but not limited to) to the following:

1. DESIGN BASIS

The design basis shall contain the following minimum details:

- ❖ Capacity of the Unit - m³/hr, MT/day, KTA
- ❖ On stream days/ year
- ❖ Feed characteristics
- ❖ Yield of Products and their characteristics
- ❖ Battery limit conditions of feed and products
- ❖ Utility specifications
- ❖ Design criteria and requirements
- ❖ Solvent type and its characteristic
- ❖ Turn Down ratio of the Unit
- ❖ Environmental/ Safety requirements
- ❖ Other special requirements.

2. BASIC ENGINEERING DESIGN DATA

- ❖ General information about Unit location, applicable codes & standards, system of measurements, etc.
- ❖ Utility information – Battery Limit (B/L) conditions, qualities & other specifications for steam, power, water, air, Nitrogen, BFW, fuels, etc.
- ❖ Equipment design information-specification/ preferences, size limitations, sparing philosophy (by THE CLIENT), etc. for all equipment.
- ❖ Design information regarding instruments, type, site information, climate data, seismic data, winterizing philosophy, etc.

3. PROCESS DESCRIPTION

Process description shall include the following minimum information:

Detailed Process Principles and chemistry

Detailed Process description of all the sections of the unit

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4. PROCESS FLOW DIAGRAM

Existing PFDs to be updated to indicate modifications made to the existing plant and new PFDs are prepared for new systems. The following information to be shown on the process flow diagrams:

- ❖ Process flow scheme
- ❖ Item number and service name of all major equipment
- ❖ Normal operating conditions of major process streams including temperature and pressure profiles along with flow rates
- ❖ Main control loops and instrumentation necessary for understanding the process
- ❖ Outlines of columns, vessels and reactors indicating number of trays, packing, internals, major nozzles, feed and product nozzle locations
- ❖ Allocation of shell and tube side of heat exchangers
- ❖ Pumps
- ❖ All process and utility streams shall be numbered. The numbering shall correspond to Heat and Material balances. When there is a change in temperature, pressure or flow rate of the stream, a new stream number shall be assigned. The enthalpy and material balance information issued with PFD's shall have complete thermo-physical and transport property data for all numbered process streams
- ❖ All incoming and outgoing streams shall be flagged showing battery limit pressures and temperatures and indicating their source/ destination.

5. HEAT AND MATERIAL BALANCE

a. Heat & Material balance with stream number for the expansion case is to be given. This will show at least the following:

- ❖ Stream number (corresponding to PFD)
- ❖ Name and phase of fluid
- ❖ Total Component-wise Mass Flows, Total Stream Enthalpy, Total mass flow
- ❖ Volumetric Flow rate
- ❖ Normal operating temperature
- ❖ Normal operating pressure
- ❖ Density of fluid at operating conditions (Vapor and Liquid separately for 2-phase streams)
- ❖ Specific gravity of liquid
- ❖ Vapor molecular weight
- ❖ Kinematic Viscosity at operating conditions (Vapor and liquid separately for 2-phase streams)

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- ❖ Thermal conductivity at operating conditions (Vapor and liquid separately for 2-phase streams) Cp/Cv, Compressibility Factor of vapor
 - ❖ Critical temperature and critical pressure
 - ❖ Stream composition, if of essence
 - ❖ Stream Enthalpy (Vapor and liquid separately for 2-phase streams)
 - ❖ Specific heat
 - ❖ Surface Tension
 - ❖ Any other property as considered necessary
- b. Utility flow diagrams and summary for steam shall be submitted for all possible operating scenarios including start-up, shut down, tripping of steam user, power failure, etc

6. MATERIAL SELECTION DIAGRAM

A Process Flow Diagram modified to indicate materials selected for major process equipment and piping.

7. PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)

ISBL Process P&IDs of the unit to be provided. The purpose of P&IDs is to allocate, identify and specify all piping, special piping items and instruments in the unit consistent with the process flow scheme on the PFD. Existing P&IDs to be updated to indicate modifications made to the plant and new P&IDs to be prepared for new systems. The following information to be shown on the P&IDs:

Piping

- ❖ Process lines required for normal operation, start-up and shutdown.
- ❖ Utility lines required for servicing the unit (no distribution).
- ❖ Line size and piping materials specification for process lines.
- ❖ Special piping items, like valves, spectacle blinds, drains and vents.
- ❖ Heat tracing and jacketing where required for process and/or winterization reasons.
- ❖ Requirements for sampling, sloping of lines, hot or cold flushing, purges, blanketing, etc.
- ❖ Tie-in points indicated
- ❖ Piping Material specification (PMS) for changes/ new piping.

Instruments

- ❖ Instruments required for normal, startup and shutdown.
- ❖ Control loops and instruments for proper and safe operation.
- ❖ Air failure position of control values.
- ❖ Set pressures of safety valves.

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Equipment

Equipment is shown on the P&ID's. To clarify the process scheme, the equipment drawings on the P&IDs show the following:

- ❖ Outline.
- ❖ Internals for heater/ vessels/ towers/ reactors/ drums
- ❖ Types of heat exchangers.
- ❖ Types of rotating equipment with driver type.
- ❖ All nozzles

Engineering Consultant to provide Piping Material specification (PMS) in BDEP for new piping. Section wise P&IDs showing all the process equipment, equipment number and titles, process piping, steam out & purge connection, line sizes, vessel sizes, full instrumentation with tag no., steam tracing/ insulation requirements of lines (thickness excluded)/ vessels, PSV/ relief valve sizes, control valves (with fail safe position), vent, drain, sample points locations, process requirements with respect to location like BTL of column, Bottom of vessels/ gradients of piping/ type of valves, etc. Each piping should be tagged indicating line no., size of pipe, steam tracing & jacketing requirement, metallurgy, pressure rating, etc. as per procedure to be mutually agreed. P&IDs should include, i.) column diameter, height, type & number of trays, ii) vessel's overall dimension iii) rotary equipment- type, capacity & differential pressure, iv) heat exchanger- type, duties, v) furnace- heat duty. P&IDs should include start up, shut down and emergency lines and instruments, vent drains for process and operating requirement.

- a) **Safety relief system** - Specify the means of disposal of materials produced from pressure relieving / blow down system. The relief devices should take care of loads for emergency situations like power, steam, utility failure, etc.
- b) **Piping line list**- Piping line list should include line number, service, line size, material specification, routings (from, to), reference P&ID number, operating & design conditions, insulation/ tracing, remarks, etc. Also provide details of any special piping items, if any.
- c) **Instrumentation:**
 - All instruments required for normal operation and abnormal condition, including startup and shutdown.
 - Control loops and instruments for proper and safe operation.
 - Air failure position of control valves
 - Set pressures of safety valves
 - Additional instrumentation as may be required for implementation of Advanced Process Controls at a later date.
- d) **Equipment:**

The equipment on the P&IDs will show the following characteristics in line with

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the
information provided on equipment data sheet.

- Outline sketch
- Internals for heaters/ vessels/ towers/ reactors
- Types of heat exchangers
- Types of rotating equipment with driver type
- All nozzles

8. **PROCESS CONTROL PHILOSOPHY**

The method of control as shown on the PFD will be explained. Control algorithms of special loops, if any, used for operability/ optimization shall be provided with explanation.

9. **UTILITIES, CHEMICALS, SOLVENT & EFFLUENTS**

a. **Utility**

Utility summary (equipment wise) indicating estimated utilities requirement

List of priority consumers requiring emergency utility supply along with overall estimated consumption and/or production of the following utilities for design case:

- ❖ Boiler feed water/ DM Water
- ❖ Steam at different levels (SHP/ HP/ MP/ LP)
- ❖ Condensate
- ❖ Blow-down
- ❖ Fuel
- ❖ Nitrogen
- ❖ Plant air/ Instrument air as required for the process
- ❖ Power
- ❖ Cooling water
- ❖ Raw/ Process water
- ❖ Flushing Oil
- ❖ Solvent
- ❖ Service Water
- ❖ Chilled Water
- ❖ Bearing Cooling Water
- ❖ Any other gas required for blanketing/ environment required for inhibitor activity in storage tanks/ promote desirable reaction in the reactor
- ❖ Any other solvent required in fractionation/ azeotropic distillation of the section of the unit

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The estimates are to be provided as minimum, normal and maximum. Apart from continuous utility requirements, complete data must be given on intermittent utility requirements during start-up, shut down and emergencies.

b. Chemicals

- ❖ Chemical specifications-initial charges and consumption rates
- ❖ ISBL handling/ storage, loading / unloading and dosing facilities for chemicals
- ❖ Physical & chemical properties
- ❖ List of major manufacturers, suppliers

c. Description of handling/ storage, loading/ unloading of dosing facilities

- d. Requirement of Nitrogen - Quality, Quantity required during start-up/ shutdown/ normal operation showing continuous as well as peak requirement for each case

e. Effluent Summary

The effect of LICENSOR's process on the ambient shall be brought out clearly as follows:

- ❖ Details of effluent treatment facilities included in the battery limit, if any.
- ❖ Identify and summarize the gaseous emission, composition and flow rates during normal and emergencies.
- ❖ Identify and summaries liquid effluents, its composition and flow rates during normal and emergencies.
- ❖ Identify and summarize solid wastes including catalysts etc. and quantities during normal and emergencies. Provide recommended method of disposal. The concentration of any hazardous/ toxic components shall be defined.
- ❖ Quality and quantity of sour water in respect of H₂S & NH₃ shall be indicated if applicable
- ❖ The effluent shall be treated in LICENSEE's Effluent Treatment Plant (ETP) for Physical treatment such as TPI followed by Chemical Treatment for PH Control and Biological Treatment only. The effluent quality shall be suitable for treatment in Owner's/ LICENSEE's ETP
- ❖ The refinery waste-water system is based on recycling major part of the treated effluent for reuse in the refinery. As a result, no appreciable dilution of effluents from proposed unit will be available.

10. STREAM SUMMARY: A summary of all the streams shall be provided furnishing all the information/ properties (fluid state, flow rate, operating conditions of pressure & temperature, composition, and physical properties viz. Sp. gr., molecular wt., viscosity, specific heat, thermal conductivity, etc.) of each stream.

11. LOGIC DIAGRAMS: Logic diagram along with description shall be provided showing the emergency shutdown causes and the effects on the emergency shutdown valves as

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installed in the unit. Details of logic system along with shutdown/ logic diagram of process interlocks including trips will be furnished.

Control algorithms/ functional block of special/complex loops will be provided with explanation, to supplement the P&IDs.

12. HAZARDS & OPERABILITY / OCCUPATIONAL SAFETY

- a. P&IDs furnished in Basic Design Engineering Package would incorporate preventative measures for the identified hazards based on HAZOP studies carried out earlier for similar jobs. However, during detailed engineering, the identified hazards will be analyzed, and preventive measures will be incorporated in the design to prevent the hazards.

LICENSOR shall include data on release rates, conditions, etc. for hazardous release cases, to enable carrying out consequence analysis using Dispersion Model.

- b. Material Safety Data Sheets (MSDS) shall be provided for all chemicals and catalysts
- c. Guidelines for any specialized (due to special catalysts/ chemicals or process requirement) fire protection and gas detection system for protection of equipment and personnel shall be provided.

13. FLARE LOAD/ FLARE SYSTEM:

- a. The package shall contain a detailed tabulation of safety valves, equipment wise and failure contingency wise, showing relieving capacity (also inputs used in arriving relieving capacity), relief valve settings, scenario/ emergency leading to relief, relief location, composition/ temperature of relief vapor/ fluid, etc.
- b. The estimated maximum emergency cumulative flare load is to be shown in Basic Design Engineering Package. If maximum cumulative flare load is to be shown excessively high, alternate means of reduction of load to reasonable level should be considered.
- c. If liquid/ two phase flow blow down is considered then flare knock out drum shall be within the battery limit of the unit. Engineering Consultant to provide plot area and enough information for Detailed Engineering Contractor to design the KOD.

14. UTILITY BALANCE

- a. Utility balance to be provided for the following process related utilities:
 - ❖ Steam and condensate
 - ❖ Cooling water
 - ❖ Fuel
 - ❖ Electrical power
 - ❖ Nitrogen
 - ❖ Boiler Feed Water

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15. UTILITY FLOW DIAGRAMS

The following information will be shown on the utility flow diagram:

- ❖ Utility flow scheme
- ❖ Item number and service name of equipment
- ❖ Main control loops and instrumentation
- ❖ Outlines of vessels indicating major nozzles
- ❖ Types of heat exchangers
- ❖ Allocation of shell and tube side of heat exchangers
- ❖ Types of pumps
- ❖ Utility consumption or production flow rates
- ❖ Source/ destination of incoming and outgoing streams

16. EQUIPMENT SPECIFICATIONS

Equipment list (indicating type, tag number, service) is to be provided.

A tie-in list to be provided showing the following

- ❖ Tie-in tag number.
- ❖ P&ID location.

LICENSOR will submit the datasheets for that equipment which are new. These should be sent for review/ comments of LICENSEE before making them part of BDEP.

List of new & modified Equipment list (indicating type, tag number, service) will be provided. The datasheets of all the new and modified equipment will be provided as per the requirements given below. For critical equipment (such as RGC, HP exchangers, etc.) in which no modification / change is envisaged, but the operating parameters are getting changed, revised datasheets are to be provided.

Each piece of equipment will be specified on an equipment process data sheet indicating min/ normal/ max flows (based on turn down and rated flow), pressure, temperature along with design conditions, etc. Detailed specifications shall be as given below:

a. Heat Exchangers/Waste Heat Steam generators/Water cooler/Air cooler:

- ❖ Heat transfer duty, heating/cooling curves (as required)
- ❖ Inlet/outlet process conditions with physical properties.
- ❖ Type of exchanger including TEMA type
- ❖ Fouling Factors
- ❖ Heat Transfer Coefficients
- ❖ Max Allowable pressure drop
- ❖ Mechanical design conditions and data-sheets.
- ❖ Materials of construction & corrosion allowance.

b. Pumps:

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- ❖ Inlet/ outlet process conditions with physical properties
 - ❖ Mechanical design conditions
 - ❖ Materials of construction, corrosion allowance
 - ❖ Differential head
 - ❖ NPSH available
 - ❖ Hydraulic power
 - ❖ Type of pump and driver
 - ❖ Rated power requirement
 - ❖ Special requirements like seal, flushing arrangement, suction filters along-with specification
- c. **Vessels/ Columns/ Towers:**
- ❖ Inlet/ outlet process conditions with physical properties
 - ❖ Mechanical design conditions
 - ❖ Materials of construction, strip-lining, corrosion allowance of vessel including all internals.
 - ❖ Vessels/ towers/ column sketches
 - ❖ Construction data (position, overall dimension, elevation, type of head)
 - ❖ Number, type and spacing of trays for column
 - ❖ Packing, mesh blankets
 - ❖ Refractory/ special lining selection specification, anchor type and general notes
 - ❖ Elevation and size of all nozzles including instrument tapping points
 - ❖ Manhole/ hand-hole details
 - ❖ High, low and normal liquid levels
 - ❖ Standard tray loading process data sheet for columns/ towers
 - ❖ Demister details along-with specifications, if required
- d. **Heaters:**
- ❖ Type of heater
 - ❖ Heat transfer duty, including enthalpy curves
 - ❖ Inlet/ outlet process conditions with physical properties
 - ❖ Mechanical design conditions
 - ❖ Materials of construction, corrosion allowance
- e. **Filters:**
- ❖ Inlet/ outlet process conditions with physical properties

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- ❖ Mechanical design conditions
- ❖ Materials of construction
- ❖ Type of filter
- ❖ Solid data

f. **Miscellaneous Equipment:**

The duty specifications/ characteristics for miscellaneous equipment shall be provided.

17. **EQUIPMENT LIST**

An equipment list will be provided showing the following:

- ❖ Equipment type
- ❖ Equipment tag number
- ❖ Service name

18. **INSTRUMENTS SPECIFICATIONS**

LICENSOR will submit the data sheets for that instrument which are new.

Instrument list with process data (min./ normal/ max value, alarm limits low & high, engineering units) shall be supplied in the package. A summary I/O count for the Distributed Control System/ Programmable Logic Controller shall be furnished.

Each control valve, safety valve and analyzer will be specified on an instrument process data sheet. The data sheet must include the size and spec of the line in which the corresponding instrument is installed. The ultimate instrument design conditions must be verified and confirmed by the detailed engineering contractor during the project implementation phase.

For the specific types of instruments, the following information will be provided:

a. **Control Valves / Flow Elements:**

- ❖ Process design conditions
- ❖ Min/ normal/ max flow
- ❖ Mechanical design conditions
- ❖ Differential pressure
- ❖ Air failure position for Control Valve

b. **Safety Valve:**

- ❖ Process design conditions
- ❖ Type
- ❖ Mechanical design conditions
- ❖ Relief and flare system data
- ❖ Relief rates, conditions & compositions

c. **Analyzers:**

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- ❖ Process design conditions
- ❖ Mechanical design conditions
- ❖ Type of analyzer
- ❖ Composition

19. CAUSE AND EFFECT DIAGRAM

A cause-and-effect diagram will be provided showing the emergency shutdown causes and the effects on the emergency shutdown valves as installed in the unit. Licensor to furnish Control narratives

20. ELECTRICAL ENGG. DESIGN DATA SHEETS

Electrical load summaries listing all power consumption/ consumers shall be furnished. Electrical area classification drawing and conceptual single-line diagram (indicating voltage level, power supply source, emergency distribution system, etc.) shall be included. Review area classification documents prepared by DEC/ EPC consultant.

21. PIPING SPECIFICATION

- I. Complete set of relevant pipe classes, specifications, line list (indicating line no. operating and design conditions). To include metallurgy, flange facings, ratings, gasket types, safety valve sizes, settings, locations, tabulation of relieving capacities, inputs used in arriving at these relieving capacities.
- II. For special specification valves, engineered piping material, etc., if any, specification datasheet shall be provided.
- III. Licensor to use Piping Material Specification (PMS) in line with the PMS of the existing unit.

22. PLOT PLAN

LICENSOR shall indicate equipment layout plan of the unit, access area, necessary plot plan, etc., meeting OISD-118 and all other statutory guidelines. At a subsequent stage, the equipment layout/ plot plan developed during detailed engineering to be reviewed and cleared by LICENSOR from technological/ operational requirement. Existing layout will be provided by LICENSEE.

Develop and optimize overall specific plot plan showing all facilities including key major equipment, main pipe-ways/ pipe racks, roadways, construction accesses, etc. The location and orientation should be governed by inter relationships of process units, maintenance/ shutdown consideration, safety, construction access and statutory requirements like Oil industry Safety Directorate (OISD).

23. GUIDELINES TO DETAILED ENGINEERING CONTRACTOR: General note for Detailed Engineering Contractor to follow detailed design guides or requirement, if any, specific to the unit.

24. MAJOR PROCESS HAZARDS AND SAFETY SYSTEM: Basic design engineering package shall contain a description of the major potential hazards and safety system employed to control those potential hazards.

25. RECOMMENDED VENDORS: For critical equipment & material such as reactor, special

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category pumps, catalyst handling equipment, slurry filter, special valves, refractory materials, coalescers, analyzers, etc

26. POST PROJECT SUPPORT:

The Engineering Consultant (EC) shall provide all necessary technical support, clarifications, explanations, review comments, and engineering assistance arising out of the BDEP, SOM, and associated deliverables prepared under this Contract throughout the Detailed Engineering, Procurement, Construction, Pre-Commissioning, Commissioning, Start-up, Performance Guarantee Test Run (PGTR), and stabilization period of the Project.

Such support shall include, but not be limited to:

- a. Responding to technical queries, requests for clarification (RFCs), technical deviations, design interpretations, and engineering comments raised by CSIR-IIP, the Client, PMC, Detailed Engineering Contractor, EPC Contractor, LSTK Contractor, Vendors, or any agency authorized by the Client;
- b. Review and confirmation of engineering documents, process calculations, equipment sizing, operating philosophy, control philosophy, process safety-related matters, utility integration, and other matters directly related to the BDEP and SOM prepared by the EC;
- c. Providing revised calculations, explanatory notes, technical memoranda, corrigenda, or amendments to the BDEP/SOM where required due to omissions, inconsistencies, or clarification needs attributable to the original engineering package;
- d. Supporting resolution of technical issues encountered during implementation and start-up, to the extent such issues relate to the process design and engineering package prepared under this Contract.

The EC shall provide such support from the Effective Date of Contract until successful completion of the Performance Guarantee Test Run (PGTR) of the Project or five (5) years from submission and acceptance of the final BDEP/SOM, whichever occurs earlier.

The EC shall ensure that all technical queries are acknowledged within three (3) working days and responded to within seven (7) working days, unless a different timeline is specified by CSIR-IIP based on the criticality of the matter.

No claim for additional payment on account of the duration, frequency, volume, or number of technical queries raised during the support period shall be entertained, and the EC shall be deemed to have included the cost of such services in its quoted Contract Price.

The EC shall maintain access to suitably qualified process engineering personnel familiar with the developed BDEP/SOM throughout the support period. Replacement of key personnel shall not relieve the EC of its obligations under this Contract.

NOTE:

- In case Basic Design Engineering Package contains any reference to any specification or code of practice, other than those, which are published, copies of such documents

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shall be included in Basic Design Engineering Package.

- Basic Design Engineering Package shall be complete with all necessary information to enable a competent engineering contractor to undertake the detailed engineering prepare proposal documents for equipment, procure materials and equipment and construct the unit.
- 4 hard copies with 4 CDs/ USB drives are to be supplied.
- PFDs, P&IDs & Drawings made on AUTOCAD are to be given on CDs / USB drives.
- Line list & instrument data sheet shall be provided on MS EXCEL & given on CDs / USB drives
- Proprietary items if any, used in the process should be clearly specified. The proprietary item shall be defined as that item which is available on single source basis. Single source basis means either supplied by Engineering Consultant or Engineering Consultant recommended single vendor. Engineering Consultant should indicate its firm quotation. Engineering Consultant shall give the justification for the items to be proprietary in nature.

CONTENTS OF SUPERVISORY OPERATING MANUAL (SOM)

1. CONTENTS:

Operation Manual shall include, but not be limited to the following:

- ❖ Introduction
- ❖ Basis of Design
- ❖ Feed and Product specifications
- ❖ Principles of operation Basic Operating Scheme of Aromatic Extraction, Solvent Circulation and Water Circulation
- ❖ Effect of Operating Variables (Factors Affecting Solvent Losses and Solvent Quality) & Factors Affecting Aromatic Recovery and Purity
- ❖ Process Description
- ❖ List of utilities and consumption rate
- ❖ List of catalyst and chemicals with consumption rate
- ❖ Preparation for initial start-up including catalyst/Solvent loading, catalyst sulfiding, refractory dry out, acid cleaning, alkali boil out, passivation, etc.
- ❖ Proprietary equipment/ chemicals/ catalyst/Solvent
- ❖ Description of Instrumentation
- ❖ Process Control Philosophy
- ❖ List of alarms & trips
- ❖ Pre-commissioning Activity/ Procedure
- ❖ Details of Start-up Procedure
- ❖ Bar chart indicating each activity against time required (proposed) for start-up
- ❖ Normal operation Procedure
- ❖ Normal shut-down Procedure
- ❖ Catalyst Loading/ Unloading Procedure
- ❖ Emergency Handling Procedures under following cases:
 - Fire due to serious leaks
 - Feed failure
 - Instrument air failure
 - Power failure
 - Steam failure

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- Cooling Water failure
 - 110 AC supply failure
 - DCS failure
 - Critical pump
 - Fuel Oil failure
 - Any other case felt necessary by Licensor
- ❖ Safety recommendations & procedure and operating personnel safety requirement.
 - ❖ Fire and Safety Procedures
 - ❖ Material Safety Data Sheets
 - ❖ Hazards and toxicity of chemicals and solvents.
 - ❖ Drawings and diagrams
 - ❖ Special maintenance procedure
 - ❖ Description of routine and non-routine analysis for start-up, normal operation and shut down of plant.
 - ❖ Detailed procedure and type of equipment required for necessary routine and non-routine analysis.
 - ❖ Detailed procedure and type of equipment required for necessary routine and non-routine laboratory analysis.
 - ❖ Sampling schedule during normal operation and start-up of the unit.

2. **NUMBER OF COPIES:**

- ❖ 4 hard copies are to be supplied.
- ❖ 4 copies (editable soft & PDF) in USB drives are to be supplied.
- ❖ Editable soft copy will enable consultant to prepare detailed manual

F.No.2/6/2026-PPD(i)
 Government of India
 Ministry of Finance
 Department of Expenditure
 Procurement Policy Division

709, Chanderlok Building,
 Janpath, New Delhi
 08.05.2026

OFFICE MEMORANDUM

Subject: Amendment in the General Financial Rules, 2017 (GFR, 2017) – Rule 151 relating to Debarment from bidding.

It has been decided, with the approval of the competent authority, to make the following amendment in GFR, 2017:

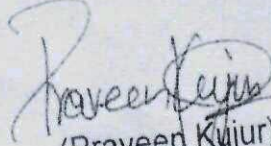
Existing Rule	Amended Rule
Rule 151- Debarment from bidding	Rule 151 – Debarment from bidding
(i) A bidder shall be debarred if he has been convicted of an offence— (a) Under the Prevention of Corruption Act, 1988; or (b) The Bharatiya Nyaya Sanhita or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract.	(i) A bidder shall be liable to be debarred if— (a) he has been convicted of an offence under: (1) the Prevention of Corruption Act, 1988; or (2) the Bharatiya Nyaya Sanhita or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract; or (3) the Code on Wages, 2019 or the Code on Social Security, 2020 or the Industrial Relations Code, 2020 or the Occupational Safety, Health and Working Conditions Code, 2020; or (b) he has been debarred on more than one occasion by one or more procuring entities, for— (1) failure to pay wages to employees engaged under the contracts; or

Existing Rule	Amended Rule
	<p>(2) failure to remit statutory contributions towards social security, as required under applicable laws, in respect of such employees engaged under the contracts, and, the procuring entity or entities has been required to make payment of such wages or contributions due to default by the bidder.</p> <p>Provided that debarment under this sub-section, insofar as it relates to debarment across all procuring entities, shall take effect upon a decision by the Department of Expenditure (DoE), based on such process as may be prescribed.</p>
<p>(ii) A bidder debarred under sub-section (i) or any successor of the bidder shall not be eligible to participate in a procurement process of any procuring entity for a period not exceeding three years commencing from the date of debarment. Department of Expenditure (DoE) will maintain such list which will also be displayed on the Central Public Procurement Portal.</p>	<p>(ii) A bidder debarred under sub-section (i) or any successor of the bidder shall not be eligible to participate in a procurement process of any procuring entity for a period not exceeding three years commencing from the date of such debarment. DoE shall maintain a list of such debarred bidders which shall also be displayed on GeM.</p>
<p>(iii) A procuring entity may debar a bidder or any of its successors, from participating in any procurement process undertaken by it, for a period not exceeding two years, if it determines that the bidder has breached the code of integrity. The Ministry/Department will maintain such list which will also be displayed on their website.</p>	<p>(iii) A procuring entity may debar a bidder or any of its successors, from participating in any procurement process undertaken by it, for a period not exceeding two years, if it determines that the bidder—</p> <p>(a) has breached the code of integrity; or (b) has, in respect of employees engaged under the contract—</p> <p>(1) failed to pay wages; or (2) failed to remit statutory contributions towards social security, as required under applicable laws, and the procuring entity has been required to make payment of such wages or</p>

Existing Rule	Amended Rule
	<p>contributions due to default by the bidder.</p> <p>The Ministry/ Department will maintain such list which will also be displayed on their website, and shall report all such cases of debarment to GeM. GeM shall maintain a consolidated database of such debarred firms.</p>
<p>(iv) The bidder shall not be debarred unless such bidder has been given a reasonable opportunity to represent against such debarment.</p>	<p>(iv) The bidder shall not be debarred unless such bidder has been given a reasonable opportunity to represent against such debarment.</p>

2. Further, the provisions of Rule 151 of GFR, 2017, contained in the following paragraphs of the procurement manuals, shall also stand amended in line with the above amendment:

- (i) Para 3.7.1 of Manual for Procurement of Goods, Second Edition, 2024.
- (ii) Para 3.8.1 of Manual for Procurement of Consultancy Services, Second Edition, 2025.
- (iii) Para 3.8.1 of Manual for Procurement of Non-Consultancy Services, 2025.
- (iv) Para 8.7.1 of Manual for Procurement of Works, Second Edition, 2025.


(Praveen Kujur) 18/5/26

Under Secretary to the Government of India
Tel: 23733771
Email: praveen.kujur@nic.in

To
Secretaries of all Central Government Ministries/ Departments

Guidelines on Banning of Business Dealings

1.0 Introduction

- 1.1 Employer deals with Agencies viz. parties/ contractors/ suppliers/ bidders, who are expected to adopt ethics of highest standards and a very high degree of integrity, commitments and sincerity towards the work undertaken. It is not in the interest of Employer to deal with Agencies who commit deception, fraud or other misconduct in the tendering process.
- 1.2 Since banning of business dealings involves civil consequences for an Agency concerned, it is incumbent that adequate opportunity of hearing is provided and the explanation, if tendered, is considered before passing any order in this regard keeping in view the facts and circumstances of the case.

2.0 Scope

- 2.1 The Information for Bidders/ Instruction to Bidders and even the General Conditions of Contract (GCC) of Employer generally provide that Employer shall have the rights to remove from list of approved suppliers / contractors or to ban business dealings if any Agency has been found to have committed misconduct or fraud or anything unethical not expected from a reputed contractor.
- 2.2 The procedure of (i) Removal of Agency from the List of approved suppliers / contractors; (ii) Suspension and (iii) Banning of Business Dealing with Agencies, has been laid down in these guidelines.
- 2.3 These guidelines shall apply to all the Projects/ Power Stations/ Regional Offices/ Liaison Offices of SJVN including its subsidiaries and JVs.
- 2.4 It is clarified that these guidelines do not deal with the poor performance of the contractors/ Agencies.
- 2.5 The banning shall be with prospective effect, i.e. future business dealings.

3.0 Definitions

In these Guidelines, unless the context otherwise requires:

- i) **“Party / Contractor / Supplier / Bidders”** shall mean and include a public limited company or a private limited company, a joint Venture, Consortium, HUF, a firm whether registered or not, an individual, cooperative society or an association or a group of persons engaged in any commerce, trade, industry, etc. “Party / Contractor/ Supplier / Bidder’ in the context of these guidelines is indicated as ‘Agency’.

- ii) **“Unit”** shall mean the Project/ Power Station/ Regional Office/ Liaison Office.
- iii) **“Competent Authority”** and **‘Appellate Authority’** shall mean the following:

The concerned Director shall be the ‘Competent Authority’ for the purpose of these guidelines.

CMD shall be the ‘Appellate Authority’ in respect of such cases.
- iv) **“Investigating Committee”** shall mean any Officer/Committee appointed by Competent Authority to conduct investigation.
- v) **“List of approved Agencies viz Parties / Contractors / Suppliers/Bidders”** shall mean and include list of Parties/ Contractors / Suppliers / Bidders etc if registered with Employer.

4.0 Initiation of Banning / Suspension

Action for banning /suspension business dealings with any Agency shall be initiated by the department responsible for invitation of bids after noticing the irregularities or misconduct on the part of Agency concerned. Besides the concerned department, Vigilance Department of each Unit/ Corporate Vigilance may also be competent to initiate such action.

5.0 Suspension of Business Dealings.

- 5.1 If the conduct of any Agency dealing with Employer is under investigation, the Competent Authority may consider whether the allegations (under investigation) are of a serious nature and whether pending investigation, it would be advisable to continue business dealing with the Agency. If the Competent Authority, after consideration of the matter including the recommendation of the Investigating Committee, if any, decides that it would not be in the interest to continue business dealings pending investigation, it may suspend business dealings with the Agency. The order of suspension would operate for a period not more than six months and may be communicated to the Agency as also to the Investigating Committee. The Investigating Committee may ensure that their investigation is completed and whole process of final order is over within such period. However, if investigations are not completed in six months time, the Competent Authority may extend the period of suspension by another three months, during which period the investigations must be completed.
- 5.2 The order of suspension shall be communicated to all Departmental Heads of SJVN (including its subsidiaries and JVs) and Heads of the Units. During the period of suspension, no business dealing may be held with the Agency.

- 5.3 As far as possible, the existing contract(s) with the Agency may continue unless the Competent Authority, having regard to the circumstances of the case, decides otherwise.
- 5.4 If the Agency concerned asks for detailed reasons of suspension, the Agency may be informed that its conduct is under investigation. It is not necessary to enter into correspondence or argument with the Agency at this stage.
- 5.5 It is not necessary to give any show-cause notice or personal hearing to the Agency before issuing the order of suspension.

6.0 Ground on which Banning of Business Dealings can be initiated:

- 6.1 If the security consideration, including questions of loyalty of the Agency to Employer so warrants;
- 6.2 If the director /owner of the Agency, proprietor or partner of the firm, is convicted by a Court of Law for offences involving moral turpitude in relation to its business dealings with the Government or any other public sector enterprises, during the last three years.
- 6.3 If business dealings with the Agency have been banned by the Department of Power, Government of India and the relevant government department of Employer's Country.
- 6.4 If the Agency has resorted to corrupt, fraudulent practices including misrepresentation of facts;
- 6.5 If the Agency uses intimidation / threatening or brings undue outside pressure on Employer or its official for acceptance / performances of the job under the contract;
- 6.6 If the Agency misuses the premises or facilities of Employer, forcefully occupies or damages Employer's properties including land, water resources, forests / trees or tampers with documents/records etc. (Note: The examples given above are only illustrative and not exhaustive. The Competent Authority may decide to ban business dealing for any good and sufficient reason).

7.0 Banning of Business Dealings

- 7.1 A decision to ban business dealings with any Agency shall apply throughout SJVN including its subsidiaries/JVs.
- 7.2 There will be an Investigating Committee consisting of officers not below the rank of AGM/DGM from Indenting Division, Finance, Law and Contracts. Member from

department responsible for invitation of bids shall be the convener of the committee. The functions of the committee shall, inter-alia include:

- i) To study the report of the unit/division responsible for invitation of bids and decide if a prima-facie case for banning exists, if not, send back the case to the Competent Authority.
- ii) To recommend for issue of show-cause notice to the Agency by the concerned unit/division as per clause 9.1.
- iii) To examine the reply to show-cause notice and call the Agency for personal hearing, if required.
- iv) To submit final recommendations to the Competent Authority for banning or otherwise.

8.0 Removal from List of Approved Agencies - Suppliers/ Contractors, etc.

- 8.1 If the Competent Authority decides that the charge against the Agency is of a minor nature, it may issue a show-cause notice as to why the name of the Agency should not be removed from the list of approved Agencies - Suppliers / Contractors, etc.
- 8.2 The effect of such an order would be that the Agency would not be qualified for competing in Open Tender Enquiries or Limited Tender Enquiries till the period mentioned in the order.
- 8.3 Past performance of the Agency may be taken into account while processing approval of the Competent Authority for award of the contract.

9.0 Show-cause Notice

- 9.1 In case where the Competent Authority decides that action against an Agency is called for, a show-cause notice has to be issued to the Agency, Statement containing the imputation of misconduct or misbehavior may be appended to the show-cause notice and the Agency should be asked to submit within 15 days a written statement in its defense.
- 9.2 If the Agency requests for inspection of any relevant document in possession of Employer, necessary facility for inspection of documents may be provided.
- 9.3 The Competent Authority may consider and pass an appropriate speaking order:
 - a) For exonerating the Agency if the charges are not established;
 - b) For removing the Agency from the list of approved Suppliers / Contractors, etc.

c) For banning the business dealing with the Agency.

9.4 If it decides to ban business dealings, the period for which the ban would be operative may be mentioned.

10.0 Appeal against the Decision of the Competent Authority

10.1 The Agency may file an appeal against the order of the Competent Authority banning business dealing etc. The appeal shall be filed to Appellate Authority. Such an appeal shall be preferred within one month from the date of receipt of the order banning business dealing, etc.

10.2 Appellate Authority would consider the appeal and pass appropriate order which shall be communicated to the Agency as well as the Competent Authority.

11.0 Circulation of the names of Agencies with whom Business Dealings have been banned

i) The concerned unit shall forward the name and details of the Agency(ies) banned to IT&SE Division of SJVN's Corporate Office for displaying the same on SJVN website.

ii) Corporate Contracts Department shall also forward the name and details of the Agency(ies) banned to the Ministry of Power, GoI besides forwarding the name and details to the contracts/procurement group of all CPSUs of power sector.
