

Request for Proposal (RFP)

RFP/IIP/RPBD-01/2026, Dated: 31-08-2026

Request for Proposal (RFP)

Letter of Invitation:

CSIR Indian Institute of Petroleum

Dehradun – 248005

No.: RFP/IIP/RPBD-01/2026 Dated: 31-8-26

Dear Sir/Madam,

CSIR-IIP invites bid (technical + commercial) from reputed engineering firm/consultant (*Indian engineering consultant, defined as an entity incorporated/registered in India, including Indian subsidiaries, or branch/project offices of international engineering companies operating in India, and undertaking engineering assignments for domestic projects.*) for the preparation of a comprehensive Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) of a ~32 tph Toluene Extraction Unit (TEU) based on CSIR IIP provided Technology Information Package (TIP). The RFP document containing the details of qualification criteria, submission requirement, brief objective & scope of work, and method of evaluation etc. is enclosed.

RFP document is also available on the Institute's website, www.iip.res.in.

You shall submit your response on CPPP portal through www.etenders.gov.in . Bids received through any mode other than www.etenders.gov.in will be rejected summarily.

Query if any may be communicated in writing to Head-BD, CSIR – IIP, 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	Publishing Date	As per CPP Portal	
2	Document download start date		
3	Document download end date		
4	Bid submission start date		
5	Bid submission end date		

Yours faithfully

Head-BD

CSIR IIP, Dehradun

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Section I: Tender Information Summary

Sl. No.	Item	Details
1	Name of Work	Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Associated Engineering Services for Toluene Extraction Process
2	Tendering Authority	CSIR–Indian Institute of Petroleum
3	Type of Tender	OTE followed by RFP to shortlisted parties
4	Mode of Tender	Two Bid System (Technical Bid + Financial Bid)
5	Nature of Contract	Consultancy / Engineering Services Contract
6	Project Objective	Development of a comprehensive Basic Design Engineering Package and associated manuals for commercialization of indigenous Toluene Extraction Technology
7	Technology Basis	Extractive Distillation based Toluene Recovery Process from PyGas-derived C7–C8 stream
8	Major Deliverables	Design Basis, HMB, PFDs, Equipment Datasheets, Utility Summary, P&IDs, Logic Diagrams, Plot Plan, Equipment List, SOM, Analytical Manual and complete BDEP
9	Scope of Work	As detailed in Terms of Reference (TOR) and Annexures
10	Estimated Project Duration	12 Weeks from Zero Date
11	Zero Date Definition	10 days from Issue of Letter of Award (LOA) or Kick-off and Design Basis Finalization Meeting (KOM/DBFM), whichever is earlier
13	Bid Validity Period	90 days
14	Earnest Money Deposit (EMD)	In lieu of submission of EMD, bidder shall submit a duly signed Bid Securing Declaration (BSD) in the format prescribed in the Tender Document.
15	Performance Security	5 % of Contract Value and as per tender conditions
16	Liquidated Damages (LD)	As detailed in Tender Document
17	Completion Schedule	Milestone-based
18	Payment Terms	Deliverable-based, linked to final submission and acceptance of the respective deliverables.
19	Pre-Qualification Criteria	As per tender document
20	Minimum Experience Requirement	Experience in preparation of BDEP/PEP/FEED Package for refinery/petrochemical/chemical separation technologies with specified throughput criteria
21	Turnover Requirement	Minimum Avg. turnover of ₹ 3 Crore/year in last 3 financial years, starting FY 2022-23
22	Technical Evaluation Method	As detailed in Tender Document
23	Minimum Technical Qualification	Minimum qualifying marks as specified in Tender Document
24	Submission Format	Technical and Commercial bids in prescribed formats
25	Deliverable Format	Hard copies and editable soft copies (AutoCAD, Excel, Word, PDF etc.)
26	Language	English
28	Unit System	Metric System

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29	Pre-Bid Meeting	9th September 2026 (Online Mode) <i>(Interested parties shall intimate CSIR IIP of their participation along with all their queries by 5th September 2026)</i> Changes in date if any shall be communicated beforehand.
30	Intellectual Property	Deliverables shall be treated as confidential and ownership shall remain with Procuring Entity as per contract terms
31	Detailed Engineering / EPC Support	Technical support during Detailed Engineering / EPC stage for clarification of queries pertaining to developed BDEP/SOM
32	Site Visits	As required during and project execution
33	Contact Person	Dr Atul Ranjan, Head – Business Development, CSIR Indian Institute of Petroleum atul.ranjan@csir.res.in Phn: +91-135-2525725
34	Tender Inviting Authority Address	Head-BD, CSIR Indian Institute of Petroleum, Mohkampur, Haridwar Road, Dehradun – 248005, Uttarakhand
35	Bid submission start date/time	31st August 2026 (6:00 PM)
36	Bid submission end date/time	15th September 2026 (3:00 PM)

Key Milestone Schedule

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 / Review and Closure	6-8
M6	Supervisory Operating Manual (SOM), Analytical Manual (AM) and Final Package Submission	8–12

Section II: Instructions to Consultants

The following instructions are intended to guide Consultants in preparation and submission of their proposals and execution approach. These provisions are supplementary in nature and shall be read in conjunction with the Scope of Work and Deliverables. Matters already covered under the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC) shall not be repeated herein.

1. Understanding of Assignment

The Consultant shall thoroughly review the scope, objectives, deliverables, timelines, and technical requirements before submission of the proposal. Submission of the proposal shall imply that the Consultant has fully understood the requirements and associated responsibilities.

2. Site Familiarization and Information Review

The Consultant shall independently assess and familiarize itself with all available information relevant to the assignment. Any assumptions made by the Consultant during execution shall be clearly identified and documented.

3. Methodology and Execution Plan

- ❖ The Consultant shall submit a detailed methodology describing the approach for execution of the assignment, including key activities, milestones, deployment strategy, review mechanisms, and quality assurance procedures.
- ❖ Work in close coordination with CSIR IIP for interpretation and translation of process know-how into engineering deliverables
- ❖ Adhere to stringent timelines, with overall completion targeted within a compressed schedule

4. Team Composition and Resource Deployment

The Consultant shall deploy competent and suitably qualified personnel possessing relevant experience for execution of the assignment. Replacement of key personnel during the assignment shall be avoided and may be carried out only with personnel having equivalent or superior qualifications and experience.

5. Coordination and Review Meetings

The Consultant shall participate in review meetings, technical discussions, presentations, and progress meetings as required by the Procuring Entity. Minutes of meetings and action points, where applicable, shall be suitably addressed by the Consultant.

6. Documentation and Submission Standards

All documents, drawings, calculations, reports, and deliverables shall be prepared in a structured and professional manner using accepted engineering practices and standards. Deliverables shall be submitted in editable electronic formats in addition to finalized versions wherever applicable.

7. Quality Assurance

The Consultant shall establish internal quality checks and verification procedures to ensure completeness, consistency, and accuracy of submitted deliverables prior to submission.

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8. Compliance with Applicable Standards

The Consultant shall ensure that all work performed under the assignment complies with applicable codes, standards, statutory requirements, and prevailing engineering practices relevant to the project.

9. Clarifications during Execution

Any technical ambiguity or requirement for clarification identified during execution shall be promptly brought to the notice of the Procuring Entity. The Consultant shall not proceed on assumptions affecting the assignment without appropriate confirmation.

10. Confidential Handling of Project Information

The Consultant shall use project-related information solely for execution of the assignment and shall ensure that such information is handled appropriately and only for authorized purposes.

11. Responsibility for Completeness

The Consultant shall be responsible for ensuring that the submitted deliverables are complete and adequate for achieving the intended objectives of the assignment, even if specific items are not expressly stated but are considered necessary as per sound engineering practice.

12. Ownership of Deliverables

All reports, documents, calculations, drawings, and outputs generated under the assignment shall form part of the project deliverables and shall be handed over in an organized manner upon completion of the assignment.

1. Background of the Assignment

CSIR-IIP possesses process know-how for an extractive distillation-based technology for recovery of high-purity toluene from hydrogenated PyGas streams. The proposed assignment envisages engagement of an experienced Engineering Consultant for development of a Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) based on the Technology Information Package (TIP) developed by CSIR-IIP.

Detailed project background is provided in the Terms of Reference (ToR).

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.

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.

Note 1A:

CSIR-IIP initially floated an official Request for Expression of Interest (REOI) through the Open Tender Enquiry route on 3rd August 2026 to identify suitable and prospective Engineering Consultants for the assignment. The responses received were evaluated against the prescribed Eligibility and Qualification Criteria, and eligible Applicants were shortlisted.

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Accordingly, the present Request for Proposal (RFP) is being issued only to those Applicants that formally responded to the REoI and were shortlisted upon meeting the prescribed Eligibility and Qualification Criteria, for submission of their respective Technical and Financial Bids.

Note 1B:

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 participating bidder should have demonstrated prior experience and multidisciplinary engineering capability in handling similar refinery/petrochemical projects.

Accordingly, the prescribed prior work experience criteria (under minimum eligibility criteria for bidding) are kept mandatory for all bidders, including MSMEs/startups, for the said tender.

2. Scope of Work and Deliverables

The broad scope of the Engineering Consultant shall include, but not be limited to:

- Review and understanding of the Technology Information Package (TIP)
- Participation in Design Basis Finalization
- Preparation of complete BDEP
- Preparation of Supervisory Operating Manual (SOM)
- Preparation of Analytical Manual (AM)
- Development of Process Flow Diagrams (PFDs)
- Development of Piping & Instrumentation Diagrams (P&IDs)
- Preparation of Equipment Datasheets
- Utility calculations
- Plot Plan and Layout Development
- Interdisciplinary engineering coordination
- Incorporation of comments from CSIR-IIP and Client
- Technical support during review and approval stages
- Post-submission technical support till final approval

Detailed scope and deliverables are specified in ToR:

- Annexure-1: Contents of BDEP
- Annexure-2: Contents of SOM

General conditions for preparation of BDEP, SOM and AM

1. Basic Design Engineering Package (BDEP)

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The Engineering Consultant (EC) shall prepare and submit a comprehensive Basic Design Engineering Package (BDEP) based on the process design and engineering inputs provided by the Procuring Entity. The BDEP shall contain all necessary and sufficient information required to enable a competent Detailed Engineering Contractor (DEC) / EPC Contractor to undertake detailed engineering, procurement, construction, commissioning, and operation of the Unit.

The BDEP shall be prepared in the English language using the metric system of measurements and shall include, but not be limited to, the items specified in Annexure-1 of the Tender Document.

The Engineering Consultant shall submit process/equipment/instrument datasheets for review and comments by the Procuring Entity prior to final incorporation into the BDEP.

The scope and contents of the BDEP as specified in Annexure-1 of ToR shall form an integral part of the Contract Agreement, and no deviation from the specified contents shall be permitted unless expressly approved in writing by the Procuring Entity.

2. Supervisory Operating Manual (SOM)

The Engineering Consultant shall prepare and submit an updated Supervisory Operating Manual (SOM) containing recommended operating temperatures and pressures, normal start-up and shutdown procedures, emergency handling procedures, process safety information, special operating precautions, and descriptions of standard operating practices necessary for safe, reliable, and efficient operation of the Unit.

The SOM shall include, but not be limited to, the items specified in Annexure-2 of the Tender Document.

The SOM shall be developed in sufficient detail and quality to enable subsequent preparation of a detailed Operating Instruction Manual by the Detailed Engineering Contractor (DEC) / EPC Contractor during the project implementation stage.

3. Analytical Manual (AM)

The Engineering Consultant shall compile, organize, and document the analytical and laboratory-related information provided by the Procuring Entity (CSIR-IIP) and prepare an Analytical Manual (AM) in a conventional industrial format suitable for inclusion in the engineering documentation of the Unit. The Engineering Consultant's scope shall primarily comprise systematic compilation and presentation of the information provided by CSIR-IIP under; inter alia, the following categories:

- Identification and description of samples to be collected and analyzed;
- Sample phase identification;
- Recommended sampling frequency;
- Process variables/parameters to be analyzed;
- Recommended analytical methods and testing procedures; and
- Any other relevant analytical or laboratory-related information provided by CSIR-IIP.

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The Engineering Consultant with aid from CSIR IIP shall **identify and incorporate the corresponding sampling locations in the Piping & Instrumentation Diagrams (P&IDs), including assignment/identification of appropriate sample identification numbers**, in accordance with standard industrial engineering practices.

The Analytical Manual shall consolidate the above information in a structured manner to provide a reference for implementation of laboratory and process quality-control activities during plant operation.

CSIR-IIP shall provide the necessary process-specific analytical requirements, recommended analytical methods/procedures, sampling requirements and other relevant technical inputs. The Engineering Consultant shall not be responsible for developing or independently establishing analytical methods or laboratory procedures beyond the information/technical inputs provided by CSIR-IIP, unless specifically agreed otherwise.

4. Format of Deliverables

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 CD/ USB drives are to be supplied to procuring party.

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).

2. Data Sheets & Lists

EC shall provide the following in fully editable formats:

- ❖ Line List → MS Excel (with tagging & line numbering philosophy)
- ❖ Instrument Data Sheets → MS Excel (bulk editable)
- ❖ Equipment Data Sheets → Excel/Word (as applicable)
- ❖ Data shall be consistent with P&IDs and HMB (cross-verified).
- ❖ All 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 Consultant. The revised final documents shall be submitted to CSIR IIP within one (1) week of receipt of CSIR IIP's comments/observations.

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3. Milestones and Schedule of Supply of BDEP and SOM

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), Analytical Manual (AM) and Final Package Submission	8-12

SCHEDULE OF SUPPLY OF BDEP and SOM

S.No.	Item	Schedule (Weeks from issue of FOA/ KOM or Design Basis Finalization)
1.	Kick-off meeting / Design Basis Finalization Meeting	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 (SOM) & Analytical Manual (AM)	12

4. Eligibility Criteria

Interested Engineering Consultants, Engineering Companies, Engineering Firms, Incorporated Joint Ventures (JVs), or Consortiums (hereinafter collectively referred to as the "Bidder") submitting a bid against this RFP shall satisfy all of the following minimum eligibility requirements.

For the purposes of this RFP:

- **A Single Legal Entity** means an individual company, corporation, or organization incorporated or registered under the applicable laws.
- **An Incorporated Joint Venture (JV)** means a separate legal entity incorporated by two or more members for undertaking the proposed assignment.

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- **A Consortium** means an association of two or more legally independent entities formed for the purpose of participating in this RRFP through a duly executed Consortium Agreement, with one member designated as the Lead Member.

1. Legal Status

The Bidder shall be an Indian engineering consultancy firm, company, or organization, incorporated or registered in India. This shall include Indian subsidiaries, branch offices, or project offices of international engineering companies legally established in India and undertaking engineering consultancy assignments for domestic projects.

The Bidder shall possess a valid registration to operate in India and shall be responsible for compliance with all applicable statutory, contractual, and regulatory requirements in India.

2. Quality Management System

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

3. Average Annual Turnover

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

4. Blacklisting

The Bidder 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 RFP. **(For details refer Annexure 3 of ToR)**

Applicability to Joint Ventures (JVs)/ Consortium(s)

In the case of a Joint Venture (JV)/Consortium, unless expressly provided otherwise in this RFP, each constituent member shall individually satisfy all eligibility requirements stipulated in this Section, including but not limited to legal status, statutory registrations, quality management system certification, financial eligibility, and blacklisting/debarment status. Each member shall possess all applicable registrations, approvals, and certifications required to lawfully undertake engineering consultancy assignments in India. Failure of any constituent member to comply with any of the prescribed eligibility requirements shall render the Joint Venture/Consortium ineligible.

Submission of Supporting Documents

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

- Certificate of Incorporation/Registration, Legally enforced JV Agreement (In case of JVs);
- 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.

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Only Bidders 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 Bidder shall submit valid documentary evidence of its status as an MSE and/or DPIIT-recognized Start-up along with the RFP.
- 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 Bidder 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 Bidders, including MSEs/start-ups.

Rules for JVs

1. Only Joint Ventures (JVs) or Consortiums comprising a maximum of two (2) constituent members shall be permitted.
2. JVs/Consortiums shall submit a legally enforceable JV/Consortium Agreement explicitly specifying the Lead Member, percentage participation of each member, scope of work of each member, liability of the members, and the authorized representative.
3. Only one member shall be designated as the Lead Member, who shall be authorized through a legally valid Power of Attorney to represent and bind all members during the procurement process and, if awarded, throughout execution of the contract.
4. The Lead Member of the Joint Venture (JV)/Consortium shall hold not less than 50% equity/participation in the JV/Consortium and shall independently satisfy at least 50% of the prescribed financial eligibility criteria. Further, the Lead Member shall have independently executed, in its own name and not as a member of any consortium, joint venture, partnership, or other collaborative arrangement, at least one consultancy assignment comprising Basic Design Engineering Package (BDEP)/ Front End Engineering Design (FEED)/ Detailed Engineering/ Engineering, Procurement and Construction (EPC)/ Engineering Services **for a similar technology** having a capacity of not less than 10 TPH in a Hydrocarbon Refinery or Petrochemical Complex since 1st January 2015.

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5. The experience of all partners may be combined for satisfying the prescribed technical eligibility criteria, provided that all information is submitted strictly in the prescribed Formats 3A and 3B.
6. The combined average annual turnover of all partners shall satisfy the prescribed turnover requirement, subject to the Lead Member possessing not less than 50% thereof. In case of a JV/Consortium, each constituent member shall submit Format 5, duly certified by a Chartered Accountant (CA), along with the company's audited financial statements.
7. The Joint Venture (JV)/Consortium shall submit consolidated manpower availability details in accordance with Format 4A, covering the manpower proposed from all constituent members. The information furnished in Format 4A shall be duly certified by a Chartered Accountant (CA) in the prescribed Format 4B.
8. No member of a JV/Consortium shall participate in this RRFP either individually or as a member of another JV/Consortium. Any such participation shall result in rejection of all associated applications.
9. No change in the constitution of the JV/Consortium or its constituent members shall be permitted after submission of the RFP.
10. All communications, payments, and contract administration shall be undertaken exclusively through the Lead Member.
11. Upon award of the contract, every JV/Consortium partner shall execute the contract. All constituent members shall be jointly and severally liable for due performance of the contract.
12. In the case of an Incorporated Joint Venture (JV), the Permanent Account Number (PAN) Card and Goods and Services Tax (GST) Registration Certificate shall be submitted in the name of the incorporated JV entity. In the case of a Consortium, the PAN Card and GST Registration Certificate shall be submitted separately by each constituent member.
13. In the case of a Joint Venture (JV) or Consortium, the Certificate of Incorporation of each constituent member shall be submitted. Where the JV is an Incorporated Joint Venture, the Certificate of Incorporation of the incorporated JV entity shall also be submitted.
14. In the case of an Incorporated Joint Venture (JV), Format 7 (Declaration regarding Blacklisting), Format 8 (Declaration regarding Execution of Work at Indian Offices), and Format 9 (Integrity Pact) shall be submitted in the name of the Incorporated JV and signed by its duly authorized signatory. In the case of a Consortium, the aforesaid formats shall be separately executed, signed, and submitted by the duly authorized signatory of each constituent member of the Consortium.

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

For Indian Offices/Subsidiaries of Foreign Engineering Companies participating in the RFP stage:

- ❖ The Bidder shall submit a declaration confirming that the complete scope of work related to preparation of the Basic Design Engineering Package (BDEP) and Supervisory Operating

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Manual (SOM) for this project shall be executed entirely 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. **Format – 8.**

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

For Indian Engineering Companies participating in the RFP stage:

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

6. Bid Submission System

The bids shall be uploaded in two separate sections:

Section-I: Technical Bid

The Technical Bid shall contain:

- Covering Letter (Tender Acceptance Letter): **Format 1**
- Organizational Details & Bidder Profile: **Format 2**
- Technical Credentials
- Relevant work experience details(**Format 3A and 3B** along with supporting documents)
- Team Composition (**Format 4A and 4B**)
- Financial strength of company (**Format 5**)
- Compliance sheet (**Format 6**)
- Technical Proposal
- Declarations and Undertakings (**Format 7, 8, 9, 10, 11**)

All Formats should be duly filled, signed and stamped

Section-II: Financial Bid

The Financial Bid (**Format 12**) shall contain:

- Lump-sum price for BDEP and SOM (A1)
- Per diem rates for Onsite Technical Assistance / Other Services (A2)
- Applicable taxes and duties
- Financial Bid shall be submitted in the prescribed format provided in Format - 12. **The Per-diem rates for Onsite Technical Assistance / Other Services (A2) are just to be quoted for providing the required onsite services to CSIR-IIP during FEED/Detailed Engineering/EPC stage. No price quoted under Category A2 will be considered for evaluating the L-1 Bidder.**

7. Payment Terms

- ❖ All payment terms shall be milestone-based and linked with acceptance of deliverables by CSIR-IIP. There shall be no provision of advance payment.
- ❖ Detailed payment schedule is specified in ***Section VIII under Schedule of Payment.***

8. Liquidated Damages (LD)

In case of delay attributable to the Engineering Consultant, ***LD shall be levied as per terms in Special Conditions of Contract (SCC)***

9. 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 favour 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 fulfilment 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;
 - 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) Fulfilment 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.

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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 fulfilment 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.

10. Technical Support during Detailed Engineering and EPC

The selected Engineering Consultant shall review, respond to, and resolve all technical queries, clarifications, and engineering-related issues raised by the Client, Detailed Engineering Contractor, PMC, EPC/LSTK Contractor, or any other agency authorized by the Client during the Detailed Engineering and EPC phases of the Project, to the extent such queries relate to the Basic Design Engineering Package (BDEP), Statement of Manual (SOM), and other deliverables prepared by the Engineering Consultant.

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.

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The EC shall provide such support from the Effective Date of Contract until successful completion of Detailed Engineering and EPC stage 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.

11. Right to Accept or Reject

Director, CSIR–Indian Institute of Petroleum (CSIR-IIP) reserves the right to cancel, withdraw, or annul the tender/bidding process at any stage, without prior notice and without assigning any reason whatsoever. No claim, compensation, or cost of any nature shall be payable by CSIR-IIP on account of such cancellation or annulment.

Section III: General Conditions of Contract (GCC)

1. Definitions

For the purpose of this Contract:

- i. "Employer/Procuring Entity" means CSIR–Indian Institute of Petroleum (CSIR-IIP), Dehradun.
- ii. "Engineering Consultant (EC)" means the selected consultant/engineering company engaged for execution of the assignment.
- iii. "Services" shall mean all engineering, consultancy, technical support, and related services required under the Contract.
- iv. "BDEP" means Basic Design Engineering Package.
- v. "SOM" means Supervisory Operating Manual.
- vi. "TIP" means Technology Information Package provided by CSIR-IIP.
- vii. "Client" means the end-user organization for whom the technology package is being developed.

2. Scope of Services

The Engineering Consultant shall perform all services specified under the Scope of Work, including preparation of BDEP, SOM and associated engineering support activities in accordance with the requirements of the ToR and instructions issued by CSIR-IIP.

The scope and contents of the BDEP as specified in Annexure-1 of ToR shall form an integral part of the Contract Agreement, and no deviation from the specified contents shall be permitted unless expressly approved in writing by the Procuring Entity.

3. Contract Documents

The following documents shall constitute the Contract and shall be read together:

- i. Letter of Award/Work Order
- ii. Agreement executed between the parties
- iii. Terms of Reference (ToR) including Annexures
- iv. Technical and Financial Proposal of EC
- v. All Formats and Declarations
- vi. Clarifications/addenda issued by CSIR-IIP post Pre-Bid and Kick Off Meeting if any

In case of conflict, the order of precedence above shall apply.

4. Standards of Performance

The EC shall perform services with due diligence, efficiency and professional competence in accordance with generally accepted engineering practices applicable to refinery, petrochemical and hydrocarbon projects.

5. Applicable Laws and Jurisdiction

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The Contract shall be governed and interpreted in accordance with the laws of India. Courts located at New Delhi; shall have exclusive jurisdiction.

6. Confidentiality and Non-Disclosure

The EC shall maintain strict confidentiality of all technical, commercial and proprietary information furnished by CSIR-IIP and/or the Client.

The EC shall:

- i. Use such information solely for execution of the assignment.
- ii. Not disclose information to any third party without prior written approval of CSIR-IIP.
- iii. Ensure similar obligations are imposed on employees, consultants and subcontracted personnel.

The confidentiality obligations shall survive completion or termination of the Contract.

7. Intellectual Property Rights

All engineering deliverables including calculations, drawings, datasheets, reports, manuals, studies and associated documents prepared under the Contract shall become the property of CSIR-IIP. The EC shall not use, reproduce or transfer such information without written approval from CSIR-IIP.

The Consultant shall ensure that the BDEP does not infringe any third-party intellectual property rights and shall obtain, at its cost, all necessary permissions/licences for any third-party IP incorporated in the BDEP.

8. Ownership of Documents

All engineering deliverables developed under the assignment including but not limited to:

- PFDs
- P&IDs
- Datasheets
- Calculations
- SOM
- Drawings
- Other engineering documents

shall become property of CSIR-IIP upon completion of the assignment.

9. Assignment and Subcontracting

The EC shall not assign, transfer or subcontract the whole or any substantial portion of the assignment without prior written approval of CSIR-IIP.

10. Personnel

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- The EC shall deploy competent personnel proposed in its technical bid.
- Replacement of key personnel shall require prior written approval of CSIR-IIP and shall be permitted only under exceptional circumstances.
- Replacement personnel shall possess qualifications and experience equivalent to or better than the originally proposed personnel.
- Replacement of key personnel shall not relieve the EC of its obligations under this Contract.

11. Progress Monitoring and Reporting

The EC shall submit progress reports and deliverables as per agreed schedule and participate in review meetings as required by CSIR-IIP.

12. Taxes and Duties

The quoted price shall include all applicable duties, levies and taxes except GST, which shall be paid separately as applicable.

13. Force Majeure

Neither party shall be held responsible for non-fulfilment of their respective obligations under this contract due to the exigency of one or more of the force majeure events such as but not limited to Acts of God, war, flood, earthquakes, strikes, lockouts, epidemics, riots, civil commotion, etc., provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in writing to the other party within seven days of such occurrence or cessation. If the force majeure condition continues beyond one month, the parties shall then mutually decide about the future course of action.

The affected party shall notify the other party within seven (7) days of occurrence.

14. Suspension and Termination

CSIR-IIP may suspend or terminate the Contract under the following circumstances:

- i. Persistent failure to meet obligations
- ii. Unjustified delay in deliverables
- iii. Breach of confidentiality obligations
- iv. Insolvency or liquidation of EC
- v. Material contractual default

15. Integrity Pact and appointment of Independent External Members (IEMs)

CSIR Indian Institute of Petroleum is committed to conducting this procurement process in a fair, transparent, competitive, and ethical manner. Accordingly, the provisions of the Integrity Pact have

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been incorporated from the REoI stage to establish the principles of integrity, transparency, accountability, and ethical conduct from the commencement of the procurement process. All Applicants shall be deemed to have acknowledged and accepted these principles by participating in the present REoI and shall comply with the applicable provisions of the Integrity Pact throughout the procurement process.

To facilitate effective implementation of the Integrity Pact, **Independent External Monitor(s) (IEMs)** shall be associated with the procurement process as independent observers. The IEM(s) may observe the proceedings of the Tender Evaluation Committee/Consultancy Evaluation Committee, review compliance with the provisions of the Integrity Pact, and provide independent oversight to help ensure that the procurement process is conducted in a fair, transparent, and ethical manner. The IEM(s) shall function in an independent and impartial capacity and shall neither participate in nor influence the technical, commercial, or financial evaluation of applications/bids, nor the decision-making authority of the Procuring Entity.

Details of IEMs:

1. **Mr. Jagadip Narayan,**
IAS (Retd).
Email: jagdipsingh@yahoo.com
2. **Mr. Arun Kumar Gupta,**
Ex-CMD, SCI (Shipping Corporation of India)
Email: guptaarun55@rediffmail.com

In accordance with the above, every Applicant shall mandatorily submit the Integrity Pact (Format-9) in the prescribed format, duly signed by the authorized signatory on each and every page, without any alteration, modification, deletion, addition, qualification, or inclusion of any text whatsoever. Any deviation from the prescribed format or failure to sign all pages of the Integrity Pact shall render the submission non-responsive and will be summarily rejected.

16. Dispute Resolution

Any disputes or differences arising out of the Contract shall be settled amicably between the PARTIES. In the event of any failure to resolve the disputes or differences amicably within 60 days from the date of notification in writing of the existence of the dispute/difference, such unresolved dispute/ difference shall be settled through Arbitration and shall be referred to the Delhi International Arbitration Centre (DIAC), Delhi High Court, New Delhi. The seat of Arbitration will be New Delhi. The Arbitration shall be conducted by a Sole Arbitrator.

Section IV: Special Conditions of Contract (SCC)

1. Zero Date and Commencement

The Zero Date shall be the earlier of:

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

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

2. Time Schedule

The EP shall complete the assignment within twelve (12) weeks from Zero Date in accordance with the milestone schedule specified in the ToR.

3. Deliverables

The scope shall include, but not be limited to:

- a) Heat and Material Balance
- b) Process Flow Diagrams (PFDs)
- c) Equipment sizing and datasheets
- d) Piping & Instrumentation Diagrams (P&IDs)
- e) Plot plans and logic diagrams
- f) Complete BDEP
- g) Supervisory Operating Manual (SOM)
- h) Analytical Manual (AM) based on CSIR IIP's inputs

Detailed scope of work and deliverables pertaining to BDEP and SOM are presented in Annexure 1 and 2 of ToR respectively.

4. Review and Comment Incorporation

The EC shall incorporate all comments received from CSIR-IIP and/or Client within agreed timelines without any additional financial implication.

5. Responsibility for Completeness

The EC shall remain fully responsible for:

- a) Technical completeness of BDEP and SOM
- b) Accuracy and consistency of design calculations and estimates
- c) Interdisciplinary coordination
- d) Compatibility among engineering deliverables

Approval by CSIR-IIP shall not relieve EC of its obligations.

6. Meetings and Technical Support

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The Engineering Consultant (EC) shall attend and participate, without any additional cost to CSIR-IIP, in all meetings and activities required for successful execution of the assignment (development of BDEP, SOM and AM), including but not limited to:

- a) Design Basis Meetings
- b) PFD/P&ID and engineering review meetings
- c) Technical presentations
- d) Discussions/interactions with the Client through CSIR-IIP
- e) Technical clarification and coordination meetings
- f) Any other project-related meetings reasonably required for completion of the assignment

All expenses associated with participation of EC personnel in the above activities, including but not limited to travel, local conveyance, boarding, lodging, food, daily allowances (TA/DA), manpower deployment and any incidental expenses, shall be solely borne by the EC. CSIR-IIP shall not provide any reimbursement or additional payment towards such expenses under any circumstances.

The EC shall be deemed to have considered and included all such costs in its quoted price for preparation and delivery of the BDEP and SOM. No claim for additional compensation on this account shall be entertained at any stage of the Contract.

7. Post-Submission Support

The EC shall agree to provide technical assistance and clarification support until final acceptance of BDEP and SOM by the Client.

The EC shall agree to provide timely support for resolution of all technical queries, comments, and clarifications arising out of the prepared BDEP/SOM during the FEED/ Detailed Engineering and/or EPC stage, within the prescribed timelines communicated by CSIR-IIP or the Client, without any additional remuneration or financial implication to CSIR-IIP.

8. Liquidated Damages

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.

9. 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 favour 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.

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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 fulfilment 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;
 - 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) Fulfilment 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 fulfilment 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.

10. No Additional Compensation

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No additional compensation shall be payable for the following activities pertaining to the development of the BDEP and SOM:

- a) Design iterations
- b) Clarifications
- c) Review meetings
- d) Technical discussions
- e) Incorporation of Client comments
- f) Coordination activities

11. Dedicated Key Personnel

Considering the time-bound and quality-driven nature of the assignment, the Consultant shall ensure the continuous availability and readiness for deployment of the Key Personnel identified in its Technical Bid throughout the entire duration of the assignment. A Project Manager and Lead Process Engineer shall be deployed on a dedicated basis for the assignment.

Any replacement of key personnel shall not relieve the EC of its obligations under this Contract.

12. Quality Requirements

All engineering deliverables shall:

- a) Be prepared in English language and metric units
- b) Be submitted in editable and native formats
- c) Follow applicable codes, standards and industry practices
- d) Be suitable for downstream Detailed Engineering and EPC implementation

13. Final Acceptance

Completion of the assignment shall be deemed achieved only upon:

- a) Submission of all contractual deliverables;
- b) Closure of comments; and Acceptance by CSIR-IIP.

14. Disclaimer and Conditions under which RFP is issued:

1. This Request for Proposal (RFP) is being issued by CSIR–Indian Institute of Petroleum (CSIR–IIP) for selection of a qualified and experienced engineering consultant 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 RFP does not constitute a commitment by CSIR–IIP to award the Contract to any particular Bidder. No Bidder shall have any right or claim for award of the Contract merely by virtue of having submitted a Bid in response to this RFP.
3. The Director, CSIR–IIP reserves the right, at its sole discretion, to accept or reject any Bid, in whole or in part, and to annul, cancel, withdraw, modify, or reissue the RFP or any part

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thereof, at any stage of the procurement process, without assigning any reason and without incurring any liability to the Bidders.

4. CSIR-IIP reserves the right to seek clarifications, additional information, documents, or confirmations from any Bidder during the evaluation of Bids. Submission of such information shall not, however, confer any right upon the Bidder to modify its Bid except to the extent expressly permitted under the RFP.
5. CSIR-IIP may, at its discretion, amend, supplement, clarify, or modify the provisions of this RFP by issuing appropriate addenda/corrigenda. All such addenda/corrigenda shall form an integral part of the RFP and shall be binding on all Bidders.
6. The information, drawings, specifications, data, documents, and other material contained in or provided in connection with this RFP are furnished solely for the purpose of enabling the Bidders to prepare and submit their proposals. While CSIR-IIP has made reasonable efforts to ensure the accuracy and completeness of the information provided, no express or implied representation or warranty is made regarding its accuracy, adequacy, completeness, or suitability for any particular purpose.
7. Each Bidder shall be solely responsible for conducting its own independent assessment and due diligence with respect to the scope of work, technical requirements, site/project conditions, risks, assumptions, interfaces, applicable codes and standards, and all other matters relevant to the preparation and execution of the assignment. The Bidder shall not rely solely upon the information furnished in this RFP for the preparation of its Bid.
8. The Bidder shall be deemed to have examined and understood all requirements, terms and conditions of the RFP and to have satisfied itself regarding all matters that may affect the performance of the Contract before submitting its Bid. No claim arising from any misunderstanding, omission, or failure to obtain necessary information shall ordinarily be entertained after submission of the Bid.
9. All costs, expenses, charges, and liabilities incurred by a Bidder in connection with the preparation, submission, presentation, clarification, or modification of its Bid, including any costs associated with site visits or due diligence, shall be borne entirely by the Bidder. CSIR-IIP shall not be liable to reimburse any such costs irrespective of the outcome of the procurement process.
10. The evaluation of Bids and selection of the successful Bidder shall be carried out in accordance with the evaluation criteria, methodology, terms, and conditions specified in this RFP. CSIR-IIP's decision in matters relating to evaluation, qualification, shortlisting, and selection, subject to the provisions of the RFP and applicable rules, shall be final and binding.
11. The successful Bidder shall not be entitled to any payment or compensation beyond that expressly provided for in the Contract. Submission of a Bid or participation in the procurement process shall not create any contractual relationship between CSIR-IIP and any Bidder until a formal Contract is executed by the competent authority.
12. The Bidder's submission of a Bid shall be deemed to constitute its unconditional acceptance of all the terms, conditions, requirements, specifications, and provisions contained in this RFP, including any subsequent addenda/corrigenda issued by CSIR-IIP.

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13. In the event of any inconsistency between the provisions of this Disclaimer and the specific provisions contained elsewhere in the RFP or the Contract, the provisions of the RFP/Contract, as applicable, shall prevail.
14. Nothing contained in this Disclaimer shall limit or prejudice any right or remedy available to CSIR-IIP under the RFP, the Contract, applicable laws, rules, regulations, or Government of India/CSIR guidelines.

Section V: Terms of Reference

The entire scope of work shall be as specified in the RFP. **Any work, activity, or deliverable specified or required under the RFP, including those not explicitly mentioned in the ToR, shall be deemed to form part of the scope of work and shall be duly undertaken and delivered by the Consultant.**

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Section VI: Quoted Price Categories

The bidder shall consider only the following two categories while quoting prices in the Financial Bid:

1. Lump-sum price for preparation of BDEP, SOM and AM (A1)
2. Per diem rates for Technical Assistance / Other Services (A2)

The above quoted prices shall be inclusive of all taxes except applicable GSTs.

1. A1: Lump-sum price for preparation of BDEP and SOM

The Bidder shall take into account **all deliverables associated with the BDEP and SOM, as specified in Annexures 1 and 2 of the ToR, respectively, as well as the preparation of the Analytical Manual (AM) in accordance with the Scope of Work and Deliverables specified in Section II of the RFP**, while submitting its financial quotation.

Additionally, the selected Engineering Consultant shall review, respond to, and resolve all technical queries, clarifications, and engineering-related issues raised by the Client, Detailed Engineering Contractor, PMC, EPC/LSTK Contractor, or any other agency authorized by the Client during the Detailed Engineering and EPC phases of the Project, to the extent such queries relate to the Basic Design Engineering Package (BDEP), Statement of Manual (SOM), and other deliverables prepared by the Engineering Consultant.

The EC shall provide such support from the Effective Date of Contract until successful completion of Detailed Engineering and EPC stage of the Project or five (5) years from submission and acceptance of the final BDEP/SOM, whichever occurs earlier.

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 query resolving services in its quoted Contract Price.

2. A2: Technical Assistance / Additional Support Services (On-Site Deployment Basis)

In addition to the lump-sum price quoted for preparation of the BDEP, SOM and AM, the bidder shall separately quote rates for **Technical Assistance / Additional Support Services on a Per Diem basis (per person per day)** for deployment of technical personnel at the Client site during FEED/Detailed Engineering or EPC stage of the project. These services are intended for future use by CSIR-IIP, if required during subsequent project implementation phases.

All services under this section shall be treated as **on-site activities** and shall involve physical deployment of technical personnel at the Client's refinery/project site.

A single rate shall be quoted for all proposed personnel category (Lead Process Engineer/Process Specialist/Commissioning Engineer/HAZOP Specialist or equivalent).

The scope of such services may include, but shall not be limited to, the following:

- **Assistance during Detailed Engineering**
 - Technical assistance to EPCM/PMC/Detailed Engineering Contractor (DEC), through CSIR-IIP, for resolution of engineering issues arising out of developed BDEP/SOM during FEED/ Detailed Engineering/ EPC activities.

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- Assistance for review and discussion of detailed engineering deliverables, excluding activities directly associated with process guarantee obligations.
- **Assistance during HAZOP and Model Reviews**
 - Participation in 3D model reviews, if required.
 - Participation in HAZOP studies and associated discussions during detailed engineering and construction stages.
- **Assistance during Procurement and Construction**
 - Assistance during procurement activities involving critical equipment and vendor technical discussions.
 - Assistance during construction activities and inspection/expediting of critical equipment, as and when required.
- **Assistance during Pre-commissioning, Start-up and Performance Activities**
 - Assistance during pre-commissioning and start-up activities.
 - Assistance during solvent loading activities.
 - Assistance during performance guarantee test run at site.
 - Assistance during solvent regeneration activities at the end of the first cycle, if required.

Estimated Requirement for Quotation Purpose

For financial evaluation and quotation purposes only under category A2, the bidder shall consider the following indicative deployment requirements:

Sl. No.	Service Description	Indicative Duration
1	Assistance during 3D model review, HAZOP studies, detailed engineering review, procurement, construction and inspection/expediting of critical equipment	20 Man-days
2	Assistance during pre-commissioning, start-up, solvent loading and performance guarantee test run at site	20 Man-days

Conditions

1. All services under category A2 shall be considered **on-site deployment services**.
2. The quoted per diem rate shall include professional fees, salary, overheads and all costs associated with personnel deployment including travel, boarding, lodging, local conveyance, food, TA/DA and incidental expenses.
3. Utilization of these services shall be solely at the discretion of CSIR-IIP and shall not constitute a guaranteed scope of work.

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4. Payment shall be made only against actual deployment and certified utilization of services.
5. Personnel deployed under this scope shall work as per site requirements, including **48 working hours per week** in accordance with Client site practices.

For evaluating the lowest-priced (L1) bidder, only the quoted price for A1 category under Financial Bid shall be considered.

Validity of Financial Quotation

1. The quoted price under Category A1 shall remain valid for a period of **90 days** from the last date of submission of the Tender/Financial Bid.
2. The quoted price under Category A2 shall remain valid till 31st December 2027 or completion of EPC/Detailed Engineering of Plant (whichever occurs LATER) from the last date of submission of the Tender/Financial Bid.

Section VII: Bid Evaluation

Bidding Procedure (LCS – Two-Bid System for BDEP & SOM Assignment)

The selection of the Engineering Consultant (EC) for preparation of the Basic Design Engineering Package (BDEP) and Supervisory Operating Manual (SOM) shall be carried out under the **Least Cost Selection (LCS)** method through a Two-Bid System.

Participation in the tender shall be restricted only to those parties who have submitted a response to the REoI and have been shortlisted based on the Qualification Criteria set in the REoI.

Eligible bidders shall submit their proposals in two separate sections, namely:

- A. **Technical Bid**, comprising documented and attested proof of experience in preparation of BDEP/FEED/PEP and Engineering Services for the hydrocarbon sector such as refinery, petrochemical, or gas processing plants (preferably in separation technologies), **wherein experience in preparation BDEP/PEP involving licensors-driven process packages shall be accorded higher weightage during technical evaluation**, along with HAZOP/safety study capability, team composition, etc.; and
- B. **Financial Bid (FB)**, comprising:

- 1. **A1: Lump-sum price for preparation of BDEP and SOM**

Bidder shall take into account all the deliverables associated with BDEP and SOM as per Annexure 1 & 2 of ToR while providing quotation.

Additionally,

The selected Engineering Consultant shall review, respond to, and resolve all technical queries, clarifications, and engineering-related issues raised by the Client, Detailed Engineering Contractor, PMC, EPC/LSTK Contractor, or any other agency authorized by the Client during the Detailed Engineering and EPC phases of the Project, to the extent such queries relate to the Basic Design Engineering Package (BDEP), Statement of Manual (SOM), and other deliverables prepared by the Engineering Consultant.

The EC shall provide such support from the Effective Date of Contract until successful completion of Detailed Engineering and EPC stage of the Project or five (5) years from submission and acceptance of the final BDEP/SOM, whichever occurs earlier.

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 query resolving services in its quoted Contract Price.

- 2. **A2: Technical Assistance / Additional Support Services (On-Site Deployment Basis)**

In addition to the lump-sum price quoted for preparation of the BDEP and SOM, the bidder shall separately quote rates for **Technical Assistance / Additional Support Services on a Per Diem basis (per person per day)** for deployment of technical personnel at the Client site. These services are intended for future use by CSIR-IIP, if **required** during subsequent project implementation phases.

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All services under this section shall be treated as **on-site activities** and shall involve physical deployment of technical personnel at the Client's refinery/project site.

Selection of Engineering Consultant

The Technical Bids shall be opened and evaluated first against the prescribed technical criteria mentioned below. Only those bidders meeting the required technical threshold shall be considered technically qualified, and their Financial Bids shall be opened subsequently. The minimum qualifying technical score will be 75 out of a maximum of 100.

The award of work shall be made to the lowest-priced (L1) bidder among the technically qualified bidders, in line with LCS principles prescribed in the Manual for Procurement of Consultancy services (Second Edition, 2025). **For evaluating the lowest-priced (L1) bidder, only the quoted price for A1 category under Financial Bid shall be considered.**

The total financial bid of any bidding party shall be calculated as follows:

- FB = Quoted lump sum price for preparation of BDEP and SOM (A1)

Bidders to quote competitive prices considering the fact that price negotiations, if required, shall be held with the lowest tenderer only.

Tie-Breaking Methodology

If two or more bidders quote identical L1 prices:

1. All tied L1 bidders shall be asked to submit a further discount bid.
2. If a tie still remains, the bidder having the **highest cumulative turnover starting FY 2022-23**, shall be ranked L1.
3. If turnover is also identical (or in case of start-ups), the bidder who submitted the bid earlier on the portal (date and time stamp) shall be selected.

Evaluation of Technical Bids

The received Technical Bids 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)
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			0	0
No. of BDEPs (separation-based technologies/processes) for plants having < 10 TPH throughput	N2		1	40
			2	60
			3	80
			4 and above	100

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

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

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

$$\mathbf{E1.B = M_N}$$

3. **E2 – 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	Marks (M)
--	-----------

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processes/technologies with unit feed throughput > 5 TPH (N)	
0	0
1	40
2	60
3	80
4 and above	100

$$E2 = M_N$$

4. **E3 – 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
		3	80
		4 and above	100

$$E3 = M_{N1} \times 0.8 + M_{N2} \times 0.2 \text{ (When } N1 < 4 \text{ and } N2 > 0)$$

$$E3 = M_{N1} \text{ (When } N2 = 0 \text{ or } N1 \geq 4)$$

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 ≤ N2 < 20	20 ≤ N2 < 30	30 ≤ N2

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Marks (M_{N2})	0	25	50	100
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$$E4 = M_{N1} \times 0.50 + M_{N2} \times 0.50$$

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

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 technical score will be 75 out of maximum 100

Request for Proposal (RFP)

RFP/IIP/RPBD-01/2026, Dated: 31-08-2026

Section VIII: Schedule of Payment

The following schedule of payment applies only for activities associated with Preparation and Submission of BDEP and SOM.

Payment shall be made strictly against achievement, submission, review closure (where applicable), and acceptance of the respective milestone deliverables by CSIR-IIP. No advance payment, mobilization advance, pre-payment, or payment against project initiation activities shall be made under this Contract.

Milestone No.	Key Deliverables	Payment (% of Contract Value)
M1	Kick-off Meeting (KOM), Design Basis Finalization and Data Freeze	Nil
M2	Heat & Material Balance (HMB), Process Flow Diagrams (PFDs), Utility Summary and review closure	20%
M3	Final PFDs, Equipment List, Equipment Sizing and Long Lead Equipment Datasheets	15%
M4	First Issue P&IDs, Logic Diagrams, Control Philosophy, Plot Plan and review closure	25%
M5	Complete BDEP Preparation, Compilation, Submission and review closure	30 %
M6	Supervisory Operating Manual (SOM) , Analytical Manual (AM) and Final Package Submission	10 %
Total		100%

Payment Terms and Conditions

1. No advance payment, mobilization advance, pre-payment, or payment against Kick-off Meeting, Design Basis Finalization, Data Freeze, or any anticipated work shall be made by CSIR-IIP.
2. Payment shall be released only upon submission and acceptance of milestone deliverables by CSIR-IIP and against raised and accepted invoice.
3. Milestones involving review and comment incorporation shall be considered complete only after closure of comments to the satisfaction of CSIR-IIP.
4. Submission of draft, incomplete, or partially completed deliverables shall not qualify for milestone payment.
5. No separate payment shall be admissible for meetings, technical discussions, presentations, revisions, comment incorporation, technical clarifications, or post-submission support activities, and such costs shall be deemed included in the quoted contract price.
6. Final payment under Milestone M6 shall be released only after submission of all contractual deliverables in the prescribed formats and acceptance by CSIR-IIP.

Section IX: General terms for selected Engineering Consultant (EC)

- ❖ **Participation in meetings:** The Engineering Consultant (EC), shall attend the Design Basis Meeting(s) (including pre-award, if required), Participate in PFD, HMB, P&ID, and model review meetings and support discussions with THE CLIENT (through CSIR IIP).
- ❖ **Alignment with Process Design:** EC shall strictly design based on process plant configuration provided by CSIR IIP. Any deviation from the provided design must be explicitly highlighted and approved by CSIR IIP in writing.
- ❖ **Iterations & Revisions:** EC shall incorporate comments from CSIR IIP, comments from THE CLIENT (routed via CSIR IIP). All revisions shall be completed within agreed timelines without extra cost.
- ❖ **Responsibility for Completeness:** EC shall be responsible for completeness, consistency, and correctness of BDEP & SOM and ensuring inter-discipline integration.
- ❖ **No Claim for Additional Compensation:** EC shall not be entitled to extra payment for attending meetings (Pre-award discussions, Review meetings), minor scope clarifications, design iterations and coordination with licensor/client
- ❖ **Key Personnel/Point of Contact:** EC shall ensure that “A Project Manager and a Lead Process Engineer shall be deployed on dedicated basis for the entire duration of the project. Any replacement shall be subject to prior written approval of the Employer.”
- ❖ **Readiness to address queries during EPC/Detailed Engineering Stage:** The EC shall agree to promptly respond to all technical queries/comments raised by the Client and/or CSIR IIP pertaining to the developed BDEP and /or SOM, during the Detailed Engineering/EPC stage within the then allotted timeframe, without any additional remuneration. Any costs associated with engineering studies, simulation runs, manpower deployment, technical coordination, or other support activities anticipated for such services shall be deemed included in the quoted price for BDEP development.

Section X: Information which shall be provided in Technology Information Package (TIP)

CSIR Indian Institute of Petroleum Dehradun shall provide the following information in the Technology Information Package (TIP) which will serve as a reference document for preparation of the BDEP and Supervisory Operating Manual (SOM)

- ❖ Plant Design Basis and Design Data
- ❖ Process Description
- ❖ Process Flow Diagrams with preliminary control elements
- ❖ Stream wise Heat & Material Balance
- ❖ Utility Summary Sheet
- ❖ Preliminary equipment data sheets of Towers, Vessels, Pumps, Heat Exchangers
- ❖ Column Vapor Liquid traffic profile and Column Hydraulics shall be provided as required by Engineering Consultant
- ❖ Heat Exchanger curves shall be provided as required by Engineering Consultant
- ❖ Chemicals and Effluent Summary
- ❖ Chemicals MSDS
- ❖ Other design requirements as provided by Client
- ❖ Site data as provided by Client

The Engineering Consultant may request any additional information deemed necessary for the execution of the assignment, and CSIR-IIP shall make reasonable efforts to provide such information, subject to its availability.

Additionally,

The Engineering Consultant shall compile, organize, and document the analytical and laboratory-related information provided by the Procuring Entity (CSIR-IIP) and prepare an Analytical Manual (AM) in a conventional industrial format suitable for inclusion in the engineering documentation of the Unit. The Engineering Consultant's scope shall primarily comprise systematic compilation and presentation of the information provided by CSIR-IIP.

The selected Engineering Consultant shall execute a Non-Disclosure Agreement (NDA) with CSIR-IIP to ensure the confidentiality and prevent any unauthorized use, disclosure, or dissemination of the techno-commercial data and information shared by CSIR-IIP in connection with the execution of the project.

Section XI: Documents to be submitted with Tender

Formats & Declarations

1. Format 1: Covering Letter for Tender Acceptance
2. Format 2: Organisational Details and Bidder Profile
3. Format 3 (A & B): Project Experience and Manpower Availability Sheet
4. Format 4 (A & B): List of experts and consultants on payroll
5. Format 5: Financial Strength of Organisation
6. Format 6: Compliance Sheet
7. Format 7: Declaration - Regarding Debarment, Blacklisting, and Related Matters
8. Format 8: Declaration - Regarding Execution of Work through Indian Office(S)
9. Format 9: Integrity Pact (Signed and stamped on each page)

Note 1: *Formats 3A, 3B, 4A, 4B and 5 shall be resubmitted in the same format as submitted during the EoI stage, wherever there are no changes in the information furnished therein. In case of any changes, the respective formats shall be duly updated and resubmitted. Formats 4B and 5 shall be duly attested by a registered Chartered Accountant (CA).*

Note 2: *Format 9 need not be re-submitted if already provided during EoI.*

10. Format 10: Declaration – Regarding Availability and Deployment of Adequate Manpower
11. Format 11: Bid Securing Declaration

Other Documents

1. Power of Attorney
2. Certificate of Incorporation of Company and JV Agreement (if applicable)
3. CA Certified company balance sheets since F.Y 2022-23
4. PAN No. and GST Certificate
5. Bid Security Declaration (as per provided Format 11)
6. Format 12: Financial Bid Declaration

Important:

- No financial terms, rates, prices, amounts, or other financial figures shall be disclosed or included anywhere in the Technical Bid.
- No technical terms, details, specifications, or technical figures shall be disclosed or included in the Financial Bid.

COVERING LETTER FOR TENDER ACCEPTANCE

[On company letterhead of the Bidder]

Date: _____

Place: _____

To,

The Director

CSIR–Indian Institute of Petroleum (CSIR–IIP)
Dehradun, Uttarakhand

Subject: Tender Acceptance for RFP No. _____ dated _____

Dear Sir,

We, **M/s** _____, having our registered office at _____, hereby submit our bid in response to **RFP No. _____ dated _____** for “Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and provision of Technical Assistance/Other Services for the process: Recovery of High Purity Toluene from Hydrogenated PyGas”.

We hereby confirm that we have carefully examined and understood the complete RFP documents, including the scope of work, technical specifications, terms and conditions, deliverables, schedules, commercial requirements and all amendments/corrigenda/clarifications issued by CSIR–IIP up to the date of submission of our bid.

We hereby unequivocally confirm that:

1. **We accept all the terms and conditions of the RFP** and agree to comply with the same in full, without any deviation, except for deviations, if any, specifically and separately identified in our bid in the prescribed format.
2. We have examined the complete **Scope of Work, Technical Requirements, Deliverables, Schedule, Payment Terms, BOQ Document (Price Bid Format), Performance Requirements, and other contractual provisions** and confirm our understanding and acceptance thereof.
3. We confirm that the information, documents, credentials and declarations submitted by us along with the bid are **true, complete and correct** to the best of our knowledge. We understand that any misrepresentation or submission of incorrect information may result in rejection of our bid and/or other action as permissible under the RFP and applicable rules.
4. We confirm that our bid shall remain **valid for the period specified in the RFP** from the bid submission deadline and shall remain binding upon us during such period.
5. We undertake that, in the event of award of the contract to us, we shall execute the required agreement/contract and commence and complete the services in accordance with the requirements, timelines and conditions specified in the RFP.
6. We confirm that we have **not submitted any condition, qualification or reservation** that would materially alter the requirements of the RFP, except those expressly identified in the prescribed deviation statement, if applicable.
7. We confirm that we have carefully assessed the requirements of the assignment and have taken into consideration all factors that may affect the performance of the contract, including the technical, commercial, statutory, regulatory and site-related requirements.

8. We undertake to deploy **adequate qualified and experienced personnel and necessary resources** for successful execution of the assignment in accordance with the RFP requirements.
9. We confirm that we are eligible to participate in the tender and that there is **no conflict of interest, prohibition, debarment or other disqualification** applicable to us under the RFP or applicable rules, except as specifically disclosed in our bid.
10. We agree that **CSIR-IIP shall have the right to accept or reject any bid, or cancel the tender process, in accordance with the provisions of the RFP and applicable procurement rules**, and we shall have no claim on this account except as provided under the applicable contractual/procurement provisions.
11. We agree that the documents and information submitted as part of our bid shall form an integral part of our offer and, upon award, the resulting contract shall be governed by the RFP and the agreed contractual documents.

Accordingly, we hereby submit our bid with **full and unconditional acceptance of the RFP requirements** and confirm our commitment to undertake the assignment in accordance with the terms and conditions stipulated therein.

Thanking you,

Yours faithfully,

For M/s _____

Signature: _____

Name: _____

Designation: _____

Address: _____

Email: _____

Telephone: _____

Company Seal

Note: This letter shall be signed by the authorized signatory of the bidder. The bidder shall ensure that the signatory is duly authorized to submit the bid and bind the organization contractually.

ORGANISATIONAL DETAILS AND BIDDER PROFILE

RFP No.: _____

RFP Title: _____

Name of Bidder: _____

1. Basic Organizational Details

Sl. No.	Particulars	Details
1	Legal Name of Organization	
2	Legal Status (Proprietorship /Partnership/ LLP /Private Limited /Public Limited / Other)	
3	Year of Establishment	
4	CIN / Registration No.	
5	Registered Indian Office Address	
6	Head / Corporate Office Address	
7	PAN	
8	GSTIN	
9	Website	
10	Name & Designation of Chief Executive / Head of Organization	
11	Authorized Contact Person for RFP	
12	Telephone / Mobile	
13	E-mail	

2. Brief Company Profile

Provide a brief description (200 – 300 words max. / attach company brochure) of the organization, including its principal business activities, core engineering/consultancy capabilities and experience relevant to the present RFP.

3. Engineering Strength

Particular	Details
Total Engineering Manpower	
Process Engineering Manpower	
Other Engineering Disciplines Available	
No. of Engineering Offices / Centers in India	
Key Engineering Capabilities (Expertise/ Tools/ Software Available) relevant to this RFP	

4. Quality Certification

Certification	Certificate No.	Validity
ISO 9001		
Other relevant certification, if any		

5. Parent Company / Subsidiary / Group Company**Applicable:** ☐ Yes ☐ No

If applicable:

Particular	Details
Name of Parent / Group Company	
Nature of Relationship	
Country of Incorporation	

6. Declaration

We hereby certify that the information furnished above is true and correct to the best of our knowledge and belief. We understand that any misrepresentation or submission of incorrect information may result in rejection of our bid in accordance with the provisions of the RFP.

For and on behalf of the Bidder

Name of Organization: _____

Authorized Signatory: _____

Name: _____

Designation: _____

Signature: _____

Date: _____

Place: _____

Company Seal

Project Experience and Manpower Availability Sheet

Experience & Technical Qualification			No. of Projects / Manpower (Only Numbers allowed)	
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 BDEP/FEED/PEPs developed for <u>non-separation technologies / processes</u> in refinery, petrochemical, or chemical industries, with throughput ≥ 5 TPH		
4	E3	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)
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.

- 3. Multidisciplinary Engineering**:** Mechanical Engineering, Piping Engineering, Instrumentation & Control, Electrical Engineering, Civil & Structural Engineering, Process Safety/ HAZOP Engineers, CAD/Drafting Specialist, Material/Metallurgy Specialist, Project Engineering/Coordinator

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Project Details

For the projects mentioned under the categories E1.A, E1.B, E2, and E3 in Format-3A, applicant has to submit the following information Category Wise:

Category: E1.A / E1.B / E2 or E3							
SI No.	Project Name	Scope (BDEP/FEED/PEP/ Detailed Engineering/HAZOP/EPC / Engineering Services)	Year of Completion / Initiation	Throughput of the unit designed / studied (tph)	Order Value of the assignment in Lakhs of Rs. (Enclose copy of work order)	Name of Client	Copy of Work Order or Completion Certificate enclosed (Yes/No)

Note:

1. *FORMAT-4.A and FORMAT-4.B needs to be filled in support for Evaluation Category E4.*
2. *Decision of Evaluating Committee in ascertaining “similar nature” and “similar assignment” will be final.*
3. *Attach copy of Completion Certificate, or copy of Work Order*
4. *The Work Order and/or Completion Certificate submitted as supporting evidence shall clearly reflect the name and scope of the project/work as declared in the above table. Confidential details may be masked.*
5. *Any project listed in the above table for which the corresponding **Work Order and/or Completion Certificate** is not submitted shall **not be considered for evaluation or scoring**.*

However, where the Applicant is unable to submit the Work Order and/or Completion Certificate due to contractual confidentiality obligations with the Client, the Applicant shall submit:

1. *a brief write-up describing the scope of work, nature of services rendered, project sector, and completion status; and*
2. *an undertaking that the relevant Work Order and supporting documents shall be submitted, without exception, after the RFP stage, if the Applicant is selected as the L-1 Bidder.*

*Such relaxation shall be permitted for **a maximum of two (2) projects only per Applicant**. Any additional project(s) for which the prescribed supporting documents are not submitted shall not be considered for evaluation or scoring.*

6. *EPC / Detailed Engineering experience will be considered under FEED and PEP (Process Engineering Package) will be considered under BDEP*

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

List of experts/consultants on payroll

(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)					
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.					
11.					
...					
...					
40.					

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

Note: Qualification Criteria E4 will be scored only on the basis of the number of engineers listed in the above table irrespective of any other information provided, subject to attestation of the same by C.A in Format 4.B

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Certification

(To be furnished on the letter head of the organization)

Date: _____

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the employees listed in **Format-4.A** of the Request for Proposal (RFP) submission are employed with **(Company Name)** and are on the company's regular payroll.

It is further certified that **(Company Name)** is compliant with the applicable provisions of the Employees' Provident Fund and Miscellaneous Provisions Act 1952, and that Provident Fund contributions and statutory returns for the employees referenced in **Format-4.A** are duly processed and filed by the company in accordance with applicable statutory requirements.

This certificate is issued for official purposes upon request.

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Attested

(Signature of Chartered Accountant)

Name: _____

Registration No.: _____

Date: _____

Stamp _____

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 by a Chartered Accountant**
2. **In addition, Copy of Balance Sheets for relevant year(s) to be attached**

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

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

FORMAT-6

Compliance Sheet		
SL. No.	Description of Document of be enclosed	Documents enclosed (Yes/No)
1	Format-1 to 11 complete in all respects, duly signed	
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	Copy of PAN no. certificate enclosed	
5	Copy of GST registration certificate enclosed	
6	Valid ISO Certificate	
7	JV /Consortium Agreement if applicable	
8	Udyam Registration Certificate in case of MSE applicant / Recognition certificate from DPIIT for Startups	

(Signature of the applicant duly authorized)

Date: _____

Stamp _____

Declaration

(REGARDING DEBARMENT, BLACKLISTING, AND RELATED MATTERS)

(To be furnished on the letter head of the organization)

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: _____

Declaration

(REGARDING EXECUTION OF WORK THROUGH INDIAN OFFICE(S))

(To be furnished on the letter head of the organization)

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 "Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Associated Engineering Services for Toluene Extraction Process" 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)

Place.....
Date.....

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

Place.....
Date.....

Witness 1:
(Name & Address): _____

Witness 2:
(Name & Address): _____

(Signature of the applicant duly authorized)

Date: _____

Stamp: _____

Declaration

(AVAILABILITY AND DEPLOYMENT OF ADEQUATE MANPOWER)

(To be furnished on the letter head of the organization)

To

The Director

CSIR–Indian Institute of Petroleum (CSIR–IIP)

Dehradun

Tender/ Reference No.: _____

Name of the Project/Assignment: Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Associated Engineering Services for Toluene Extraction Process

DECLARATION

We, **M/s.** _____, having our registered office at _____, hereby declare and confirm that, in the event of our selection for the above assignment, we shall provide adequate and suitably qualified manpower having the requisite experience and technical expertise for the timely and successful execution of the Project.

In this regard, we hereby undertake as follows:

1. We shall ensure adequate availability of suitably qualified and experienced manpower, as indicated in **Format 4A – Manpower Availability**, with the required process and multi-disciplinary engineering expertise for timely and satisfactory execution of the assignment.
2. Any change in Key Personnel shall be intimated to CSIR–IIP in advance, wherever practicable, and the proposed replacement shall have qualifications and experience commensurate with those of the personnel being replaced.
3. Any change in Key Personnel shall not entitle us to any extension of time, relaxation of milestones, or additional cost.
4. We shall remain fully responsible for the **quality, completeness, technical integrity and timely delivery** of all deliverables.

5. We confirm that the manpower information furnished in **Format 4A and other bid documents** is true and accurate. Any material misrepresentation may render our bid liable for rejection or other action as per the Tender/Contract.
6. We confirm that we possess the necessary **manpower, organizational capability and technical expertise** to complete the assignment within the stipulated time and as per CSIR-IIP requirements.

We submit this declaration as an integral part of our bid and confirm that the above commitments shall remain binding upon us throughout the execution of the assignment, if awarded to us.

For and on behalf of M/s. _____

Authorized Signatory: _____

Name: _____

Designation: _____

Date: _____

Place: _____

Company Seal

Bid Securing Declaration

(To be furnished on the letter head of the organization)

Bidder's Name _____

[Address and Contact Details]

Bidder's Reference No. _____

Date.....

To

The Director-IIP, through

Head of Procurement

CSIR Indian Institute of Petroleum Dehradun

Mohkampur, Haridwar Road,

Dehradun – 248005, Uttarakhand

Ref: **RFP/IIP/RPBD-01/2026**

Tender Title: ***Preparation and Supply of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM), and Associated Engineering Services for Toluene Extraction Process***

Sir/ Madam

We, the undersigned, solemnly declare that:

We understand that according to the conditions of this Tender Document, the bid must be supported by a Bid Securing Declaration in lieu of Bid Security.

We unconditionally accept the conditions of this Bid Securing Declaration. We understand that we shall stand automatically suspended from being eligible for bidding in any tender in Procuring Organization for 2 years from the date of opening of this bid if we breach our obligation(s) under the tender conditions if we:

- 1) withdraw/ amend/ impair/ derogate, in any respect, from our bid, within the bid validity; or
- 2) being notified within the bid validity of the acceptance of our bid by the Procuring Entity:

refused to or failed to produce the original documents for scrutiny or the required Performance Security within the stipulated time under the conditions of the Tender Document.

Fail or refuse to sign the contract.

We know that this bid-Securing Declaration shall expire if the contract is not awarded to us, upon:

- 1) receipt by us of your notification
of cancellation of the entire tender process or rejection of all bids or
of the name of the successful bidder or
- 2) forty-five days after the expiration of the bid validity or any extension to it.

(Signature with date)

.....

(Name and designation)

Duly authorized to sign bid for and on behalf of.....

[Name & address of Bidder and seal of company]

Dated on day of [Insert date of signing]

Place..... [Insert place of signing]

DATE: _____

Financial Bid: Declaration

The Financial Bid for undertaking the complete scope of work as specified in the Tender/RFP documents, including all deliverables, services, meetings, reviews, revisions and associated activities required for successful completion of the assignment shall have the following components and has been uploaded in the BOQ under the said categories only.

Quoted rates exclusive of Goods and Service Tax (GST):

Sl. No.	Description of Service / Deliverable	Unit	Quantity
A1	Preparation of Basic Design Engineering Package (BDEP), Supervisory Operating Manual (SOM) and Lab/Analytical Manual (AM) as per Scope of Work, Design Basis and Tender requirements	Lump Sum	1
A2	Charges for Onsite Technical Assistance / Additional Support Services	Per Diem	1

***Note: For calculation of L1-Bidder only price quoted under Category A1 shall be considered.**

Commercial Declaration

We hereby certify that:

1. We have examined all the Tender/RFP documents, including the Scope of Work, Technical Requirements, Terms & Conditions and payment provisions.
2. We have fully considered the requirements of the Tender/RFP while arriving at the quoted price.
3. The Financial Bid submitted herein is complete and covers the entire Scope of Work defined in the Tender/RFP.
4. No condition or qualification has been attached to our Financial Bid.
5. The prices quoted are firm and shall remain valid for the period specified above.
6. We agree that any arithmetic error in the Financial Bid shall be dealt with as follows: **In the event of any discrepancy between the amount quoted in figures and the amount quoted in words, the amount stated in words shall prevail and shall be considered for evaluation.**
7. We understand that the Financial Bid shall be evaluated in accordance with the commercial evaluation criteria specified in the Tender/RFP.

Notes:

Taxes and Duties

1. GST shall be payable as applicable at the prevailing statutory rate.
2. The Bidder shall be responsible for all applicable taxes, duties, levies and statutory obligations.
3. Tendered rates shall be inclusive of all taxes and levies payable under respective statutes. If any further tax or levy is imposed by Statutes, after the date of receipt of tenders and the contractor thereupon necessarily and properly pays such taxes / levies, the contractor shall be reimbursed the amount as per the rules on producing proof of

payment so made, provided such payments, if any, is not in the opinion of the Employer (whose decision shall be final and binding) attributable to delay in executing of work within the control of the contractor.

Price Basis

1. The quoted price under category A1 shall be **firm and fixed** for the entire scope of work and shall comprise all costs associated with execution of the assignment, including but limited to:
 - a. Engineering and consultancy manpower;
 - b. Preparation, checking and review of all deliverables;
 - c. Internal coordination and project management;
 - d. Review Meetings/discussions with the Client;
 - e. Incorporation of comments and revisions within the agreed scope;
 - f. Software/computational resources required for the assignment;
 - g. Documentation and reproduction of deliverables;
 - h. All other incidental expenses necessary for completion of the Scope of Work.
 - i. No additional payment shall be admissible for activities that are reasonably required for completing the specified Scope of Work and deliverables.
2. The quoted price under category A2 shall be **fixed** till 31st December 2027 or completion of EPC/Detailed Engineering of Plant (whichever occurs later) from the last date of submission of the Tender/Financial Bid.
 - a. The quoted per diem rate shall include professional fees, salary, overheads and all costs associated with personnel deployment including travel, boarding, lodging, local conveyance, food, TA/DA and incidental expenses.
 - b. Utilization of these services shall be solely at the discretion of CSIR-IIP and shall not constitute a guaranteed scope of work.
 - c. Payment shall be made only against actual deployment and certified utilization of services.

Payment Terms

All payment terms shall be milestone-based and linked with acceptance of deliverables by CSIR-IIP. There shall be no provision of advance payment.

The milestone-wise payment schedule shall be read in conjunction with the payment terms specified in the Tender/RFP. In case of any discrepancy, the Tender/RFP provisions shall prevail.

Quotation Validity

*The quoted price under Category A1 shall remain valid for a period of **90 days** from the last date of submission of the Tender/Financial Bid.*

The quoted price under Category A2 shall remain valid till 31st December 2027 or completion of EPC/Detailed Engineering of Plant (whichever occurs Later) from the last date of submission of the Tender/Financial Bid.

For and on behalf of the Bidder

Name of Firm/Company: _____

Authorized Signatory: _____

Name: _____

Designation: _____

Signature: _____

Date: _____

Place: _____

Company Seal: _____

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: 2015 certificate, Institute is devoted to multidisciplinary areas of Research and Development in the downstream sector of hydrocarbon and

Terms of Reference (ToR)

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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.

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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

Terms of Reference (ToR)

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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,

Terms of Reference (ToR)

RFP/IIP/RPBD-01/2026, Dated: 31-8-26

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;

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Senior Principal Scientist, Head Business Development
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Sh. Prasenjit Ghosh

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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. Eligibility Criteria for participation in EOI and in subsequent tendering process

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Interested Engineering Consultants, Engineering Companies, Engineering Firms, Incorporated Joint Ventures (JVs), or Consortiums (hereinafter collectively referred to as the "Applicant") submitting an Expression of Interest (EoI) shall satisfy all of the following minimum eligibility requirements.

For the purposes of this REoI:

- **A Single Legal Entity** means an individual company, corporation, or organization incorporated or registered under the applicable laws.
- **An Incorporated Joint Venture (JV)** means a separate legal entity incorporated by two or more members for undertaking the proposed assignment.
- **A Consortium** means an association of two or more legally independent entities formed for the purpose of participating in this REoI through a duly executed Consortium Agreement, with one member designated as the Lead Member.

1. Legal Status

The Applicant shall be an Indian engineering consultancy firm, company, or organization, incorporated or registered in India. This shall include Indian subsidiaries, branch offices, or project offices of international engineering companies legally established in India and undertaking engineering consultancy assignments for domestic projects.

The Applicant shall possess a valid registration to operate in India and shall be responsible for 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)**

Applicability to Joint Ventures (JVs)/ Consortium(s)

In the case of a Joint Venture (JV)/Consortium, unless expressly provided otherwise in this EoI, each constituent member shall individually satisfy all eligibility requirements stipulated in this Section, including but not limited to legal status,

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statutory registrations, quality management system certification, financial eligibility, and blacklisting/debarment status. Each member shall possess all applicable registrations, approvals, and certifications required to lawfully undertake engineering consultancy assignments in India. Failure of any constituent member to comply with any of the prescribed eligibility requirements shall render the Joint Venture/Consortium ineligible.

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, Legally enforced JV Agreement (In case of JVs);
- 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.

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

Rules for JVs / Consortiums

1. Only Joint Ventures (JVs) or Consortiums comprising a maximum of two (2) constituent members shall be permitted.
2. JVs/Consortiums shall submit a legally enforceable JV/Consortium Agreement explicitly specifying the Lead Member, percentage participation of each member, scope of work of each member, liability of the members, and the authorized representative.
3. Only one member shall be designated as the Lead Member, who shall be authorized through a legally valid Power of Attorney to represent and bind all members during the procurement process and, if awarded, throughout execution of the contract.
4. The Lead Member of the Joint Venture (JV)/Consortium shall hold not less than 50% equity/participation in the JV/Consortium and shall independently satisfy at least 50% of the prescribed financial eligibility criteria. Further, the Lead Member shall have independently executed, in its own name and not as a member of any consortium, joint venture, partnership, or other collaborative arrangement, at least one consultancy assignment comprising Basic Design Engineering Package (BDEP)/ Front End Engineering Design (FEED)/ Detailed Engineering/ Engineering, Procurement and Construction (EPC)/ Engineering Services for a similar technology having a capacity of not less than 10 TPH in a Hydrocarbon Refinery or Petrochemical Complex since 1st January 2015.
5. The experience of all partners may be combined for satisfying the prescribed technical eligibility criteria, provided that all information is submitted strictly in the prescribed Formats 3A and 3B.
6. The combined average annual turnover of all partners shall satisfy the prescribed turnover requirement, subject to the Lead Member possessing not less than 50% thereof. In case of a JV/Consortium, each constituent member shall submit Format 5, duly certified by a Chartered Accountant (CA), along with the company's audited financial statements.
7. The Joint Venture (JV)/Consortium shall submit consolidated manpower availability details in accordance with Format 4A, covering the manpower proposed from all constituent members. The information furnished in Format 4A shall be duly certified by a Chartered Accountant (CA) in the prescribed Format 4B.
8. No member of a JV/Consortium shall participate in this REoI either individually or as a member of another JV/Consortium. Any such participation shall result in rejection of all associated applications.

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9. No change in the constitution of the JV/Consortium or its constituent members shall be permitted after submission of the EoI.
10. All communications, payments, and contract administration shall be undertaken exclusively through the Lead Member.
11. Upon award of the contract, every JV/Consortium partner shall execute the contract. All constituent members shall be jointly and severally liable for due performance of the contract.
12. In the case of an Incorporated Joint Venture (JV), the Permanent Account Number (PAN) Card and Goods and Services Tax (GST) Registration Certificate shall be submitted in the name of the incorporated JV entity. In the case of a Consortium, the PAN Card and GST Registration Certificate shall be submitted separately by each constituent member.
13. In the case of a Joint Venture (JV) or Consortium, the Certificate of Incorporation of each constituent member shall be submitted. Where the JV is an Incorporated Joint Venture, the Certificate of Incorporation of the incorporated JV entity shall also be submitted.
14. In the case of an Incorporated Joint Venture (JV), Format 7 (Declaration regarding Blacklisting), Format 8 (Declaration regarding Execution of Work at Indian Offices), and Format 9 (Integrity Pact) shall be submitted in the name of the Incorporated JV and signed by its duly authorized signatory. In the case of a Consortium, the aforesaid formats shall be separately executed, signed, and submitted by the duly authorized signatory of each constituent member of the Consortium.

Annexure 1

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

4. PROCESS FLOW DIAGRAM

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All new PFDs shall be prepared for the 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)
 - ❖ Thermal conductivity at operating conditions (Vapor and liquid separately for 2-phase streams) Cp/Cv, Compressibility Factor of vapor

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- ❖ 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. All new P&IDs shall 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 valves.
- ❖ Set pressures of safety valves.

Equipment

Equipment is shown on the P&ID's. To clarify the process scheme, the equipment

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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 the information provided on equipment data sheet.

 - Outline sketch
 - Internals for vessels/ towers

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- 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
- ❖ Nitrogen
- ❖ Plant air/ Instrument air as required for the process
- ❖ Power
- ❖ Cooling water
- ❖ Raw/ Process water
- ❖ Flushing Oil
- ❖ Solvent
- ❖ Service 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

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

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- ❖ 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 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 and quantities during normal and emergencies. Provide recommended method of disposal. The concentration of any hazardous/ toxic components shall be defined.
- ❖ 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 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. The P&IDs furnished as part of the Basic Design Engineering Package (BDEP) shall incorporate appropriate preventive and mitigating measures for the hazards identified through the HAZOP study conducted during preparation of the BDEP. 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

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Model.

- b. Material Safety Data Sheets (MSDS) shall be provided for all chemicals
- c. Guidelines for any specialized (due to special 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
 - ❖ Electrical power
 - ❖ Nitrogen
 - ❖ Boiler Feed Water

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

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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.

List of new 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:

- ❖ 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

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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. **Filters:**

- ❖ Inlet/ outlet process conditions with physical properties
- ❖ Mechanical design conditions
- ❖ Materials of construction
- ❖ Type of filter
- ❖ Solid data

e. **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.

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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:**
 - ❖ 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.

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22. PLOT PLAN

Engineering Consultant 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 (if any) and site data 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 category pumps, solvent/speciality chemicals handling equipment, slurry filter, special valves, refractory materials, coalescers, analyzers, etc

26. POST PROJECT SUPPORT:

The selected Engineering Consultant shall review, respond to, and resolve all technical queries, clarifications, and engineering-related issues raised by the Client, Detailed Engineering Contractor, PMC, EPC/LSTK Contractor, or any other agency authorized by the Licensee during the Detailed Engineering and EPC phase of the Project, to the extent such queries relate to the Basic Design Engineering Package (BDEP), Statement of Manual (SOM), and other deliverables prepared by the Engineering Consultant.

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;

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- 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 Detailed Engineering and EPC Phase 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 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 chemicals with consumption rate
- ❖ Preparation for initial start-up including Solvent loading, refractory dry out, acid cleaning, alkali boil out, passivation, etc. (as applicable)
- ❖ Proprietary equipment/ chemicals/ 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
- ❖ Solvent 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 EC/Licensors
- ❖ 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:

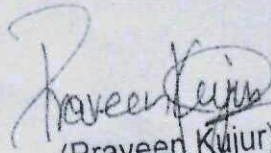
Existing Rule	Amended Rule
Rule 151- Debarment from bidding	Rule 151 – Debarment from bidding
(i) A bidder shall be debarred if he has been convicted of an offence—	(i) A bidder shall be liable to be debarred if—
(a) Under the Prevention of Corruption Act, 1988; or	(a) he has been convicted of an offence under:
(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.	(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
	(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. 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.
(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.	(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.
(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.	(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— (a) has breached the code of integrity; or (b) has, in respect of employees engaged under the contract— (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

Existing Rule	Amended Rule
	contributions due to default by the bidder. 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.
(iv) The bidder shall not be debarred unless such bidder has been given a reasonable opportunity to represent against such debarment.	(iv) The bidder shall not be debarred unless such bidder has been given a reasonable opportunity to represent against such debarment.

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
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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.

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)

Place.....
Date.....

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

Place.....
Date.....

Witness 1:

(Name & Address): _____

Witness 2:

(Name & Address): _____

(Signature of the applicant duly authorized)

Date: _____

Stamp: _____

BASIC ENGINEERING DESIGN DATA**1. GENERAL INFORMATION**

- 1.1. All construction shall conform to the latest edition of the applicable sections of ASME, ASTM, IEEE, NFC, TEMA, AISI, NEMA, AISC, ACI, OSHA, UBE and other governing Codes or standard practices. Any other equivalent and acceptable Code of Standard practice may be adopted with the approval of the LICENCEE. In addition, the following state/local Codes/laws shall supplement:

I.	Pressure Vessels	ASME Sec VIII Div I
	Pressure Vessel Dished Ends	Indian Standards IS 4049
II.	Boilers	Indian Boiler Regulations (IBR) Act.
III.	Buildings & Structural	Relevant Indian standard. (BIS standard)
IV.	Electricity	Indian Electricity Rules.
V.	Sanitary	Relevant Indian standard. (BIS standard)
VI.	Safety/Plant Layout	a) Manual of Chief Inspector of Explosives, Govt. of India. b) OISD (Oil Industry Safety Directorate) norms.
VII.	Water Pollution	Relevant Indian Standard (CPCB norms)

- 1.2. The following Unit of Measurement shall be followed:

- a) Temperature : °C
- b) Pressure : kg/cm²g
- c) Volume : m³
- d) Volume (gas) : Nm³
- e) Flow (liquid) : m³/hr and kg/hr
- f) Flow (gas) : Nm³/hr and kg/hr

- g) Flow (steam) : kg/hr
- h) Velocity : m/s and km/hr
- i) Viscosity : cP
- j) K. Viscosity : cSt
- k) Level : mm
- l) Heat : kcal
- m) Heat Duty : mmkcal/hr
- n) Composition (gas) : vol% or mol%
- o) Composition (liquid) : Wt%
- p) Power : KW

The item numbering system for the Unit shall be as follows:

All major equipment shall be identified by starting with the Unit No. and then numbered serially starting with 1 for each equipment category pre-fixed with letters as shown hereunder:

Reactor	R
Column	C
Vessel/ Drum	B
Furnace	F
Pump	P
Compressor	K
Exchanger/ Reboiler/ Cooler/ Condenser	E
Air Cooler	AC
Ejector	J
Filter	G
Tank	T
Motors for pump	PM
Motors for compressor	KM
Turbine for compressor	KT
Pressure Safety Valve	PSV

Dryer	DR
Mixer	MX
Miscellaneous	M

1.3. Instruments shall be numbered according to ISA practice followed by last two digit of corresponding P & ID and then the serial number.

1.4. The following symbols shall be adopted for use in flagging of the process flow diagram:

Flow : kg/hr
Pressure : kg/cm²g
Temperature : °C
Duty : MMKcal/hr
Stream number : to be indicated in numeric

1.5. Facilities shall be provided for the maximum economic generation of super-heated high-pressure steam for use within the Unit and export. However, export of steam at the cost of excess fuel firing in the unit is not desirable. For steam generation facilities within the unit, BFW will be provided at the B/L as per the requirement. However, at the time of design basis, if availability of BFW from other sources is found to be inadequate, LICENSOR will be asked to include Deaerator, pumps and other facilities like chemical injection, etc.

1.6. For proprietary items considered in the scope of supply, sufficient explanation should be given in Basic Design Engineering Package.

1.7. Double block valves and spectacle blinds shall be provided in all lines leaving or entering the Unit.

2. **EQUIPMENT DESIGN INFORMATION**

2.1 Columns/ Vessels/ Reactors:

(a) Design pressure:

i) Factors like pump shut-off conditions, pressure drops in recycle loop, etc. should be considered for fixing design pressure. Pump shut-off shall be calculated at 1.25 x rated

head + max. suction pressure.

- ii) When operating pressure is less than or equal to 100 kg/cm², design pressure shall be equal to normal operating pressure plus 10% (min. 2.0 kg/cm²). When operating pressure is more than 100 kg/cm², design pressure shall be equal to normal operating pressure plus 5% (min 10 kg/cm²) whichever less is.
 - iii) All steam handling / condensate vessels shall be designed for full vacuum conditions also.
 - iv) All vessels/ columns subjected to internal pressure should be designed to withstand a minimum external pressure of 0.175 Kg/cm² abs.
 - v) Minimum design pressure for equipment connected with flare header should be 3.5 kg/cm²g.
- (b) Design temperature:
- i) Design temperature for unfired pressure vessels and interconnecting piping will in general be equal to maximum anticipated operating temperature plus 30 °C if vessel operates between zero to 400 °C and 28 °C if vessel operates above 400 °C. If it operates below zero deg. temp, LICENSOR should follow their own philosophy.
 - ii) Conditions like steam-out will be considered while specifying design temperature (for handing out vessel to maintenance).
 - iii) For vessels operating at ambient temperature, 65 °C will be used for mechanical design.

Note:

When different metal temperature can be predicted to occur for different zones of a vessel during operation then different temperature should be indicated on the sketch and different temperature should be taken into account for designing the vessel.

- (c) The column internals can be trays or packing. Preferred type of trays shall be valve trays (stainless steel).

2.1. Pumps/ Compressors/ Blowers:

Pumps

- a) Spare philosophy: 100% spare for continuous service and critical Intermittent service

- b) Drive of pumps: Electric Motor
- c) Over design: As per LICENSOR'S practice (For critical put 120% of normal flow and head)

Compressors

- a) Spare philosophy
For reciprocating compressors: Provide 2 of 100%
For Centrifugal: No spare
- b) Drive
Recycle Compressor: Steam turbine with back pressure type
Make up Compressor: Electric Driven with stepless control philosophy
- c) Over design: 125% of normal flow

Start-up Blowers and Compressors

- a) Spare philosophy: No spare
- b) Drive: Electric Motor
- c) Over design: As per LICENSOR'S practice

ID and FD fans

- a) Spare for ID fan: No
- b) Spare for FD fan: Yes
- c) Drive: Motor
- d) Over design: As per LICENSOR'S practice
- e) Control: Variable speed (preferred)

2.2. Heat Exchangers/Air Coolers/Condensers/Reboilers:

- (a) Following general guidelines shall be followed:
 - Air-cooling shall be maximized for which the cut-off temperature of process streams shall be 55°C. However, when further trim-cooling by water is necessary, the cut-off temperature of process stream shall be 65°C. Dry bulb temperature 42°C to be considered for Cooler sizing. However, these guidelines can be relaxed to avoid small trim cooler or air cooler.

- Preferred straight tube length is 6 meters/ 9 meters, 6 meters for U-tube and 12 meters for fixed tube sheet exchanger
 - Preferred size for Carbon Steel and low alloy (up to and including 5 Cr, 1/2 Mo) tubes is 20 x 2 mm and 25 x 2.5 mm.
 - Preferred size for brass and admiralty tubes is 20 x 2 & 25 x 2.5 mm. respectively.
 - Preferred size for high alloy (above 5 Cr 1/2 Mo and Austenitic) tube is 20 & 25 x t to suit design.
 - Preferred tube pitch is square pitch in fouling services
 - Maximum allowable bundle weight – 35 MT
 - Maximum allowable bundle diameter 1400 mm for 6 m and 1200 mm for 9 m tubes
- (b) For shell and tube heat exchangers,
- Design fouling factor, Fouling Resistance, $\text{m}^2 \cdot \text{hr} \cdot ^\circ\text{C}/\text{Kcal}$ for
 - Cooling water : 0.0004
 - Other services : as per TEMA/ LICENSOR's standards
 - **Corrosion allowance**
 Unless otherwise specified corrosion allowance for all exchangers should be as per TEMA standard.
- (c) Design pressure
- Maximum anticipated operating pressure plus 10% or 2.0 kg/cm^2 , whichever is greater. The minimum design pressure is 3.5 kg/cm^2 .
 - Exchangers that are subject to pump shut off, in general, shall have design pressure equal to maximum shut off pressure.
 - In case exchanger is operating under vacuum or in steam service, design for full vacuum.
 - The sheets and tubes of feed/ effluent exchanger in high pressure service need not be designed for full design pressure of the shell and / or channel provided these components can never experience these conditions. They should be designed for maximum differential pressure expected. Start-up, shutdown and emergency depressurization condition should be considered. In addition to above criteria design pressure of an exchanger should reflect the location and set pressure of the safety relieving valve protecting it.

(d) Design temperature

- Exchanger operating between zero to 400 °C shall be designed for the maximum anticipated operating temperature plus 28 °C but not less than 65 °C.
- In case of possible loss of flow of cooling media, the tubes, tube sheets and floating head may be subjected to full inlet temperature. These components should be designed for maximum anticipated temp. of hotter medium.
- Exchangers operating at zero deg. C and below should be designed for minimum anticipated temperature.

(e) Over-design factor

- Exchangers/ Coolers: As per LICENSOR's practice.
- Air cooler: 120% normal flow or duty whichever is higher
- Condensers/ Reboilers: 115% on duty/flow rate whichever governs

2.3. Fired Heaters

Fired heaters shall be designed for maximum efficiency. Air pre-heating is preferred to steam generation for heat recovery to improve furnace efficiency. Heaters shall be provided for gas/ fuel oil firing. Each burner shall have a pilot gas burner. Atomizing steam shall be MP steam. Soot blowers shall be pneumatic, locally operated, retractable with auto-manual sequential control. Steam air decoking facility shall be preferred if necessary.

Heater design shall be as per API-560 (Latest edition).

2.4. Stack Height limitation:

Minimum stack height should be worked out using formula: $H = 14 \cdot (Q)^{0.3}$, or 60 meters, whichever is higher.

H = height of stack in meters

Q = SO₂ emissions in kg/hr.

2.5. Instruments

Unit operations shall be controlled from a central control room common to other units and shall be micro-processor based distributed digital control system. Interlocks shall be PLC type. 2 out of 3 voting logic is envisaged for critical interlocks. LICENSOR shall advise on the P&I Diagram the field switches which are required to be triplicated for this

purpose. Control valves shall have bypass and block valves shall be provided. Hand-wheels shall be provided wherever no bypass valves are envisaged.

For field instruments, differential pressure & pressure transmitters shall be electronic, smart type 2-wire system, (4-20) ma output signal with integral output meter. Differential pressure transmitters shall be supplied with 3-way manifold. Displacer type level instrument (if any) shall be electronic, smart type with supply & output meter. All field instruments shall be suitable for hazardous area.

In case of very critical services, hardwired instruments shall be provided as standby unit. However, information of these parameters shall be available on console also. Hardwired dedicated Annunciators shall be provided for critical alarms/ shutdown parameters.

Advanced control strategies may be adopted at a later date. LICENSOR will, based on experience, indicate additional tapings that might be required for advanced control.

Flow Indication

Flow indications with totalizer for the following streams entering/ leaving the battery limit shall be available in the Control Room over and above those required for process control of the unit:

- Feed to the unit
- Products from the unit
- Fuel Gas/ Fuel Oil to the unit
- Hydrogen rich gas to the unit
- Hydrogen for start-up
- Hydrogen to the unit
- Steam to unit
- BFW to unit
- Steam from unit

Flow indications of the following utility streams shall be available in the control room:

- HP/ MP/ LP steam to/ from the unit
- Cooling water to the unit
- Condensate generated within the unit going to the deaerator
- Condensate from other units, if any

- Nitrogen to the unit
- BFW to the unit

Analyzers

On-line analyzers shall be provided as required. LICENSOR shall furnish a list of various on-line analyzers (essential and optional) with specific requirements, if any, and with recommended vendor list.

On-line analyzers for Oxygen, CO, NO_x and SO_x to be provided for analysis in the flue gas.

2.6. Pressure Relief / Blow Down/ Flare System/ Effluent

Pressure relief valves in Hydrocarbon/ acid gas service shall discharge to a closed relief header routed through a knock-out drum to the refinery flare headers. Flare header back pressure at battery limit is as below:

	Unit	Normal	Max
Hydrocarbon flare	kg/cm ² g	0.3	1.7
Acid flare	kg/cm ² g	0.5	1.5

- In case of the safety valves, which are designed to release to the atmosphere, steam snuffing facility which can be operated from ground level shall be provided. All drains of safety valves shall be connected to the Blow down vessel.
- Double safety valves shall be provided with isolation valves, such that on-stream isolation and maintenance of a safety valve is possible without affecting unit operational safety requirement. This shall be done for operation failure cases only. Where safety valve provision is guided by fire case, single safety valve with isolation valve (locked open) shall be provided.
- All safety valves shall normally have Carbon steel Body with stainless steel trim. Other trim material can be considered if any particular service demands a different material. Bronze or Cast iron bodied valves shall not be used. LICENSOR shall furnish sufficient information related to the Unit for design of flare facility by others.
- Process waste water is to be routed to Oily Water Sewage (OWS) by gravity and Boiler Blow Down is to be routed to flash drum for condensate recovery.

- Process drain will be routed to either OWS or, Closed Blow Down (CBD) vessel inside battery limit.
- Spent caustic shall be degassed within unit battery limit (Blow Down Sump) and pumped out to Caustic Oxidising plant/ ETP on requirement.
- Low NO_x burners to be provided in fired heater for NO_x emission control.

Gaseous emission shall be within the following stipulation:

Component	Limit Value
Particulate matter, max	5 mg/Nm ³ for gaseous fuel and 50 mg/Nm ³ for liquid fuel
Carbon monoxide, max	100 mg/ Nm ³ for gaseous fuel and 150 mg/Nm ³ for liquid fuel
NO _x max	250 mg/Nm ³ for gaseous fuel and 350 mg/Nm ³ for liquid fuel
SO ₂ max	50 mg/Nm ³ for gaseous fuel and 850 mg/Nm ³ for liquid fuel

Nozzles to be provided for stack monitoring as per pollution norms.

2.7. SITE AND CLIMATE CONDITIONS

2.1.1. Ambient Conditions:

- (a) Air Barometric Pressure: Average 740 mm Hg
- (b) Site Elevation: 36.6 meters above sea level
- (c) Ambient Temperature:-
 - Minimum Temperature (Winter dry bulb): 2°C
 - Maximum Temperature (Summer dry bulb): 48°C
 - Relative humidity (Normal): 36% @45 °C
 - Relative humidity (Maximum): 90% @45 °C
- (d) Low Ambient Design Temperature:-
 - Minimum Design Metal Temperature (MDMT): 2°C
 - Winterizing Temperature: 2°C
- (e) High Ambient Design Temperature:-
 - Design Dry Bulb Temperature for Air Cooled Exchanger Design: 48°C
 - Design Wet Bulb Temperature to be used for Cooling Tower Design: 29.4°C
 - Relative Humidity to be used for Air Blower and Compressor Design: 90% @48 °C

2.1.2. Precipitation:

(a) Rain Fall

	Hourly	Daily
Maximum Recorded	79.3 mm	250 mm
Maximum Design Rain Fall	120 mm in 1 hour (rainy season is from June to August)	

3. **SPECIAL DESIGN REQUIREMENTS**

- 3.1. All incoming and outgoing lines shall be provided with double isolation block valves with a spectacle blind and a drain.
- 3.2. Block valves of 12" diameter and above shall be gear operated. However, frequently operated valves can be motor operated (in critical service), and indication of valves position should be available in the control room. Shut-down valves should be operable from the control room.
- 3.3. The blow-down from steam drum should be routed to storm water sewer after cooling. Excess quantity, if any, should be drained to storm water sewer after flashing and cooling in a blow-down drum.
- 3.4. Instrument and electrical cables shall be above ground and under-ground respectively inside the unit batter limit.
- 3.5. General HAZOP analyses should be considered in the design of the unit.
- 3.6. LICENSOR will design the furnace with 15% excess air for oil firing.
- 3.7. Overdesign/ Spare philosophy:
As per LICENSOR's practice (to be indicated) unless otherwise stated.
- 3.8. Piping Material Specification:
LICENSOR will furnish its piping standards. However, the P&IDs will be based on our DEC/ EPCs' Piping Material Specifications code and shall be firmed up during design basis finalization meeting.
- 3.9. Requirement of broad Equipment Specification
Following are the constraints in transportation and handling of heavy equipment:
 - a) Maximum Weight of equipment : 850 MT
 - b) Maximum diameter including nozzles / projections : 7.4 meter

- c) Maximum length overall : 45 meter
Licensor should indicate the size/ weight of the ODC (Over-dimensional Consignments) equipment in the data sheet so that proper decision can be taken in advance.

3.10. Noise Level

Maximum noise level generated by any new item of equipment shall be less than 85 dB(A) at a distance of 1 meter.

3.11. Energy Efficiency:

Licensor to utilize latest Technologies for energy savings like Divided Wall Column, Tube inserts in Heat Exchangers, etc.