



**National Aluminium Company Ltd.**  
(A Govt of India Enterprise)  
Smelter & Power Complex,  
Angul - 759145

## **REQUEST FOR EXPRESSION OF INTEREST**

**Identification of Interested Vendors for undertaking the  
Techno-Economic Feasibility Study *Technical Study for  
Upgradation / Revamping of Fume Treatment Plants FTP-1 to  
FTP-4 of  
Smelter Potline, Nalco Nagar Angul 759145***

**Last Date & Time for Submission: within 15 days from the publication in  
NALCO Website**

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|                                                                                                                   | <b>FOR Identification of Interested Vendors <i>TECHNICAL STUDY<br/>FOR UPGRADATION / REVAMPING OF FUME TREATMENT<br/>PLANTS FTP-1 TO FTP-4</i></b> | <b>0</b> | <b>1 of 12</b> |

## 1. Invitation for Expression of Interest

National Aluminium Company Ltd. invites Expression of Interest from reputed and experienced consultants / engineering firms / technology providers / OEMs having proven expertise in the design, study, revamping, upgradation, performance assessment and modernization of Fume Treatment Plants used in aluminium smelters or similar high-temperature industrial gas cleaning systems.

The objective of this EOI is to identify technically competent agencies for carrying out a comprehensive study for upgradation / revamping of existing Fume Treatment Plants FTP-1 to FTP-4 of Smelter Potline.

The selected agency shall study the existing system, identify technological gaps, assess present performance, recommend suitable upgradation measures and prepare a Detailed Project Report along with technical specifications for future implementation.

## 2. Background

The existing FTP-1 to FTP-4 of Smelter Potline were commissioned during the earlier phase of plant operation and are based on older-generation gas treatment technology. With increased requirement for improved environmental compliance, higher potline reliability, better gas evacuation, improved HF adsorption, reduced particulate emission and centralized monitoring, there is a need to carry out a detailed technical study for upgradation of these FTPs.

The existing systems require assessment with respect to filtration area, gas handling capacity, air-to-cloth ratio, fan and blower capacity, pulse cleaning system, alumina handling system, HF adsorption efficiency, duct balancing, emission performance, automation level, condition monitoring and maintainability.

The study shall also consider increased gas volume handling capacity during potline current ramp-up in kA (kAmp), compliance with stringent OSPCB / CPCB norms for HF and dust emission from stacks, and feasibility of FTP revamping without affecting the running pots of the Potline.

The condition of the FTP inlet gas main duct, including visible damage, remaining life assessment and need for repair / replacement, shall be included in the study along with CFD-based gas flow analysis wherever required.

The proposed study shall help in establishing a technically sound and economically viable roadmap for upgrading FTP-1 to FTP-4 at par with latest generation Fume Treatment Plants.

## 3. Objective of the EOI

The objective of this EOI is to shortlist suitable agencies for carrying out a comprehensive technical study for upgradation / revamping of FTP-1 to FTP-4.

The study shall aim to:

1. Assess the present condition and performance of existing FTP-1 to FTP-4.
2. Identify deficiencies and limitations in existing gas handling and fume treatment systems.
3. Evaluate adequacy of existing bag filters, fans, motors, blowers, compressors, ducting, dampers and alumina handling systems.
4. Study the requirement for increased filtration area and enhanced gas evacuation capacity.
5. Assess present HF and particulate emission levels and recommend measures for improvement.
6. Study the requirement for inlet HF analyzer, bag leak detection system and online monitoring.
7. Recommend SCADA integration, IoT-based condition monitoring and predictive maintenance features.
8. Evaluate feasibility of inlet gas cooling / heat exchanger system.
9. Prepare a technically feasible, cost-effective and implementable upgradation plan.

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10. Prepare Detailed Project Report and draft technical specification for future tendering.
11. Study increased gas volume handling capacity during kA (kAmp) ramp-up of the Potline.
12. Assess compliance requirements for stringent OSPCB / CPCB norms for HF and dust emission from stacks.
13. Study the feasibility of revamping / upgradation of FTPs without affecting the running pots of the Potline.
14. Assess damage and condition of FTP inlet gas main ducts, estimate remaining life and recommend repair / replacement, if required.
15. Carry out CFD study for gas flow distribution, duct balancing, pressure drop, suction adequacy and validation of proposed upgradation options.

## 4. Broad Scope of Work

The selected agency shall carry out the following broad activities:

### 4.1 Collection and Review of Existing Data

The agency shall collect and review existing design documents, drawings, P&IDs, GA drawings, equipment specifications, operating data, emission data, maintenance records, breakdown history, stack monitoring data, alumina handling details, fan and motor data, bag filter details and existing automation architecture.

The agency shall also collect and review available FTP inlet gas main duct drawings, inspection reports, damage history, thickness / corrosion records, previous repair details, current ramp-up plans, stack emission data and any existing gas flow / CFD study reports.

### 4.2 Site Survey and Condition Assessment

The agency shall carry out detailed physical inspection of FTP-1 to FTP-4 including bag houses, filter compartments, bags, cages, hoppers, pulse cleaning system, fans, motors, ducting, dampers, compressors, blowers, alumina conveying system, vibrating screens, de-dusting units, electrical and instrumentation systems.

The agency shall assess structural condition, maintainability, accessibility, safety aspects and space availability for future upgradation.

The inspection shall specifically include FTP inlet gas main ducts, duct supports, expansion joints, bends, dampers, access platforms, damaged portions and replacement feasibility while keeping the Potline in operation.

### 4.3 Performance Assessment

The agency shall assess existing performance of FTP-1 to FTP-4 with respect to:

1. Gas flow handling capacity.
2. Gas flow per pot.
3. Pressure drop across ducting and bag filters.
4. Suction adequacy at pot hoods and duct ends.
5. Air-to-cloth ratio.
6. Bag cleaning efficiency.
7. Compressor pressure and pulse cleaning effectiveness.
8. HF emission and particulate emission.
9. Fluoride enrichment in alumina.
10. Fan efficiency and motor loading.
11. Equipment reliability and availability.

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12. Bag failure and leakage pattern.
13. Gas volume requirement and FTP capacity adequacy during kA (kAmp) ramp-up.
14. Stack HF and dust emission performance with respect to OSPCB / CPCB norms.
15. FTP inlet gas main duct condition, damage severity and remaining life.
16. Feasibility of continued FTP operation during revamping without affecting running pots.
17. Gas flow distribution, duct balancing and suction profile through CFD study, wherever required.

#### 4.4 Gap Analysis

The agency shall compare the existing system with latest generation FTP design and identify gaps in the following areas:

1. Filtration area.
2. Gas handling capacity.
3. Fan and motor capacity.
4. Pulse cleaning system.
5. Alumina adsorption and handling system.
6. Emission control capability.
7. Online analyzers and instrumentation.
8. SCADA and automation.
9. IoT-based condition monitoring.
10. Bag leakage detection.
11. Hopper and screen monitoring.
12. Duct balancing and gas distribution.
13. Safety, maintainability and reliability.
14. Gas volume handling capacity for future kA (kAmp) ramp-up condition.
15. Compliance gap with respect to stringent OSPCB / CPCB HF and dust emission norms.
16. FTP inlet gas main duct damage, remaining life and replacement requirement.
17. Feasibility gap for revamping without affecting running pots.
18. CFD-based gas flow, duct balancing and suction distribution gaps.

#### 4.5 Upgradation Feasibility Study

The agency shall study and recommend technically feasible upgradation measures for:

1. Enhancement of filtration area.
2. Addition / modification of bag filter compartments.
3. Replacement / upgradation of filter bags and cages.
4. Upgradation of main exhaust fans, motors and VFD system.
5. Improvement of ducting and damper arrangement.
6. Upgradation of pulse cleaning and compressed air system.
7. Installation of inlet HF analyzer.
8. Installation of bag leak detection system.
9. Installation of differential pressure transmitters.
10. Installation of hopper build-up and level sensors.
11. Installation of vibrating screen choking sensors.
12. Integration of de-dusting units with FTP control system.
13. Provision of intermediate alumina silo.
14. Auto selection and remote operation of alumina extraction system.

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15. Installation of inlet gas cooling system / heat exchanger, if feasible.
16. SCADA integration and predictive maintenance dashboard.
17. IoT-based condition monitoring of critical equipment.
18. Capacity augmentation for increased gas volume handling during kA (kAmp) ramp-up.
19. Revamping methodology and temporary arrangements for execution without affecting running pots of the Potline.
20. Repair, strengthening or replacement of FTP inlet gas main ducts based on damage and remaining life assessment.
21. CFD-based validation of proposed ducting, fan, bag filter and gas balancing modifications.
22. Measures to consistently meet stringent OSPCB / CPCB norms for HF and dust emission from stacks.

#### 4.6 Environmental Compliance Study

The agency shall study the present and future environmental compliance requirements and recommend measures to achieve improved emission performance.

The study shall cover HF emission, particulate emission, fluoride adsorption efficiency, stack monitoring, online analyzer requirement, statutory compliance and future regulatory preparedness.

The study shall specifically evaluate present and future OSPCB / CPCB requirements for stack HF and dust emission and recommend suitable equipment, monitoring and operating measures to ensure sustained compliance.

#### 4.7 Techno-Commercial Evaluation

The agency shall prepare various implementation options along with technical feasibility, estimated cost, shutdown requirement, implementation duration, risk assessment, expected benefits and recommendation.

The options may include:

1. Minimum compliance-based upgradation.
2. Capacity enhancement with bag filter and fan upgradation.
3. Full modernization with automation, IoT and online monitoring.
4. Phased execution plan to minimize potline shutdown impact.
5. Revamping methodology without affecting the running pots of the Potline.
6. FTP inlet gas main duct repair / replacement option based on remaining life assessment.
7. CFD-validated capacity enhancement option for increased gas volume during kA (kAmp) ramp-up.

#### 4.8 Preparation of Detailed Project Report

The agency shall submit a Detailed Project Report containing the recommended upgradation scheme, process design basis, equipment list, layout, P&ID, electrical load list, instrument list, automation architecture, cost estimate, implementation schedule, shutdown plan, risk assessment and draft technical specification for future execution tender.

The DPR shall include CFD study results, gas flow balancing recommendations, kA (kAmp) ramp-up capacity adequacy, FTP inlet gas main duct remaining life / replacement recommendation and execution methodology for revamping without affecting running pots.

#### 4.9 CFD Study, Inlet Duct Assessment and Running Potline Revamp Feasibility

The agency shall carry out CFD study for the existing and proposed FTP system, wherever required, to validate gas flow distribution, duct velocities, pressure drop, suction adequacy at pot hoods and duct

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ends, duct balancing, fan adequacy and capacity under increased gas volume conditions during kA (kAmp) ramp-up.

The agency shall assess the condition of FTP inlet gas main ducts, including damaged portions, remaining life, structural integrity, support condition, replacement requirement and execution feasibility. The study shall also recommend a practical revamping methodology so that implementation can be carried out with minimum disturbance to running pots and Potline operation.

## 5. Expected Deliverables

The agency shall submit the following deliverables:

1. Inception report.
2. Data requirement list.
3. Site survey and condition assessment report.
4. Existing system performance assessment report.
5. Gap analysis report.
6. Gas flow and capacity adequacy report.
7. Bag filter upgradation study report.
8. Fan, blower and compressor adequacy report.
9. Alumina handling and fluoride adsorption study report.
10. SCADA, automation and IoT modernization report.
11. Environmental compliance report.
12. Inlet gas cooling / heat exchanger feasibility report.
13. Option-wise technical feasibility report.
14. Budgetary cost estimate.
15. Implementation and shutdown plan.
16. Risk assessment and mitigation plan.
17. Recommended upgradation scheme.
18. Draft technical specification for execution tender.
19. Final Detailed Project Report.
20. kA (kAmp) ramp-up gas volume and FTP capacity adequacy report.
21. CFD study report covering gas flow distribution, pressure drop, duct balancing and suction adequacy.
22. FTP inlet gas main duct damage assessment, remaining life and repair / replacement recommendation report.
23. Revamping methodology and implementation plan without affecting running pots of the Potline.
24. OSPCB / CPCB compliance action plan for HF and dust emission from stacks.

## 6. Eligibility Criteria

Interested agencies shall meet the following minimum eligibility criteria:

1. The agency should have experience in design, engineering, study, upgradation, revamping or performance assessment of Fume Treatment Plants / Gas Treatment Centres / Dry Scrubbing Systems / Industrial Gas Cleaning Systems.
2. The agency should preferably have experience in aluminium smelter FTP / GTC systems.

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3. The agency should have expertise in bag filter design, gas flow calculation, HF adsorption, alumina handling, emission control, fan and ducting system, SCADA, PLC and instrumentation.
4. The agency should have completed at least one similar assignment in metal, aluminium, power, cement, chemical or any other process industry.
5. The agency should have qualified process, mechanical, electrical, instrumentation and environmental engineers.
6. The agency should have capability to prepare DPR, technical specifications, cost estimate, implementation plan and performance guarantee parameters.
7. The agency should have knowledge of applicable CPCB / SPCB environmental norms and industrial emission control practices.
8. The agency should have capability to carry out CFD analysis / gas flow simulation and remaining life assessment of major FTP ducting systems, either in-house or through qualified associates.

## 7. Documents to be Submitted with EOI

The interested agency shall submit the following documents:

1. Company profile.
2. Details of similar assignments executed.
3. Client certificates / work orders / completion certificates.
4. Technical capability statement.
5. Details of available experts and key personnel.
6. Proposed methodology for carrying out the study.
7. Tentative work plan and schedule.
8. List of software / tools proposed to be used, if any.
9. Experience in aluminium smelter FTP / GTC systems, if available.
10. Financial credentials for the last three years.
11. Any other relevant technical information.
12. Details of CFD software / tools, gas flow simulation capability and credentials for duct condition / remaining life assessment, if available.

## 8. Evaluation of EOI As per Annexure I

The EOI submissions shall be evaluated based on:

1. Relevant experience in FTP / GTC / industrial gas cleaning system.
2. Experience in aluminium smelter or similar process industry.
3. Technical competence and understanding of the assignment.
4. Qualification and experience of proposed experts.
5. Methodology and work plan.
6. Past performance and client feedback.
7. Capability to prepare DPR and tender specification.
8. Overall suitability for the assignment.
9. Capability for CFD study, duct remaining life assessment and planning of revamping without affecting running Potline operation.

Shortlisted agencies may be invited for presentation / technical discussion before issue of tender or Request for Proposal.

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## 9. Tentative Time Schedule for Study

The tentative time schedule for completion of the study shall be as follows:

| Sl. No. | Activity                                         | Time from LOA |
|---------|--------------------------------------------------|---------------|
| 1       | Kick-off meeting and data requirement submission | 1 week        |
| 2       | Site visit and data collection                   | 3 weeks       |
| 3       | Existing system assessment and gap analysis      | 5 weeks       |
| 4       | Technical feasibility and option study           | 8 weeks       |
| 5       | Draft report submission                          | 10 weeks      |
| 6       | Presentation and discussion                      | 11 weeks      |
| 7       | Final DPR and technical specification submission | 12 weeks      |

## 10. Site Visit

The shortlisted / interested agencies may be required to visit the site for understanding the existing system, site constraints, FTP layout, equipment arrangement, ducting, alumina handling system, control system and other relevant facilities.

The site visit shall also include inspection of FTP inlet gas main ducts, damaged portions, duct supports, access constraints and possible temporary arrangements required for revamping while pots remain in operation.

All safety rules and plant entry procedures shall be followed during the site visit.

## 11. General Terms and Conditions

1. Submission of EOI does not confer any right for award of work.
2. National Aluminium Company Ltd. reserves the right to accept or reject any or all EOIs without assigning any reason.
3. The EOI is intended only for shortlisting of technically competent agencies.
4. The detailed tender / RFP may be issued only to shortlisted agencies.
5. The agency shall maintain confidentiality of all plant data, drawings and documents shared during the process.
6. The agency shall not use the information for any purpose other than this assignment.
7. All costs related to preparation and submission of EOI shall be borne by the interested agency.
8. National Aluminium Company Ltd. reserves the right to modify, cancel or extend the EOI process at any stage.

## 12. Submission of EOI

Interested agencies may submit their Expression of Interest along with all supporting documents in sealed envelope / through e-procurement portal / by email as per the details below:

**To:**

Shri Sruti Ranjan Behera  
Deputy General Manager (Potline Services)  
National Aluminium Company Ltd.  
Smelter Plant, NALCO Nagar, Angul – 759145

**EOI Title:** Expression of Interest for Technical Study for Upgradation / Revamping of FTP-1 to FTP-4 of Smelter Potline

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**Last Date of Submission:** [within 15 days from publication in the NALCO Website]

**Contact Person:** Shri Sruti Ranjan Behera, DGM (Potline Services)

**Email:** [sruti.behera@nalcoindia.co.in]

**Phone:** [+91-9437163266]

### 13. Conclusion

The proposed study is intended to establish a clear and technically feasible roadmap for upgradation of FTP-1 to FTP-4 of Smelter Potline. The study shall help in improving fume treatment efficiency, reducing HF and particulate emissions, enhancing equipment reliability, improving gas evacuation capability, enabling centralized monitoring and ensuring compliance with present and future environmental norms.

The study shall also establish capacity adequacy under kA (kAmp) ramp-up, CFD-validated gas evacuation improvements, compliance roadmap for stringent OSPCB / CPCB HF and dust emission norms, and a practical plan for FTP revamping without affecting running pots.

Interested and experienced agencies are invited to submit their Expression of Interest along with credentials and technical capability documents for consideration.

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## ANNEXURE – I

### TECHNICAL EVALUATION MATRIX (Section 8 — Evaluation of EOI)

*Consultancy Services for Upgradation / Revamping of Fume Treatment Plants FTP-1 to FTP-4, Smelter Potline, NALCO Nagar, Angul*

Tender / Enquiry No.: \_\_\_\_\_ Date of Evaluation: \_\_\_\_\_

| Sl.                                     | Evaluation Criterion / Parameter                                                                           | Weight (%) | Max Marks | Bidder A | Bidder B | Bidder C | Documentary Evidence to be Verified                                                  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------|------------|-----------|----------|----------|----------|--------------------------------------------------------------------------------------|
| 1                                       | <b>Relevant experience in FTP / GTC / Industrial Gas Cleaning System</b>                                   | <b>20%</b> | <b>20</b> |          |          |          | <i>Work orders, completion certificates, project data sheets</i>                     |
|                                         | • No. of FTP/GTC/revamping projects designed/executed in last 10 years                                     |            | 8         |          |          |          |                                                                                      |
|                                         | • Scale & complexity of projects (capacity, Nm <sup>3</sup> /hr handled, dry-scrubbing)                    |            | 7         |          |          |          |                                                                                      |
|                                         | • Scope covered — design / engineering / revamp / commissioning                                            |            | 5         |          |          |          |                                                                                      |
| <b>Sub-total — Criterion 1 (Max 20)</b> |                                                                                                            |            | <b>20</b> |          |          |          |                                                                                      |
| 2                                       | <b>Demonstration through VC</b>                                                                            | <b>15%</b> | <b>15</b> |          |          |          | <i>VC presentation deck, recorded demonstration &amp; minutes, Q&amp;A responses</i> |
|                                         | • Technical presentation & demonstration of relevant FTP/GTC/revamp projects and grasp of assignment scope |            | 9         |          |          |          |                                                                                      |
|                                         | • Live demonstration of CFD / analysis tools and quality of responses to committee's technical queries     |            | 6         |          |          |          |                                                                                      |
| <b>Sub-total — Criterion 2 (Max 15)</b> |                                                                                                            |            | <b>15</b> |          |          |          |                                                                                      |
| 3                                       | <b>Technical competence &amp; understanding of the assignment</b>                                          | <b>15%</b> | <b>15</b> |          |          |          | <i>CVs of key experts, technical approach note in bid</i>                            |
|                                         | • Qualification & experience of proposed key personnel (CVs)                                               |            | 7         |          |          |          |                                                                                      |
|                                         | • Understanding of scope, site constraints & deliverables (proposal)                                       |            | 8         |          |          |          |                                                                                      |
| <b>Sub-total — Criterion 3 (Max 15)</b> |                                                                                                            |            | <b>15</b> |          |          |          |                                                                                      |
| 4                                       | <b>Methodology &amp; Work Plan</b>                                                                         | <b>15%</b> | <b>15</b> |          |          |          | <i>Methodology write-up, bar chart / activity schedule, deployment plan</i>          |
|                                         | • Soundness of proposed approach & methodology                                                             |            | 6         |          |          |          |                                                                                      |
|                                         | • Realism of work plan, schedule & activity sequencing                                                     |            | 5         |          |          |          |                                                                                      |
|                                         | • Manpower deployment & resource plan                                                                      |            | 4         |          |          |          |                                                                                      |
| <b>Sub-total — Criterion 4 (Max 15)</b> |                                                                                                            |            | <b>15</b> |          |          |          |                                                                                      |

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| Sl.                                           | Evaluation Criterion / Parameter                                                                                  | Weight (%) | Max Marks  | Bidder A | Bidder B | Bidder C | Documentary Evidence to be Verified                                           |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------|------------|----------|----------|----------|-------------------------------------------------------------------------------|
| 5                                             | <b>Past performance &amp; Client feedback</b>                                                                     | <b>10%</b> | <b>10</b>  |          |          |          | <i>Completion certificates, client feedback letters, references</i>           |
|                                               | • Timely completion record (completion certificates)                                                              |            | 5          |          |          |          |                                                                               |
|                                               | • Client references / performance feedback / repeat orders                                                        |            | 5          |          |          |          |                                                                               |
| <b>Sub-total — Criterion 5 (Max 10)</b>       |                                                                                                                   |            | <b>10</b>  |          |          |          |                                                                               |
| 6                                             | <b>Capability to prepare DPR &amp; Tender Specification</b>                                                       | <b>10%</b> | <b>10</b>  |          |          |          | <i>Sample DPR / spec (redacted), relevant work orders</i>                     |
|                                               | • Demonstrated DPR / feasibility-report preparation capability                                                    |            | 5          |          |          |          |                                                                               |
|                                               | • Experience in preparing tender / technical specifications                                                       |            | 5          |          |          |          |                                                                               |
| <b>Sub-total — Criterion 6 (Max 10)</b>       |                                                                                                                   |            | <b>10</b>  |          |          |          |                                                                               |
| 7                                             | <b>Capability for CFD study, duct remaining-life assessment &amp; revamping without affecting running Potline</b> | <b>15%</b> | <b>15</b>  |          |          |          | <i>CFD software licences, past CFD reports, RLA methodology, phasing plan</i> |
|                                               | • CFD modelling capability — tools, licences & in-house expertise                                                 |            | 5          |          |          |          |                                                                               |
|                                               | • Remaining-life / structural-integrity assessment methodology                                                    |            | 5          |          |          |          |                                                                               |
|                                               | • Revamp planning with minimal shutdown / running-potline continuity                                              |            | 5          |          |          |          |                                                                               |
| <b>Sub-total — Criterion 7 (Max 15)</b>       |                                                                                                                   |            | <b>15</b>  |          |          |          |                                                                               |
| <b>TOTAL TECHNICAL SCORE (Max 100)</b>        |                                                                                                                   |            | <b>100</b> |          |          |          |                                                                               |
| <b>Technical Score (%)</b>                    |                                                                                                                   |            |            |          |          |          | <i>= Total ÷ 100</i>                                                          |
| <b>Qualifying Status (Cut-off ≥ 70 marks)</b> |                                                                                                                   |            |            |          |          |          | <i>Min. 70% (70 marks) to be techno-commercially responsive</i>               |

## NOTES / EVALUATION PROTOCOL

1. Enter marks only in the shaded (yellow) Bidder A/B/C cells, against each sub-criterion, up to the Max Marks shown in the 'Max Marks' column.
2. Marks to be awarded per the Scoring Guidelines (Excellent / Very Good / Good / Average / Poor bands) with a recorded one-line justification for each score.
3. Sum the sub-criterion marks to obtain the criterion sub-total; the sum of all sub-totals gives the Total Technical Score (out of 100).
4. Minimum qualifying technical score = 70 marks (70%). Bidders scoring below this are technically non-responsive and shall not be considered for price opening.
5. For QCBS award, combine with the financial score as: Composite = 0.70 × Technical% + 0.30 × Financial% (adjust weights per approved DoP / tender conditions).
6. Each evaluator to sign the score sheet; the committee shall consolidate averaged/consensus scores. Evaluation to be recorded in an e-Office note for approval.

## SCORING GUIDELINES

Award marks as a percentage of the Max Marks for that sub-criterion, using the band that best describes the documented evidence.

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| Rating Band | % of Max Marks | Descriptor                                                                                                                   |
|-------------|----------------|------------------------------------------------------------------------------------------------------------------------------|
| Excellent   | 90 – 100%      | Fully meets and demonstrably exceeds requirement; strong, directly comparable credentials with verifiable documentary proof. |
| Very Good   | 75 – 89%       | Meets requirement comprehensively with directly relevant experience/credentials; minor gaps only.                            |
| Good        | 60 – 74%       | Meets requirement adequately; relevant but limited depth, scale or directly comparable experience.                           |
| Average     | 40 – 59%       | Partially meets requirement; generic or indirectly relevant experience; notable gaps.                                        |
| Poor        | 0 – 39%        | Does not meet requirement; little/no relevant evidence, or unsubstantiated claims.                                           |

## WEIGHTAGE SUMMARY

| Criterion                                        | Weightage (%) | Remarks                |
|--------------------------------------------------|---------------|------------------------|
| 1. FTP/GTC/Gas-cleaning experience               | 20%           | Core capability        |
| 2. Demonstration through VC                      | 15%           | Live capability check  |
| 3. Technical competence & understanding          | 15%           | Team + scope grasp     |
| 4. Methodology & work plan                       | 15%           | Delivery approach      |
| 5. Past performance & client feedback            | 10%           | Track record           |
| 6. DPR & tender-specification capability         | 10%           | Deliverable capability |
| 7. CFD / RLA / revamp without potline disruption | 15%           | Specialist capability  |
| <b>TOTAL</b>                                     | <b>100%</b>   |                        |

|  | DOCUMENT TITLE                                                                          | REVISION | DOC. PAGE |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------|-----------|
|                                                                                    | FOR TECHNICAL STUDY FOR UPGRADATION / REVAMPING OF FUME TREATMENT PLANTS FTP-1 TO FTP-4 | 0        | 13 of 12  |