



**Tender Document for Operation and  
Maintenance of 400KLD Sewage  
Treatment Plant (STP) at IISER TVM  
Campus Vithura,  
Thiruvananthapuram**

**NIT No: IISER-T/1996/28/25-26 dated 23/10/2025**



INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH  
THIRUVANANTHAPURAM

*(An autonomous institution under the Ministry of Education, Government of India)*

Indian Institute of Science Education and Research (IISER), Thiruvananthapuram is intending to take up the work of “Operation and Maintenance of 400KLD Sewage Treatment Plant (STP) at IISER TVM Campus Vithura, Thiruvananthapuram for a period of one year.” IISERTVM desires to engage specialist agencies with experience in operating and maintaining such plants running in MBBR technology. The agency should have at least 10 year experience in the field of Construction, Operation and maintenance of large sewage treatment plants. The agency shall be currently running at least two plants of capacity 100 KLD or above successfully.

**Section 1. PARTICULARS OF WORK**

1. Name of Work:- **Operation and Maintenance of 400KLD Sewage Treatment Plant (STP) at IISER TVM Campus Vithura, Thiruvananthapuram for a period of one year**
2. PAC :- **Rs.68,86,225/-**
3. EMD :- **Rs.1,37,725/-**
4. Time period : **One year**
5. Validity of tender : **90 days** from the opening of tender.
6. Date of pre – bid meeting if any : **06/11/2025**
7. Last date of submission of e-tender : **13/11/2025**
8. Date of opening of eligibility document technical bid : **14/11/2025**
9. Date of opening of the Financial bid of eligible contractors will be updated in CPP portal

## **Section 2. ELIGIBILITY CRITERIA**

### **2.1 Experience:**

Tenderers who fulfill the following criteria are eligible to submit the Eligibility document Technical bid- (Cover 1) and Financial bid (Cover 2).

Tenderers who have experience of having successfully completed similar works as detailed below during the last 5 (Five) years ending last day of the month previous to the one in which applications are invited:-

- a. The applicant should have successfully completed Operation and maintenance contract of at least one Sewage Treatment Plant/Effluent treatment plant of 100 KLD or more capacity for a period of one or more years continuously in a single work order.
- b. The applicant should accept and ready to deploy Operation and Maintenance team with essential educational qualification and experience in O&M of STP (MBBR Technology) as indicated in the Letter of Transmittal.
- c. Bidders (Contractors/ Companies) are required to have a registered office in Kerala; documentary proof of the same should be submitted with the bid Or the bidders (Contractors / Companies) should have proven experience in executing similar types of works in any Government organizations situated in Kerala, documentary proof of the same should be submitted with the bid.

**“Similar work”** for this clause means **“Operation and Maintenance of Sewage Treatment Plant/ Effluent Treatment Plant of 100KLD capacity”**. The following documentary proof shall be scanned and uploaded.

1. Completion certificates in case of works carried out for Government department. The certificate should have been issued by an officer not below the rank of Executive Engineer.
2. Completion certificate and TDS in case of works carried out for private parties.

The completion certificate should have been issued by the Project Manager or equivalent officer for other works.

### **2.2 Interested tenderers can view and submit the e-tender in the following order through the CPP Portal.**

**A. Envelope I – Eligibility application (Technical Bid)** shall be uploaded with

- 1) EMD as prescribed in this document.

- 2) All necessary supporting documents as prescribed in this document.

**B. Envelope II – Financial bid** shall be uploaded as Price Bid BoQ

### **Section 3 PROCEDURE FOR VIEWING AND SUBMISSION OF e-TENDER**

3.1 Tender Documents may be downloaded from Central Public Procurement Portal <https://etenders.gov.in/eprocure/app>. The bidders who have not enrolled / registered in e- procurement should enroll / register before participating through the website <https://etenders.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at “Help for contractors”. [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this eProcurement Portal”. Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type ‘IISERTVM’. Thereafter, Click on “GO” button to view all IISERTVM tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://etenders.gov.in/eprocure/app> as per the schedule attached.

#### **Instructions for submission of online bid**

- i. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL:<https://etenders.gov.in/eprocure/app> by clicking on “Online Bidder Enrollment”. Enrolment on the CPP Portal is free of charge.
- ii. As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
- iii. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- iv. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.)
- v. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective “My

Tender” folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document.

- vi. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.
- vii. Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender document / schedule and generally shall be in PDF / XLS formats as the case may be. Bid documents may be scanned with 100 dpi with black and white option.
- viii. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Documents” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.
- ix. The tenders will be received online through portal <https://etenders.gov.in/eprocure/app>. All the technical/ Eligibility related documents should be uploaded in Technical bids in pdf format for evaluation purpose.
- x. Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission date and time. Bidder will be responsible for any delay due to other issues. ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- xi. Scanned copy of the Demand Draft obtained from the nationalized/scheduled bank for an amount of **Rs.1,37,725/-** towards Earnest Money Deposit (EMD) drawn in favour of **IISER TVM** and payable at Trivandrum. EMD will be accepted

only in the form DD /SBI Collect/FD/Bank Guarantee. EMD shall be in favour of IISER TVM payable at Thiruvananthapuram. Any other forms other than that specified will not accepted. Original EMD in the form of DD/FD/Bank Gaurantee shall be submitted to the office of “Project Engineer Cum Estate Officer (I/C), IISER TVM, Maruthamala P.O, Vithura, Thiruvananthapuram, Pin:695551 on or before last date of submission of bid. Failing which the tender shall be rejected. IISER TVM will not be responsible for any delay/loss during postal transit.

- xii. A standard BOQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the detail with their respective financial quotes and other details (such as name of the bidder). If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- xiii. The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- xiv. The Tender Inviting Authority will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues.
- xv. The uploaded tender documents become readable only to public view after the tender opening by the authorized bid openers.
- xvi. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- xvii. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

### Assistance to bidders

- i. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- ii. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

3.2 The tender shall be submitted through the above e-Tender website as a two envelope tender.

e- Envelope 1 (application for eligibility) shall be uploaded with:

- Letter of transmittal in the enclosed format.
- Scanned copy of the Demand Draft obtained from the nationalized/scheduled bank for an amount of **Rs.1,37,725/-** towards Earnest Money Deposit (EMD) drawn in favour of **IISER TVM** and payable at Trivandrum / SBI collect chellan/Bank Guarantee/FD.
- Details regarding experience.

The following documents in support of experience shall be uploaded with the application for eligibility.

1. Details of similar works carried out in the past in Form – ‘B’ enclosed
2. Details of works in progress in Form – ‘C’ enclosed
3. Performance report of works referred to in form ‘B’ in Form – ‘D’ enclosed
4. Details regarding the structure of the organization in Form - ‘E’ enclosed
5. GST Registration Certificate
6. Letter of Transmittal
7. Detailed Technical Proposal for the scope of work given in the Annexure 1:
  - a) Overall plan pertaining to the Operation and Maintenance of 400 KLD STP at IISER TVM.
  - b) Schedule for Operation and Maintenance of 400 KLD STP at IISER TVM. (The minimum periodicity is stipulated in the specification)
  - c) Labour and material management plan showing the proposed number of men and material to be engaged by the contractor for Operation and Maintenance of 400 KLD STP at IISER TVM.
  - d) Quality control and Quality assurance plan for superior O&M.
  - e) Detailed calculation and tentative schedule of quantities for chemicals, proposed to be used in the work.
  - f) List of materials proposed to be used.
  - g) Documentary proof of bidder’s (Contractors/ Companies) registered office in Kerala Or proven experience in executing similar types of works in any Government organizations situated in Kerala.

### 3.3. e-Envelope 2 shall contain

- Price bid BoQ - The spread sheet containing the Bill of Quantity can be downloaded from the above web site and the same shall be

uploaded to the e-Tender website after filling the rates. The file name of the spread sheet document which is downloaded from the e-Tender web site should not be changed at any case.

#### Section 4. OPENING OF e-TENDERS

- 4.1 e-Tenders can be uploaded in the e-tender website till the stipulated date and time of submission.
- 4.2. Tender Documents uploaded without valid EMD shall be summarily rejected.
- 4.3. The e-Envelope 2 of only those tenderers who qualify as per the eligibility criteria will be opened on a date which will be updated in CPP portal later.

#### Section 5 . EVALUATION OF APPLICATIONS FOR ELIGIBILITY

- 5.1 The applications received along with the required EMD shall be evaluated for eligibility to take part in the tendering process in two stages.
- 5.2 Stage 1 - The applications (Technical) bids will be evaluated by a Committee for conformity to the eligibility criteria prescribed in 2.1 to 2.2 and other supporting documents as mentioned in the Cover 1.
- 5.3 Stage 2 - If required, the Committee will verify the credentials and performance of the contractor by Site inspection and/or conduct independent enquiry with the clients to whom the contractor has executed the similar nature of work. Further, the committee will invite eligible bidders who have qualified in the Stage 1 to present their technical proposal.
- 5.4. The Committee will shortlist the qualified bidders by the following scoring method and recommend opening the financial bids of those who secured minimum marks.

Sl. no	Eligibility Criteria	Max Marks	Evaluation: Scoring by weighted average method
A	Previous Experience in O&M of STP/ETP The Contractor shall clearly indicate the completed works to be considered for evaluation for eligibility and the same need to be indicated in the Letter of Transmittal.	20	i) 12 marks for experience in O&M of 100 KLD STP or more with Technology other than for a minimum of one-year continuous contract period ii) 16 marks for experience in O&M of 100 KLD STP/ETP or more with SBR/MBBR Technology for a minimum of one-year continuous contract period iii) 20 marks for experience in O&M of 200 KLD STP/ETP or more with SBR/MBBR Technology for a minimum of one year continuous contract period
B	Performance of work (Quality) Evaluation based on Performance Certificate submitted for the works indicated in	10	Outstanding – 10 marks Very Good – 8 marks Good – 5 marks Fair / Satisfactory – 3 marks

	the Letter of Transmittal and/or based on site inspection or enquiry with client																					
C	Technical Proposal submitted by the contractor for O&M of 400KLD STP at IISERTVM Vithura.	70	<table><tr><th>Evaluation</th><th>Marks</th></tr><tr><td>a) Overall plan</td><td>a) 5</td></tr><tr><td>b) Manpower schedule</td><td>b) 20</td></tr><tr><td>c) Technical proficiency of the proposed manpower to be deployed</td><td>c) 15</td></tr><tr><td>d) Material schedule</td><td>d) 15</td></tr><tr><td>e) Tools / Plants / Equipment schedule</td><td>e) 10</td></tr><tr><td>f) QA / QC</td><td>f) 10</td></tr><tr><td>g) SoP / Checklist</td><td>g) 20</td></tr><tr><td>h) Innovative methods / Add-on services</td><td>h.) 5</td></tr></table> The maximum marks for the technical presentation will be 100 and the weightage will be 70	Evaluation	Marks	a) Overall plan	a) 5	b) Manpower schedule	b) 20	c) Technical proficiency of the proposed manpower to be deployed	c) 15	d) Material schedule	d) 15	e) Tools / Plants / Equipment schedule	e) 10	f) QA / QC	f) 10	g) SoP / Checklist	g) 20	h) Innovative methods / Add-on services	h.) 5	
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g) SoP / Checklist	g) 20																					
h) Innovative methods / Add-on services	h.) 5																					

To qualify, the applicant must secure at least 60% (sixty percent) marks in each one of the above criteria and 70% (Seventy percent) marks in aggregate.

5.5 The Indian Institute of Science Education and Research Thiruvananthapuram reserves the right to restrict the list of eligible contractors to any number deemed suitable.

5.6 Even though an applicant may satisfy the specified criteria, he would be liable to disqualification if he has:

1. Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the application for eligibility.
2. Record of poor performance such as, slow progress of work, abandoning of work, not properly completing the contract, or financial failures/ weaknesses etc.

5.7 A list of eligible applicants whose financial bids will be opened shall be prepared and all concerned shall be intimated.

5.8 Earnest Money Deposit (EMD)

The Earnest Money of the successful Tenderer will be taken as part of the Security Deposit as stipulated in Clause 1A of "CPWD GCC for maintenance works".

5.9 The employer reserves the right to accept or reject any application and to annul the qualification process / e-Tender process and reject all applications at any time without assigning any reason or incurring any liability to the applicants.

## Section 6 INFORMATION AND INSTRUCTIONS TO APPLICANTS

### 6.1 Definitions:

The following words and expressions have their meaning here by assigned to them.

1. EMPLOYER means IISER TVM, acting through the Project Engineer cum Estate Officer (I/C).
2. APPLICANT means individuals, proprietary firms, firm in partnership, limited company – private and Public Corporation
3. Engineer-in-charge means Project Engineer cum Estate Officer (I/C) or any other authorized person by him.
4. Tender means “**e-Tender**” which will be submitted online through dedicated website.

### 6.2 Information and Instructions

1. The applicant is advised to visit the site of work at his own cost and examine it and its surroundings and collect all information that he considers necessary for proper assessment of prospective assignment.
2. All information called for in the enclosed forms should be duly filled, signed, scanned and uploaded along with the e-Tender. If additional information needs to be uploaded in a separate document, reference to the same should be given against respective columns. Such separate documents shall be chronologically uploaded in the e-Tender website. If information is ‘nil’ it should also be mentioned as ‘nil’ or ‘no such case’. If any particulars/query is not applicable in case of the applicant, it should be stated as ‘not applicable’.
4. The applicants are cautioned that not giving complete information called for in the application forms required, not giving it in clear terms or making change in the prescribed forms or deliberately suppressing the information may result in the applicant being summarily disqualified.
5. The applicant may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. However the applicants are also advised not to upload superfluous/ additional information beyond the requirements of the Bid. No information will be entertained after the application is submitted, unless it is called for by the Institute
6. Applications made by email, fax, and post or by person will not be considered
7. Clarifications, if any, or any additional information needed may be requested for in the Pre bid meeting. The clarifications given and additional information furnished by IISER TVM during pre-bid meeting will form part of the contract. The minutes of pre-bid meeting, corrigendum and Addendums will be uploaded in the e-Tender website.
8. Documents submitted in connection with the tender will be treated as confidential and will not be returned.
9. Originals of all the scanned and uploaded documents as specified shall have to be submitted by the lowest tenderer within a week physically in the office of Project Engineer cum Estate Officer (I/C), IISER TVM.
10. Contractor can upload documents in the form of PDF format. The size of individual file should not exceed more than 5MB.
11. Contractor must ensure to quote rate of each item.

12. Tenderers are requested to comply following instructions:
  - After submission of the online bid the contractor can re-submit revised online bid any number of times but before last date and time of submission of tender as notified.
  - While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.
13. The rate (s) must be quoted in decimal coinage. Contractors must ensure to quote rate of each item. The column meant for quoting rate in figures appears in Cyan colour.
14. The tender submitted shall become invalid if:
  1. The tenderer is found ineligible.
  2. The tenderer does not upload all documents as stipulated in the tender document.
  3. If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically by the lowest tenderer in the office of Project Engineer cum Estate Officer (I/C), IISERTVM.
  4. The tenderer does not deposit the original EMD (Original in the form of Demand Draft/FD /Bank guarantee) within stipulated date of submission of bid.
15. No intimation shall be given to the lowest tenderer for submission of documents in the Office of The Project Engineer cum Estate Officer (I/C), IISER TVM.

### 6.3 Authority to sign the application:

1. If an individual makes the application, it shall be signed by him above his full type-written name and current address.
2. If a proprietary firm makes the application, it shall be signed by the proprietor (with seal) above his full typewritten name & the full name of his firm with its current address.
3. If the application is made by a firm in partnership, it shall be signed (with seal) by all the partners of the firm above their full typewritten names and current addresses or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed along with current addresses of all the partners of the firm shall also accompany the application.
4. If a limited company or a corporation makes the application, it shall be signed by a duly authorized person holding power of attorney for signing the application, in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation may be required to furnish satisfactory evidence of its existence. The applicant shall also furnish a copy of the Memorandum of Articles of association duly attested

by a Public notary.

#### **6.4. Clarification on tender document.**

1. A prospective Tenderer requiring any clarification on the Tender Document may send their queries through email id. [pe@iisertvm.ac.in](mailto:pe@iisertvm.ac.in). Addressed to Project Engineer cum Estate Officer (I/C), IISER TVM at Trivandrum up to the date of pre-bid meeting. All clarifications will be provided along with the minutes of pre-bid meeting. No further communication regarding clarification/queries will be entertained after the pre-bid meeting.

#### **6.5. Pre-bid meeting.**

The Tenderer or his authorized official representative is invited to attend a Pre-bid Meeting with the tender inviting authority at his office [i.e, office of Project Engineer Cum Estate Officer (I/C), IISER TVM] on **06/11/2025 at 11.00 AM**. The purpose of the Meeting will be to clarify issues and to answer questions on any matter that may be raised at that meeting. Non-attendance of the Pre-bid Meeting will not be a cause for disqualification of a Tenderer.

#### **6.6. Amendment to tender documents**

Before the deadline for submission of tenders, the tender document may be modified by issue of addenda. Any Addendum issued shall be part of the Tender Documents and shall be uploaded in the e-Tender website only. To give prospective Tenderers reasonable time in which to take the Addenda into account in preparing their tenders, extension of the deadline for submission of Tenders may be given as necessary.

#### **6.7 Instructions for filling up the forms B, C, D, E & E1**

##### **1. Information about works**

1. List of all works of similar class successfully completed during last the 5 years in Form – B
2. List of projects under execution or awarded in Form – C
3. Particulars of completed works and performance of applicant shall be duly authenticated / certified by an officer not below the rank of Executive Engineer in case of Government works or the Project Manager or an equivalent officer in case of non-governmental works separately for each work in Form - D

## **2. Information about the organization**

Applicant is required to submit the following information in respect of his organization in form E and E1

1. Name and postal address including telephone and fax nos. etc. Copies of original documents defining the legal status, place of registration and principal places of business.
2. Names and titles of Directors and officers to be concerned with the work, with designation of individuals authorized to act for the organization.
3. Information on any litigation / arbitration in which the applicant was involved during the last five years including any current litigation / arbitration in process.
4. Authorization for employer to seek detailed references from clients to whom works were carried out.
5. Number of technical and administrative employees of the tenderer and how those employees would be involved in this work – Form E 1

## **3. Construction Plant and Machinery**

Applicant should furnish the list of tools / plant and equipment likely to be used for carrying out the work (in form F).

## **4. Letter of Transmittal**

The applicant should submit the duly signed letter of transmittal as per the format attached.

## **7. OPENING OF FINANCIAL BIDS**

7.1 The Financial bids (Tender) of the eligible applicants will be opened on the date and time updated later in CPP portal.

7.2 Agreement shall be drawn with the successful tenderer (L1) on prescribed Form No. CPWD 8 which forms part of e-Envelope 2 (Financial bid)

## 8. FORMS

### 1. LETTER OF TRANSMITTAL

(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

To

**THE PROJECT ENGINEER cum Estate Officer (I/C),**  
IISER TVM, Maruthamala PO,  
Vithura, Kerala – 695551

**Name of work :** Operation and maintenance of 400 KLD Sewage Treatment Plant (STP) at IISER TVM Campus Vithura, Thiruvananthapuram.

Sir,

Having examined the details given in notice inviting qualification application and tender and the qualification documents for the above work, I/ We hereby submit the application for eligibility and the financial bid for the work duly filled in.

1. I / We here by certify that all the statement made and information supplied in the enclosed forms and accompanying statements are true and correct.
2. I / We have furnished all information and details necessary for deciding our eligibility for taking part in the tendering process for the work. . We have no further information to supply.
3. . I / We also authorize the Project Engineer cum Estate Officer (I/C) or the Committee appointed by IISERTVM to approach individuals, firms and corporations to verify our performance, competence and general reputation.
4. I / We submit the following certificates in support of our suitability, technical know how and capability for having successfully completed following works.

Name of work

Certificate from

5. I/We certify that that the tender documents uploaded is the exact replica of the document published by the IISERTVM and no alterations and additions have been made by me / us in the e- tender document.
6. I am / We are aware that the Financial bid submitted by me/us will not be opened if I / We do not become eligible after evaluation of my/our application for eligibility.
7. The Original Demand Draft (EMD), FD and Bank guarantee which was /were scanned and uploaded in the e-Tender shall be deposited by me/us to the office of Project Engineer Cum Estate Officer (I/c) on or before last date of submission of bid. Otherwise department may reject the tender.
8. I / We assure to deploy the following Operation and Maintenance team with essential educational qualification and experience in O&M of STP (MBBR Technology)

S.No	Designation of the Technical / Maintenance staff	Minimum Educational Qualification / Experience	Stream	Number of staff to be deployed			
				1st shift	2nd Shift	3rd Shift	As and when required as per Scheduled frequency
1	Plant incharge / Manager	B.E with 4 years experience in O&M of STP with SBR Technology	Environmental Engineer				
2	Operator	Diploma with 3 years experience in STP (SBR) / ITI with 5 years experience in STP (SBR)	Civil / Electrical / Mechanical				
3	Fitter	ITI with 5 years experience	(Plumbing /Electrical / Mechanical)				
4	Helper / Tank Cleaner	-	-				

<p align="center"><b>FORM 'B'</b>  <b>(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)</b></p>											
<p align="center"><b>DETAILS OF ALL WORKS OF SIMILAR NATURE COMPLETED DURING THE LAST FIVE YEARS ENDING BY 30<sup>th</sup> September 2025 .</b></p>											
SL NO &	Name of work/project location	Owner or sponsoring organizations	Agreement No	Scope of work *	Cost of work in commencement as per contract	Date of Crores as per contract	Stipulated Date of completion	Actual date of completion	Litigation/ Arbitration pending / In progress with details **	Name and Remarks address/ Tel No of Officer to whom reference	
1	2	3	4	5	6	7	8	9	10	11	12

\* indicate capacity of the STP and Technology used.

\*\* Indicate gross amount claimed and amount awarded by the Arbitrator

Signature of Applicant(s)

**In case of works carried out for private persons / Organizations copies TDS certificate along with copy of performance order and work order / Agreement should be enclosed. Private works without TDS certificates shall not be considered for valuation.**

## **FORM- B1**

(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

### **ADDITIONAL INFORMATION FOR COMPLETED WORKS**

1. Name of work
2. Location
3. Client's name and address
4. Consultants name and address.
5. Scope of work.
  - a. Capacity of the STP.
  - b. STP - Technology used
  - c. No. of Units
8. Duration / Year
9. Specialized service provided, with cost details, if available
10. Specialized equipment deployed for the project.
11. Project Management organization structure.
12. Number of shift and its duration adopted in execution.
- \*13. Systems adopted for quality execution and maintenance of STP

\*Additional information shall be uploaded separately

**SIGNATURE OF APPLICANT(S)**

**FORM 'C'**  
(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

**PROJECTS UNDER EXECUTION OR AWARDED**

SL NO	Name of work/project & location	Owner or sponsoring organizations	Agreem ent No	Cost of work	Date of commence ment as per contract	Stipulated Date of completion	Up to date percentage progress of work	Slow progress if any and reasons there of	Name and address/ Tel No of Officer to whom reference may be made	Remarks( Indicate whether any show cause notice issued or Arbitration initiated during the progress of work)
1	2	3	4	5	6	7	8	9	10	11

**SIGNATURE OF APPLICANT(S)**

## FORM 'D'

(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer) PERFORMANCE REPORT FOR WORKS REFERRED TO IN FORM 'B' & 'C'

1. Name of the work / Project & Location.
1. Scope of work.
  - a. Capacity of the STP.
  - b. STP Technology used.
2. Agreement No.
3. Estimated Cost
4. Tendered Cost
5. Value of work done
6. Date of Start
7. Date of completion
  - i. Stipulated date of completion.
  - ii. Actual date of completion.
8. Amount of compensation levied for delayed Completion, if any.
9. Performance report based on Quality of Work, Time Management, and Resourcefulness : Outstanding / Very Good / Good / Fair or Satisfactory

DATE

EXECUTIVE ENGINEER /  
PROJECT MANAGER OR  
**EQUIVALENT**

(\*Signature and seal of the client /  
owner to  
Whom the work executed)

\* Certified by self will not be accepted  
TDS Certificate to be enclosed, if  
the work is executed for private  
clients


**FORM 'E'**

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

**STRUCTURE AND ORGANISATION**

1. Name and address of the applicant
2. Telephone No./Fax No/E-Mail address.
3. Legal Status (attach copies of original document defining the legal status)
  - (a) An Individual
  - (b) A proprietary Firm
  - (c) A Firm in partnership
  - (d) A Limited Company or Corporation.
4. Particulars of registration with various Government bodies (Attach attested photo-copy)
  - a) Registration Number.
  - b) Organization / Place of registration
5. Names and Titles of Directors and officers with designation to be concerned with this work with Designation of individuals authorized to act for the organization.
6. Was the applicant ever required to suspend construction for a period of more than six months continuously after the construction was commenced?  
If so, give the name of the project and give reasons thereof.
7. Has the applicant or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion?  
If so, give the name of the project and give reasons thereof.
8. Has the applicant or any constituent partner in case of partnership firm, ever been debarred / black listed for tendering in any organization at any time? If so, give details:
9. Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.
10. Field of specialization in Civil Engineering.
11. Any other information considered necessary but not included above.

**SIGNATURE OF  
APPLICANT(S)**

 Additional information shall be uploaded separately

**FORM 'E1'**

(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

**DETAILS OF KEY TECHNICAL AND ADMINISTRATIVE PERSONNEL EMPLOYED BY THE FIRM / COMPANY**

SL NO service	Designation	Total Number	Names	Qualification	Professional Experience	Length of continuous with employer
1	2	3	4	5	6	7

**Note : additional information about Technical personnel , if any , may be submitted on separate sheet.**

**Signature of Applicant(s)**

**FORM –F**

(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

**DETAILS OF TOOLS / PLANT AND EQUIPMENT LIKELY TO BE USED IN CARRYING OUT THE WORK**

SL NO	Name of the Equipment	Nos	Capacity or Type	Age	Condition	Ownership status			Current location	Remarks
						Presently owned	To be purchased	Leased		
1	2	3	4	5	6	7	8	9	10	11
1										
2										

## **Annexure 1**

Extension of contract period:

However, based on the performance of the work during the contract period and as recommended by the Plant Performance Monitoring Committee (PPMC), the contract can be extended for one more year at same rates and conditions of contract.

## **Scope of work.**

### **General Requirements for Operation and Maintenance of sewage treatment plant**

The Contractor shall operate and maintain the entire Sewage Treatment Plant All necessary repairs, maintenance, overhaul, replacements etc., shall be made during the O & M to maintain the Plant. The price for O & M bill shall include supply of all tools, tackles, spares, lubricants, backwash chemicals. The water and power supply shall be made available by the Employer at free of cost. The scope shall include but not limited to the following items.

1. Operation and Maintenance including Civil, Electrical, Mechanical and all allied works
2. Sampling and testing of influent sewage based on the tests and frequency desired by the Employer's representative and in general be in accordance with the CPHEEO manual on Sewerage and Sewage Treatment.
3. O & M of all functional and utility buildings, infrastructure and common areas within the Plant campus including maintenance of Water Supply, Sewerage, Roads, Paths, lawns in the plant premises.
4. Proper Maintenance of Proper records of sampling as per approved proforma.
5. Maintenance of logbooks of all the machinery not connected to the PLC / SCDA shall be done separately & collectively, at the STP. Fortnightly and monthly reports of all such machinery and parameters monitored by the PLC shall be generated and hardcopy along with soft copy shall be submitted to the Employer's representative. These reports shall contain appropriate and adequate data to make the records meaningful and amenable to analysis for evaluating the performance of the Plant as well as to help in O & M decisions.
6. Security of the premises and contents therein shall be the Contractor's responsibility.
7. The records maintained by the Contractor shall be produced periodically to the Employer's representative for proper monitoring. The Employer's representative's remarks shall be attended to on next submission. Consolidated summary reports shall be furnished to the Employer monthly, quarterly and yearly containing salient features. The Contractor shall also maintain history sheets of overhauling, maintenance, replacement of all the important electrical and mechanical equipment The O & M shall include the appropriate preventive maintenance of equipment as per the manufacturer's recommendation.

## **2.1 CHARACTERISTICS OF RAW SEWAGE AND TREATED**

### **SEWAGE: RAW SEWAGE CHARACTERISTICS:**

S.No	PARAMETER	UNIT	VALUE
1.	BOD	mg/l	150 - 350
2.	COD	mg/l	200 - 600
3.	TSS	mg/l	200 - 250

### **CHARACTERISTICS OF TREATED SEWAGE SHALL BE:**

S.No	PARAMETER	UNIT	VALUE
1	BOD	mg/l	$\leq 50$
2	TSS	mg/l	$\leq 10$
3	FC	/100ml	$\leq 230$
4	COD	mg/l	$\leq 50$

### **PARTICULARS OF THE PLANT at IISERTVM**

The 400 KLD STP at IISER Campus is located near the entrance of the campus. The sewage and sullage from academic and hostel area of IISER, are brought to the plant in separate lines which flow to the plant under gravity. Sewage Treatment plant consists of Physio-chemical, Biological and tertiary treatment units. The biological system consists of MBBR, settling tank and UV system. The tertiary system consists of Pressure sand filter and Multi-grade Filter. For sludge collection and dewatering there are sludge transfer pumps. The raw sewage and sullage is collected in the collection tanks and is then made to flow through the screen channels where the 10mm bar screen and the 6mm fine screen are located. The screened sewage and sullage passes through the skimming tank where the oil and grease is being skimmed manually. The sewage and sullage are collected in an equalization tank which also acts as a buffer tank. The flow from this tank is at a constant rate of 2.4 liters per second. The sewage/sullage passes through the rapid mixing unit, flocculation unit, sedimentation unit, MBBR units, tube settlers, pressure sand filter, activated carbon filter and UV filter before it is used for irrigation purposes. Final treated water characteristics meet the disposal norms specified by Kerala State Pollution Control Board KSPCB and Central Pollution Control Board CPCB.

**Period of Operation & Maintenance:**

The Plant shall be operated and maintained without any breakdown 24 x 7 during the specified contract period.

Shifts per day 3

**Man Power to be deployed at plant:**

The tenderer shall workout the number of manpower required and clearly indicate the same in the Cover 1 (Eligibility application / Technical bid) - Technical proposal and Letter of Transmittal.

Minimum personnel to be employed

Sl. No	Position	Minimum Experience Years	Minimum Qualification	Minimum Number required
1	Engineer (General Shift)	More than 5	Degree in Environmental Engineering	1
2	Pump Operators 3 Shift	More than 2 years for operation of similar STP	ITI technician plumber	1 per shift
3	Helper	More than 2 years for operation of similar STP	Skilled	3 per shift

**TECHNICAL DETAILS OF 400 KLD STP****Civil Units**

Sr.No	Particulars	Quantity
1	Collection sump	Two No
2	Bar Screen chamber	Four No
3	Skimming Tank	Four Nos
4	Equalization tank	Two Nos
5	Raping Mixing Tank	Two No
6	Flocculator	Two No
7	Primary Sedimentation Tank	Two No
8.	MBBR Tank	Four Nos
9	Secondary Settling tank	Two No
10	Tube settler	Two No.
11	Filter Feed Tank	One No
12	Treated water tank	One No
13	Pressure Sand Filter	One No
14	Activated Carbon Filter	One No

15	UV system	One No
16	Treated Water Tank	One No
17	Sludge Holding Tank	One No
18	Conditioning Tank	One No
19	Anaerobic digester	One No.
20	Panel room	One No
21	Foundation for mechanical units	Lot
22	Riling, Ladders, Cable trenches, Earth pits, Puddle pipes etc	Lot

#### Mechanical Units

Sr. No	Particulars	Quantity
1	Bar Screen	Eight Nos
2	Ari Diffuser in Skimming tank	12 Nos
3	Blower	Two Nos
4	Raw Sewage Feed Pumps 1W+1Sb	Two Nos
5	Random MBB Reactor Media	LOT
6	Air Purging grid at Equalization tank	4 LOT
7	Air blowers 1W+1Sb	Four Nos
	Air Purging grid at MBBR tank	4 LOTS
8	Lime dosing	Five Nos
9	Poly Dosing system	Two Nos
10	Tube Deck Media	2 LOT
11	SST Sludge Pumps 1W+1Sb	Two Nos
12	UV system	One No.
13	Chlorine Dosing system	One No
14	Filter Feed Pumps 1W+1Sb	Two Nos
15	Pressure Sand Filter	One No
16	Activated Carbon Filter	One No
17	UV system	One No
18	Agitator	9 Nos
19	Filter press	One No
20	Treated water sump transfer pumps	Two Nos

## **SCOPE OF WORK**

The scope of the works generally broadly on following aspects

1. Day to day operation 24x7 for 365 days & routine maintenance and to follow daily checks.
2. Provide professional, skilled & semi- skilled manpower for all the installed equipment's operation.
3. Preparation & Dosing Chemical Solutions of required concentration and quantity.
4. Collection, removal and disposal of sludge. Maintain the MLSS level in Bio reactor.
5. General cleaning and house-keeping.
6. Operation of all electrical & mechanical machinery including electrical panels.
7. Clean / Preventive / minor repairs of the air filters on Air Blowers regularly. Change the air Filters periodically.
8. Preventive/minor maintenance of pumps, blowers, Motors and other equipments
9. Oil & grease chamber, all screen bars manual and all tank cleaning

The scope of work specifically falls under the following categories.

1. Operation of the plant.
2. Testing and accessing the performance of the plant periodically at the specified intervals.
3. Maintenance of the equipment's.
4. Maintaining the premises, plant rooms and machinery.

### **1. Operation of the plant.**

The **operating agency (OA)** shall maintain qualified staff at site to monitor the flow parameters and the chemical characteristics of the influent sewage and sullage regularly on a weekly basis and when any visible change in physical characteristics is observed. The concentration and dosage of chemicals shall be fixed in accordance to the inflow parameters. The performance of each units shall be calculated on a monthly basis. Separate checklists have to be prepared for daily, weekly and monthly activities and has to be recorded.

- 1.1. The collection tanks – The sewage and sullage collection tanks are provided with motorized agitators running at 300 RPM. The pH of the influent sewage and sullage shall be monitored and the dosage of chemicals to be adjusted suitably to get neutral pH. The agitator blades and shaft to be cleaned daily and maintained in good condition. The tank should be cleaned daily and to be free of any settled and entrapped foreign bodies. The RPM of the agitators to be checked regularly.
- 1.2. The flow divider – The sewage and sullage streams are provided with flow divider chambers to regulate the flow in the channels to enable continuous operation during maintenance. The flow divider shall be checked periodically for settlements, blockages and free motion of the moving parts.
- 1.3. Screen Channel – The sewage and sullage streams are provided with two sets of screen channels for screening the undesirable oversized floating and suspended bodies. The screen channels shall be cleared from settlements of waste. The bio degradable residuals in the screens shall be collected and

disposed suitably by burying within a distance of 2 Km inside the campus or disposed into any of the Bio-gas plants available in the Institute. The non-degradable materials shall be cleaned and disposed off along with similar materials by the Institute.

- 1.4. Skimming tank – The sewage and sullage streams are provided with two sets of skimming tanks. The floatings in the skimming tank shall be skimmed using manual skimmers and disposed suitably. The air blowers connected shall be running 24x7 in two hour tandem and shall be maintain at desired airflow rate.
- 1.5. Equalization Tank – The sewage and sullage streams are provided with equalization tank which acts as a buffer tank which has to be maintained with 24x7 aeration to the required levels. The flow from the equalization tank to the next stage is not under gravity. Two sets of lifting pumps are provided in each stream. The pumps are to be operated in two hour tandem at a constant discharge condition of 2.4 lit per second.
- 1.6. Rapid Mixing Tanks – One rapid mixing tank is provided in each flow stream. The rapid mixing tanks are provided with flat blade agitators for proper mixing of the chemicals dosed. The auxiliary chemical dosing tanks and dosing pumps also have to be maintained in good condition with constant supply of chemicals to be dosed in the required concentration. Any floating bodies if found in the tank shall be removed and disposed.
- 1.7. Flocculation tanks – One flocculation tank with three flocculates are provided in each stream. The direction of rotation, speed of rotation and the smoothness of rotation have to be ensured for the formation of flocks. Any floating bodies if found in the tank shall be removed and disposed.
- 1.8. Primary sedimentation tank PST - One PST each is provided in each stream. These Hopper bottom tanks are provided for the settlement of flocks formed as a result of the flocculation. Extreme care shall be taken to remove any floating bodies and the clear water flows to the next stage only through the “V” notches provided in the overflow weir plate for further treatment of the clear water. The deposited sludge shall be removed at frequent intervals to the sludge holding tanks for further treatment of the sludge.
- 1.9. MBBR Tanks – Each stream is provided with two sets of MBBR tanks connected in series. The overflow from the PST shall be fed into these tanks. The tanks shall be supplied with 24x7 aeration. The growth of bacteria shall be closely monitored by checking the MLSS and MLVSS on a daily basis. Corrective actions shall be taken if the feed concentrations fluctuate.
- 1.10 Tube settler – The overflow from the MBBR tanks are to be fed into the tube settler tanks. The sludge settled in the tube settler tanks have to be removed as and when required. The tube settler shall be washed with water jet if required and maintained in good condition.
- 1.11 Pressure Sand Filter & Activated Carbon Filter - Using a 5 Hp filter feed pump the water from the filter feed sump is pumped to the sand filter. The filter feed pump to be operated as per the water level in the filter feed tank. After sand filter the water is let in to the carbon filter. After carbon filter the water is stored in Treated water tank after passing through UV system. In between the line, from carbon

filter to treated water tank, chlorine dosing is done. During normal filtration process the water from the filter feed pump flows from top to the bottom of the filter. The pressure filters should be backwashed for 5 minutes and rinsed for 3 minutes after every 8 hours of operation. Failure to do this would affect the treated water quality. The position of valve for each operation is clearly specified on the valve.

### **Sludge Management**

- 1.12 Conditioning Tank – The sludge in the sludge holding tank is pumped to the conditioning where the sludge is treated anaerobically in batches and transferred to the digester tank. The agitator in the tank shall be maintained in good condition.
- 1.13 Digester – The partially treated sludge is transferred to the anaerobic digester for final treatment of the sludge. The agitators in the tank shall be maintained in good condition. Samples from the sampling valves shall be taken and tested to ascertain the condition of the digesting sludge before disposing into the drying bed.
- 1.14 Drying Bed – The digested sludge is moved to the drying bed after the digestion process. The dried sludge shall be removed and packed in containers and handed over to the Horticulture section.

### **2 Testing and accessing the performance of the plant periodically at the specified intervals.**

- 2.1 The operating agency OA shall maintain required qualified staff and minor lab setup to monitor the MLSS, MLVSS and pH on a daily basis. The BOD of the treated water shall be monitored on a weekly basis internally. The results shall be recorded and maintained in a log book.
  - 2.2 The following tests shall be conducted on any approved NABL accredited Government testing laboratory at the rate once in two months. BOD, COD, TSS, DO, Acidity, Nitrate, E-coli and any other parameter suggested by KSPCB in the treated water. The OA shall supply the samples to the testing lab and obtain the results promptly and maintain a record of the results. The testing fee shall be paid by the agency and got reimbursed on **producing the results along with original fee receipt.**
  - 2.3 The biyearly tests include BOD, COD and DO at inlet, equalization tank, PST, MBBR tanks and Treated water. The OA shall supply the samples to the testing lab and obtain the results promptly and maintain a record of the results. **The testing fee shall be paid by the agency and got reimbursed on producing the results along with original fee receipt. The performance of each tank shall be evaluated based on the result.**
- 3 Maintenance of the equipment's.

### **I. PUMPS**

#### **➤ Precautionary measures**

- Insufficient, wrong or irregular maintenance can lead to malfunctions and seriously damage the pump.
- All work should be carried out by suitable trained personnel
- Always switch off the pump before starting any work on it.

➤ **Periodic inspection daily.**

- The pump should run smoothly and free from noise or vibration
- Shaft alignment and levelness of the base plate
- Any leaks in pipes, pump casings, gasket joints

➤ **Maintenance**

- Grease to each drive & bearing for every 90 days Recommended grease - AP-3 Castrol
- Using other grade oils would seriously damage the blowers.

**II. TWIN LOBE AIR BLOWER- WITH MOTOR**

➤ **Checkpoint**

- The rotation of the motor should be as same the direction mark shown in compressor.
- Oil level in compressor – minimum oil level red mark is shown
- Any block in inlet filter
- Any air leak from gaskets, couplings and air line
- Any abnormal noise or vibration from the compressor

➤ **DAILY CHECKUP**

1. Check blowers and ensure the oil level at safe level
2. Ensure safety valves for blower out let is working properly
3. Ensure float switch is working properly

➤ **Maintenance**

- Every 30 days the suction filter to be cleaned with compressed air.
- Once in 60 days the oil to be changed in the compressor Oil grade – SP 320 Indian oil Qty – 350 ml per compressor
- Cover of the safety valve to wash with kerosene or diesel.
- Grease to each drive & bearing for every 90 days Recommended grease - AP-3 Castrol
- Using other grade oils would seriously damage the blowers.
- Over filling will cause the gears to run hot thereby leading to damage.

● **PRESSURE SAND FILTER**

Working Pressure : 3.5 Kg/cm<sup>2</sup> MOC : MSRL

Size : 1400 mmdia x 2000mm Height

Flow rate : 20 m<sup>3</sup>/Hr

Filter Media : Multi-grade Sand

● **PRESSURE CARBON FILTER**

Working Pressure : 3.5 Kg/cm<sup>2</sup> MOC : MSRL

Size : 1400 mm dia x 2000mm Height

Flow rate : 20 m<sup>3</sup>/Hr

Filter Media : Activated Carbon

- **In case of any breakdown of equipment / machinery the operating agency shall arrange alternative by hiring of required equipment / machinery. The equipment / machinery shall be got repaired by the operating agency. The hire**

charges / repair charges / cost of spares and consumables shall be reimbursed by the employer on production of the bills in original.

- Purchase of chemicals for dosing – the operating agency shall procure and store sufficient quantity of chemicals required for dosing for one month. The purchase bills shall be reimbursed by the employer on production of the-original bills.
- All the bills produced for reimbursement shall be in original and in the name of IISERTVM.
- The repairing of equipment shall be got done within a maximum time period of 1 Week. The hire charge for substitute equipment shall not be reimbursed beyond a maximum of one week.

**4 Maintaining the premises, plant rooms and machinery.**

The premises of the plant and the plant rooms shall be maintained in a clean and hygienic condition. Cleaners shall be employed on a regular basis to maintain the entire area in a hygienic and clean condition.

The maintenance of the machinery shall be maintained as per the manufacturers instructions.

### **Contractor's Responsibilities**

The contractor is responsible for providing all manpower, tools, and ensuring operation of the STP as per norms.

#### **Compensation for Delay**

In case of delays in attending breakdowns or quality failures, compensation/penalties will be levied as per Special Conditions.

#### **Quality Assurance**

Effluent must meet the standards set by Kerala Pollution Control Board. Contractor shall maintain and furnish lab test results and quality records.

#### **Compliance with Labour Laws**

Contractor shall ensure payment of minimum wages and compliance with ESI, EPF, and safety provisions.

#### **Insurance**

Contractor must insure staff against accidents and also cover equipment, plant and third-party liabilities.

#### **Termination**

If contractor fails to maintain performance or violates contract terms, contract may be terminated by the department.

## Special Conditions of Contract (SCC)

### 1. Scope of Work

The scope includes operation, routine maintenance, preventive maintenance, repairs, and reporting for the entire 400 KLD STP based on MBBR technology for a period of one year.

### 2. Performance Guarantee for O&M

The contractor shall submit a separate Performance Guarantee amounting to 5% of the O&M contract value, valid for the entire O&M period. It shall be renewed yearly, if applicable.

### 3. Staff Deployment

The contractor shall provide the minimum manpower on-site stipulated in the contract.

### 4. Treated Effluent Quality

The treated water must consistently meet KPCB norms. Any deviation will invite penalty as specified in Clause 8. Contractor shall coordinate with KPCB during inspections or audits.

### 5. Testing & Reporting

Daily logbooks to be maintained and submitted monthly to Engineer-in-Charge (EIC). Mandatory laboratory tests as follows:

- pH, BOD, COD, TSS, Ammonia, Nitrate – weekly
- Fecal Coliform – monthly

Reports to be certified by a recognized laboratory or site chemist.

### 6. Operation Records & Logbooks Contractor must maintain:

- Daily inflow/outflow volume
- Pump/blower run hours
- Energy consumption
- Chemical dosing logs
- Maintenance logs

These shall be signed daily by the Operator and weekly by the EIC.

### 7. Maintenance

Preventive maintenance schedule to be approved by the EIC. Contractor shall maintain critical spares and consumables on-site. Breakdown repair shall be completed within 48 hours, failing which penalty applies.

### 8. Penalties for Non-Performance

Penalties will be applicable for deficiencies as follows:

- Effluent not meeting standards: ₹5,000 per sample
- Failure to submit reports: ₹1,000 per report

### 9. Utilities Usage

Electricity and water will be provided by the Department. Contractor shall maintain efficient use and provide monthly consumption reports.

#### 10. Safety and Insurance

All staff to be covered under ESI/Insurance. Contractor shall be liable for accidents due to negligence. Adequate fire, gas leak, and electrical safety measures shall be ensured.

#### 11. Legal Compliance

Contractor must ensure compliance with:

- The Water (Prevention and Control of Pollution) Act, 1974
- The Environment (Protection) Act, 1986
- Hazardous Waste (Management) Rules
- Any local Municipal/PCB regulations
- All applicable statutory compliances related to labour, taxes etc.

#### 12. Exit & Handover

On completion of O&M period, the contractor shall:

- Hand over the plant in clean, functional condition
- Submit final O&M report with inventory and manuals
- Train departmental staff for takeover (if required)

#### 13. Dispute Resolution

Any dispute shall be resolved as per CPWD GCC Clause 25 for maintenance works.

#### **Personnel Engaged by Operating Agency (OA)**

1. OA is expected to ensure that men of proven ability, adequately qualified and experienced in similar works, only are employed and that they work diligently. In case, the Employer is of the opinion that any person is not suitable, OA shall withdraw him from site and replace him with a suitable person. In case any Engineer/s supervisor/s, resign from their employment, OA shall immediately provide a suitable substitute. They shall not make any changes in the personnel deployed by them without prior permission of the Employer.
2. OA shall furnish to the Employer a list of Employees with details of their names, qualifications, experience etc., proposed to be engaged in this work.
3. The Employer undertakes no responsibility/liability in respect of any life, health, accident, travel nor any insurance to cover the above, for the personnel deployed by the OA.
4. OA shall be responsible for any damage or loss on account of negligence of their staff. They shall indemnify the Employer against all such loss or damage.
5. OA shall not object to the Employer deploying any Engineer/or other staff at its own cost at the site to carry out duties allotted to the later by the Employer, including, but not limited to overall surveillance, security and verification.

The requirement is the visualized minimum. However, more staff and other categories of staff may have to be appointed, if necessary, for satisfactory operation of the plant. The Employer shall have no responsibility for any Staff/ Officers/ Engineers engaged by the OA. The Employer shall deduct at the rates specified in **Annexure B** for not employing / unauthorized absence / non-performance of any of the staff employed by the OA in the next running bill.

## Section 6

### PAYMENT TO Operating Agency

#### 1.1 Total Cost of the Services.

- (a) The services rendered shall be for a period of one year from the date of agreement. The bills shall be as per the quoted amount of the operating agency or the negotiated reduced rate whichever is minimum.

#### 1.2 Terms of Payment:

The payments in respect of the services shall be made as follows:

- (a) The OA shall submit the invoice for payment on prorated on a monthly basis.
- (b) The Employer shall release the requisite payment upon evaluation of the performance of the agency, within 30 days of receipt of it.
- (c) In case of early termination of the contract, the payment shall be made to the OA as mentioned here with:
- i Assessment should be made for the services of the OA till the date of termination and prorated amount shall be arrived. The payment already made shall be deducted and balance amount only shall be paid.
- (d) The testing fee for tests conducted in external labs shall only be reimbursed. The operating agency shall procure the chemicals required for chemical dosing and internal tests. The bill shall be in the name of "IISER TVM". The bills shall be reimbursed upon production of the original receipts.

#### Annexure B

	Position	Rate per day
1	Engineer	2,500/-
2	Pump Operators	969/-
3	Helper	944/-

### Annexure I – Format for Laboratory Test Report

Name of STP: \_\_\_\_\_ Date of Sampling: \_\_\_\_\_ Time of Sampling: \_\_\_\_\_

Parameter	Unit	Result	Limit as per KPCB
pH			6.5-8.5
Biochemical Oxygen Demand (BOD) 5 day	mg/L		< 10
Chemical Oxygen Demand (COD)	mg/L		< 50
Total Suspended Solids (TSS)	mg/L		< 10
Ammoniacal Nitrogen	Mg/L		< 5
Fecal Coliform	MPN/100 mL		≤ 100 MPN/100 mL

Remarks: \_\_\_\_\_

Tested By (Name & Signature): \_\_\_\_\_

## **Annexure 2 Format for Staff Bio-Data**

Name of Staff: \_\_\_\_\_

Designation: \_\_\_\_\_

Qualification: \_\_\_\_\_

Experience (Years): \_\_\_\_\_

ESI/EPF No.: \_\_\_\_\_

Mobile Number: \_\_\_\_\_

Duty Shift: \_\_\_\_\_

Date of Joining: \_\_\_\_\_

Signature of Contractor: \_\_\_\_\_

### Annexure III – Format for Daily Log Sheet

Date: \_\_\_\_\_

Shift: ☐ Morning ☐ Afternoon ☐ Night

Time	MLSS in MBBR 1	MLSS in MBBR 2	MLSS in MBBR 3	MLSS in MBBR 4	Treated water outflow	Any observations	Signature of Operator

Operator Name & Signature: \_\_\_\_\_

### Annexure IV – Chemical consumption Register

Date	Chemical Name	Opening Stock (kg/L)	Quantity Used (kg/L)	Closing Stock (kg/L)	Issued By	Verified By

### Annexure V – Maintenance Log Book

Date	Equipment Name	Maintenance Type (Preventive/Breakdown)	Description of Work	Performed By	Remarks

### Annexure VI – Sludge Disposal Register

Date	Source of Sludge	Quantity Removed (kg)	Drying Method	Final Disposal Method	Disposal Location	Operator Name	Remarks

### Annexure VII – water quality monitoring report

Date	Sample Source	pH	BOD (mg/L)	COD (mg/L)	TSS (mg/L)	DO (mg/L)	Residual Chlorine (mg/L)	Tested By	Remarks

### Annexure VIII – water quality monitoring report

Date	Time	Location	Nature of Incident	Immediate Action Taken	Root Cause (if known)	Reported By	Corrective Action	Remarks

## SCHEDULE FOR WORKS

(Operative Schedules to be supplied to each intending tenderer)

**SCHEDULE 'A':** Schedule of quantities Enclosed as Financial bid document

**SCHEDULE 'D':** General conditions and requirements /documents for the work, if any, specification of work, if any etc.

Nil
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**SCHEDULE 'E':** Reference to General Conditions of contract: General Conditions of Contract for CPWD Maintenance works–2023 amended up to the last date of submission of online tender

- a. Name of work: **Operation and Maintenance of 400KLD Sewage Treatment Plant (STP) at IISER TVM Campus Vithura, Thiruvananthapuram**
- b. NIT NUMBER: **IISER-T/1996/28/25-26 dated 23/10/2025**
- c. Estimated cost put to tender : **Rs.68,86,225/-**
- d. Earnest money : **Rs.1,37,725/-**
- e. Performance Guarantee : **5% of tendered value.**
- f. Security Deposit : **2.5 % of tendered/accepted value**

### **SCHEDULE 'F':**

**GENERAL RULES & DIRECTIONS:** General Conditions of Contract for Maintenance works - 2023 with up to date amendments (As on Date of opening of price bid) shall be read with NIT.

Officer inviting tender: Project Engineer cum Estate Officer (I/C), IISER TVM

Maximum percentage for quantity of items of work to be executed beyond which rates are to be

Determined in accordance with Clauses 12.2 & 12.3: 100% for substructure & 30% for superstructure

### **Definitions:**

2(v) Engineer-in-Charge :Engineer as authorized by IISER TVM

2(viii) Accepting Authority : The Director, IISER TVM

2(x) Percentage on cost of materials and labour : 15%  
to cover all overheads and profits

2(xi) Standard schedule of Rates: As per market rates /DSR

2(xii) Department: Indian institute of Science Education & Research  
Thiruvananthapuram

9(ii) Standard contract Form : Item rates contract

### Clause 1

- (i) Time allowed for submission of Performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including provident fund code No. if applicable or Proof of applying thereof from the date of issue of letter of acceptance - **15days**
- (ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above - **7 days**

### Clause 2

Authority for fixing compensation under clause 2.	The Director, Indian institute of Science Education & Research Thiruvananthapuram
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### Clause 2 A

Whether Clause 2A shall be applicable.	Not Applicable
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### Clause 5

Number of days from the date of issue of letter of award works for reckoning date of start	15 days
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### Table of Mile stone(s):-

Sl no.	Description of Milestone (Physical)	Time allowed in days (from the date of start)	Amount to be withheld in case of non-achievement of milestone. (% of tendered amount of respective Civil component )
-NIL-			

Time allowed for execution of work : 12 months

**Authority to decide:**

- (i) Authority to reschedule Milestones : Engineer in charge
- (ii) Authority to give fair and reasonable extension  
of time for completion of work : Engineer in charge
- (iii) Shifting of date of start in case of delay in  
handing over of site : The Director, IISER TVM

**Clause 6**

Mode of measurement	CMB (Computerized measurement book)
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**Clause 7**

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	NA
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**Clause 7A**

Whether clause 7A shall be applicable	Applicable
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**Clause 10A**

Whether clause 10A shall be applicable	Applicable
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**Clause 10 B(i)**

Whether Clause 10B (i) shall be applicable	Not Applicable
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**Clause 10 C**

Component of labour expressed as percent of value of work	Not Applicable
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**CLAUSE 10CC**

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column.....	Not applicable
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Schedule of component of other Materials, Labour, POL etc. for price escalation.

Component of civil- Xm.....% (Except materials covered under Clause 10CA) Civil Construction materials expressed as percent of total value of work	NIL
Component of Labour - Y.....% expressed as percent of total value of work	NIL
Component of P.O.L- Z.....% expressed as percent of total value of work	NIL

#### Clause 11

Specifications to be followed	<ol style="list-style-type: none"> <li>1. Specification as mentioned in the tender documents</li> <li>2. CPWD General specification</li> <li>3. IS specification</li> <li>4. Original Equipment Manufacturer's specification</li> <li>5. Engineer in Charge's decision</li> </ol>
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#### Clause 12

Authority to decide deviation upto 1.5 times of tendered amount : Not applicable

12.2 & 12.3	Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	30%
12.5	Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work	100%

#### Clause 16

Competent Authority for deciding reduced rates	The Director, Indian institute of Science Education & Research Thiruvananthapuram
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#### Clause 18

List of mandatory machinery, tools & plants To be deployed by the contractor at site at his cost	As required for timely execution of work
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**Clause 19C** The Director, IISER TVM authority to decide penalty for each default

**Clause 19D** The Director, IISER TVM authority to decide penalty for each default

**Clause 19G** The Director, IISER TVM authority to decide penalty for each default

**Clause 19K** The Director, IISER TVM authority to decide penalty for each default

#### Clause 25

Constitution of Dispute Redress Committee: Building and Works Committee

**Clause 32**

Requirement of Technical Representative(s) and recovery rate to be affected from Contractor bill for non-deployment of technical staff at site of work:

S.N	Technical Representative (s)	Qualification & Discipline of the Technical Representative	Minimum Experience of the Technical representative(s)	Minimum Numbers to be employed at site for full duration of the project	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 34(i)	
					Figure	Words
As mentioned in the tender document						