

Application Reference Number: S-000059

Type : Sanitation Related.

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| Category of Treatment Technology : | Sanitation |
| Sub Category : | Black Water |
| Has Your Technology Ever Been Considered by the Committee: | NO |
| Considered by Committe Category: | Category I |
| Name of the Technology: | Mobile septage Treatment Unit (MTU) |
| Company/Firm Name: | Water, Sanitation and Hygiene Institute (WASH Institute) |
| Email: | akalimuthu@washinstitute.org |
| Nature Of Applicant: | Original Innovator |
| Nationality: | INDIA |
| Applicant Address Line 1: | 42 Vasant Enclave, Vasant Vihar |
| Applicant Address Line 2: | |
| Applicant State: | DELHI |
| Applicant District: | SOUTH |
| Applicant PIN Code: | 110057 |
| Current Stage: | Product Stage |
| Is the technology listed in the GEM Portal of Government Of India: | NO |
| Whether the Technology is currently installed in India: | YES |
| Technology Installed Address Line 1: | WASH Academy, No.1/20, Kathiranampatti Pirivu, |
| Technology Installed Address Line 2: | Dindigul district |
| Technology Installed State: | TAMIL NADU |
| Technology Installed District: | DINDIGUL |
| Technology Installed Postal Code: | 624622 |

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| Brief on the technology: | The MTU is a faecal sludge treatment technology, mounted on a small truck, which can empty and treat the contents of a septic tank on-site and discharge clean treated wastewater meeting CPCB standards. The MTU undertakes solid-liquid separation, sludge thickening, and effluent treatment. Once solids are separated the liquid is passed through the treatment process and discharged in gardens, fields, or open drains near the households. Solids are retained on the vehicle for safe disposal at the end of the day. Thickened sludge can be disposed in a small trench or composted along with organic waste. |
| Indicate the compliance to the relevant technical standard of the final technology output : | There are no notified standards for faecal sludge treatment in India. The MTU voluntarily adheres to the CPCB standards for Sewage Treatment Plant treated water discharge. |
| If not applicable, then specify reason/other standards followed : | The MTU voluntarily adheres to the CPCB standards for Sewage Treatment Plants treated wastewater discharge |
| Whether the technology is patented: | YES |
| Nature of patent: | National |
| Whether any pre-treatment required for adopting the technology: | NO |
| Nature Of Effluent Disposal: | Other(Specify) |
| Nature of effluent disposal other: | Treated wastewater conforming to CPCB standards disposed in gardens, fields, or open drains |
| Overall life cycle cost of the technology excluding taxes: | 2500000 |
| Whether the product is manufactured in India: | YES |
| Names of the competitors in the market if any: | None |
| Time for installation from the day of placing the order: | 90 |
| Period of warranty: | 1 |

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| Details of service facility available post installation: | WASH Institute will license reputed private companies for manufacturing and distribution of MTUs through technology transfer. Licensees are chosen only if they have nationwide sales and service network. |
| Turn-around time for customer complaint redressal: | 4 |
| Number of Options based on Plant Size: | 1 |

Assured Matrix:

Plant: 1 Plant Size: 18 Kl/day

| AFFORDABILITY: | |
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| a. Capital Cost for different plant size: | |
| i. Capex of the System: | 3500000 |
| ii. Land Requirement for setting up the treatment plant excluding storage, if any required: | 100 |
| iii. Construction materials cost: | 50000 |
| b. Operational Cost (Cost involved in daily operation and periodical maintenance) of the technology: | |
| i. Electricity Requirement: | 1 |
| ii. No. Manpower required for both installation and O&M with cost: | |
| 1. Skilled: | 2 |
| 2. SemiSkilled: | 0 |
| 3. Unskilled: | 0 |
| iii. Sludge treatment cost: | 750000 |
| c. Cost of treated Water (Life Cycle cost)¹: | 370 |
| SCALABILITY: | |
| a. Possibility of Retrofitting into existing system: | NO |
| b. Is additional construction of structure required (e.g. Platforms, control room etc.): | NO |

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| c. Are the scalable(Capacity) models currently available?(e.g. 1KL,10KL,100KL): | NO |
| d. Production volume of treated water per day for different plant sizes: | 18 |
| e. Technology Readiness Level(Scale 0-9): | 8 |
| f. Is the production capacity easily scalable(i.e. modular units that can be plugged together) to achieve higher volumes(Show proof): | YES |
| SUSTAINABILITY: | |
| a. Is there requirement of addition of chemicals for pre-treatment to input water: | NO |
| b. Quantity of chemical added per KL: | |
| d. Sludge Management: | |
| i. Quantity of Sludge/reject generated from the process: (Kg/KL): | 20 |
| ii. Phase/Nature of generated sludge/reject: (Liquid/Gas) | Solid |
| iii. Can the sludge be completely managed on site? | YES |
| iv. Is the reject/sludge hazardous in nature? | NO |
| v. Any pre-treatment of sludge necessary prior to rejection? | YES |
| vi. Skill set required for management of sludge/reject? | |
| vii. Any other waste generated annually? | YES |
| e. Filter Media : | |
| i. Life of the filter media used.(Yrs): | 1 |
| ii. Frequency of replacement of media: (No's per year): | 2 |
| f. Is there a dry run projection ² ? | NO |
| g. Quarantine protocol required for bacterial interventions if any? | NO |
| UNIVERSALITY: | |

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| a. Whether the unit will operate in any terrain type and can be used during disasters?: | YES |
| Specify terrain type and nature of disasters i.e. floods, earthquake, Tsunami etc: | All terrains, floods |
| b. Inlet water requirements: | |
| i. Is the system resilient to abrupt changes in the inlet concentration? | YES |
| ii. Is pre-treatment of inlet Water required? | NO |
| c. Does the plant output meets the desired IS standards or other standards? | YES |
| e. Post-treatment required? | NO |
| f. No. of installation/No. of Units sold?(Provide with documentary evidence the details of the organizations and companies that have used the product and mention minimum number of plants installed) | 4 |
| RAPID: | |
| a. Production and Stocks: | |
| i. What is the production capacity per annum? (No. of units/Year). | 100 |
| ii. Number of Production facilities?(Provide Details of production facilities with capacities) (No. of units) . | 2 |
| b. Installation and Commissioning: | |
| i. Time required for Installation and commissioning of 1 unit (Days). | 90 |
| ii. Is in-situ/prefabricated installation possible? | NO |
| c. Is remote monitoring of Unit possible? | YES |
| EXCELLENCE : | |
| a. State of Patent Application? | Applied |
| b. Is the product certified by other national/international agency(NSF/WQA/ISO/BIS etc.)? | YES |

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| i. Kindly give details: | Duke university, Research Triangle International, BITS Pilani, Goa have all tested the MTU in field conditions and certified its performance. |
| c. Replacement of parts required? (No./year) | 0 |
| d. Any other specific excellence criteria observed or claimed by the vendor. Outline service organizations (Locations,no.of people etc..)(No./year) | 2 |
| e. Does the unit/device improve overall sewage quality apart from regular treatment process(No./year): | No |
| DISTINCTIVE : | |
| 1. Manufacturing of components for assembling of the plant: | Completely Indigenous |
| b. Any other distinctive feature of the product in terms of any of the above parameters? | MTU is designed completely with off-the-shelf parts and can be scaled up rapidly. Production facilities for the MTU do not require heavy machinery or capex and is simple assembly only. MTU saves emissions by avoiding transport of sludge and treating it onsite. |