

e-file No. 259/1/2022-BIOGAS
Government of India
Ministry of New and Renewable Energy
(Biogas Division)

Atal Akshay Urja Bhavan,
Opp. CGO Complex,
Lodhi Road, New Delhi-110003

Dated: 19.07.2023

OFFICE MEMORANDUM

The undersigned is directed to refer the joint proposal of M/s BAIF Development and Research Foundation, Warje, Pune and M/s Sankalp Medi Education Society, Pune, on biogas slurry filter unit received by this Ministry. The proposal has been assessed and appraised after onsite inspection of the Biogas Slurry Filter Unit. The details of biogas slurry filter and technical specifications are given at **Annexure-I**. This biogas slurry filter unit is being approved and eligible for implementation under the MNRE Biogas Programme.

2. MNRE reserves the right to cancel the approval at any time in future based on the feedback received from the end users, beneficiaries and Programme Implementing Agencies.

This issues with the approval of the competent authority in this Ministry.

Encl: As above.


(P M Barik)
Scientist- 'C'

Tel: 011 20849069
e-mail: pabitra.mnre@gov.in

To

1. M/s BAIF Development and Research Foundation, Warje, Pune (Maharashtra)
2. M/s Sankalp Medi Education Society, Pune (Maharashtra)

Copy to:

1. Heads of all Biogas Programme Implementing Agencies;
2. PIs of all 8 Biogas Development and Training Centres (BDTCs) - **with request to carry out monitoring and supervision during the field inspection of small biogas plants.**
3. Director NIC MNRE – with request to upload on MNRE website.

For kind information: PPS to Jt. Secretary, Bioenergy, MNRE.

Subject: Technical Specifications and Operations Procedure for Biogas Digested Slurry Filter Unit.

1. General Specifications:

BAIF 5G biogas slurry filter is a filtration unit for digested biogas slurry. It is a set of 6 crates including specially fabricated crates with different perforation sizes. Each set includes 2 nos crates of Mesh filters, 2 nos crates of Fine mesh filter and 2 nos. of non-perforated crates for storage of filtrate liquid. With use of this slurry filter, the solid and liquid component of the fresh digested slurry gets separated and the same can be used directly or as value added products.

2. Specifications of Materials:

2.1 Material of construction used for crates should be of HDPE, manufactured by process of injection molding.

2.2 The material of construction used for Mesh filter should be of HDPE M60075 material with 6-8 mm hole size and for fine mesh filter should be green color shade net with 75% shade. Material should have good welding properties and UV stabilized.

2.3 The material used for construction of such filtration units shall be guaranteed by the manufacturer to have minimum useful life of 5 Years.

3. Slurry filtration capacity: 80 to 100 liters of fresh biogas plant digestate per day.

4. Overall Dimensions:

S N	Description	Dimensions	Weight	Thickness	Capacity (ltr)
1	Mesh Filter	OD 600x400x320 mm ID 565x365x315 mm	2.67 kg	3.00 mm	65
2	Fine Mesh Filter	OD 600x400x120mm ID565x365x115 mm	1.30 kg	3.00 mm	23
3	Filter Tank	OD 600x400x320 mm ID 565x365x315 mm	2.25 kg	3.00 mm	65

5. Placement of Filters:

In each set of filters, 6 nos. of crates are provided. At the bottom 2 nos. filter tank crates should be placed in line adjacent to biogas on plane surface. Stacked with fine mesh filter in middle and HDPE mesh filter on top. Additional 100 mm "T" joint or 100 mm PVC elbow joint as per convenience can be used specially for prefabricated HDPE biogas plant outlet.



6. Marking:

All the crates will be distinctly marked with stickers with the following information: -

- (a) Manufacturer's name, initials or recognized trademark;
- (b) Product code and capacity of filtration in liters per day along with unique serial number of the unit as a mark of identification by the manufacturer which shall be clearly visible while installation; and
- (c) Lot or Batch number and year of manufacture along with GST bill number of authorized vendor or supplier appointed by manufacturer.

7. Accessories:

Filters will be supplied with 25mm UPVC fittings. Male thread adaptors (3nos), female thread adaptors (3nos.), Ball valve and pipe of 1 feet. "T" joint or 100mm PVC/ Elbow joint as per convenience for prefabricated HDPE biogas.

8. Connection of Filters:

Filter Tank crates are connected with each other through 25mm UPVC fittings. Outlet is provided to the Filter Tank with 25mm ball valve.

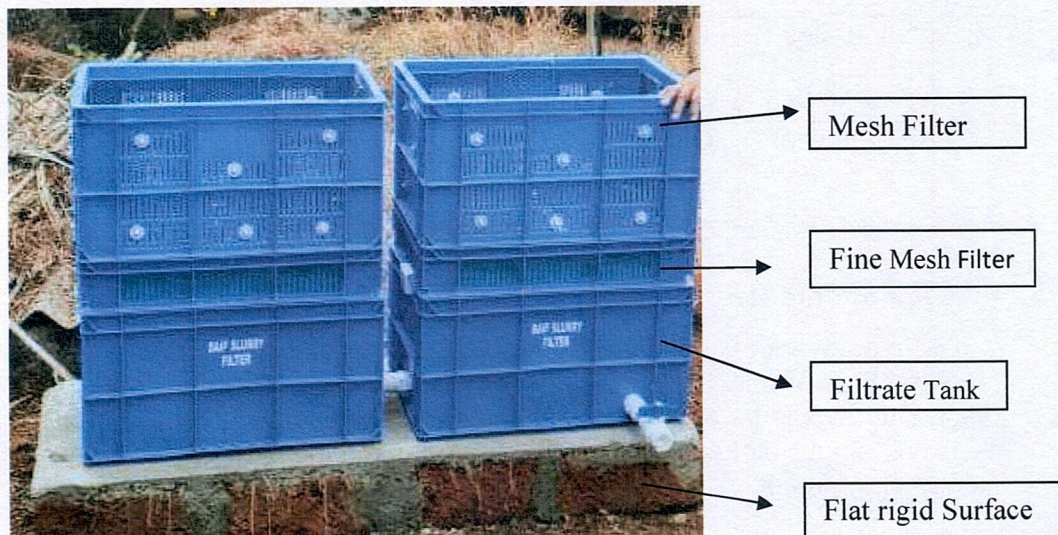
9. Installation:

Detail Installation guide and user manual including **do's & don'ts** will be provided in local/ regional languages. Availability of Biogas Slurry Filter is to be ensured by the developer to the PIAs and other stake holders/beneficiaries within 1 month of demand/order.

10. Warranty: Minimum 5 years from the date of installation.

11. Operations Procedure for Biogas Slurry filter Unit:

- (a) As shown below in the picture, the slurry filter system consists of 3 layers, in this the upper tray is called "**Mesh filter**", the middle one is called as "**Fine Mesh Filter**" and below tank is called "**Filtrate tank**".



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- (b) The liquid coming out of the slurry is deposited into the Filtrate tank and thus the filter placed above contains only the dried slurry/cake.
- (c) The liquid collected inside the filtrate tank is channeled out through the pipe. The filtered liquid is drip enabled and microbially rich. This can be used as organic fertilizer in soil diluted together with water. It can also be utilized for spraying, drip irrigation, sprinkler and through rail guns through proper dilution.
- (d) After loading digested slurry from biogas into these filters. Solids will be collected in mesh filters and in fine mesh filter while liquid will be collated in filtered tank.
- (e) Usage for Fixed dome/Deenbandu biogas plants: Digested slurry from biogas should be collected from the existing slurry sump by a container and fed to one set of mesh filters. The cake from the filter can be removed after 48 hrs cycle. In the next cycle after 24 hrs, second set of mesh filters can be loaded and evacuated again after 48 hours.
- (f) Usage for HDPE Prefabricated floating type biogas units: Mesh Filters can be placed below the biogas outlet on plan and even surface. Once the Mesh filter crates is loaded with slurry then need to slide to the other half of filters by replacing with empty mesh filter.
- (g) Please ensure that the mesh filter is kept on top of Fine Mesh Filter, so that the liquid from the slurry gets filtered out to filter tank.
- (h) Both mesh filter and fine mesh filters should be cleaned with fresh water after each use.
- (i) The above stated procedures must be carefully carried out on a daily basis.
- (j) To ensure proper functioning of filters proper (1:1) consistency of digested slurry should strictly be maintained. For newly commissioned biogas plant, the slurry filter works efficiently after 30 days.

