OFFICE MEMORANDUM

The Undersigned is directed to refer to MNRE Administrative Sanction-cum-Guidelines of NNBOMP No. 253/16/2017-BIOGAS dated 30.05.2018 and the continuation of the same issued vide Order dated 11.06.2020. Based on the field evaluation report from beneficiary and long term field trials under the supervision of the Biogas Development and Training Centers (BDTCs), the design for the 2 M$^3$ PVC Coated Flexible Type Prefabricated Biogas Plants approved under the New National Biogas and Organic Manure Programme (NNBOMP).

2. The undersigned is directed to say that this PVC coated 2 M$^3$ PVC Coated Flexible Type Prefabricated Biogas Plant and it’s specifications as per Annexure-I developed by M/s. S P Eco Fuel, Anand, Gujarat, will be eligible for implementation under the New National Biogas and Organic Manure Programme (NNBOMP).

3. 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 (PIAs).

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

Encl: as above.

(S R Meena)
Scientist- “D” (Biogas)
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E mail: meena.sr@nic.in

To,
M/s. S P Eco Fuel, Anand, Gujarat

Copy to :
   i. Heads of all the State Programme Implementing Agencies (PIAs);
   ii. CEO, Khadi and Village Industries Commission, Mumbai;
   iii. Chairman, National Dairy Development Board, Anand;
   iv. PIs of all 8 Biogas Development and Training Centres (BDTCs); and
   v. Manufacturer/Developer of flexi domestic biogas plant model.

Copy for kind information:
   i. PPS to JS(DDJ), MNRE.
   ii. PPS to JS& FA MNRE.
Technical Specifications for 2 M³ PVC Coated Flexible Type Prefabricated Biogas Plants

1. **General Specification:** 2 m³ PVC Coated Polyester yarn based flexible Type Prefabricated biogas plant with inlet pipe, inlet connections, outlet pipe, outlet connections, gas pipe and Biogas Double Burner.

2. **Material Construction:**

   2.1 Material of construction used should be PVC coated on Polyester yarn based woven fabric broadly in line with specifications of materials as per IS: 7016 methods of test for coated and treated fabric of BIS, New Delhi.

   2.2 The material of construction of Biogas digester and Gasholder shall be such that it does not show methane gas permeability, flame retardant, low soiling behavior, UV stabilized, weather resistant and should have good welding properties.

   2.3 It does not impart any color, odour nor any toxic effect and contaminate biogas slurry.

   2.4 The Biogas balloon shall be manufactured such that its breaking strength shall be as given below when tested as per IS 7016 II (1981):

      (a) **Tensile Strength (Kg./5 CM)**Warp - 240  Weft – 220

   2.5 The Biogas balloon shall be manufactured such that its tear strength shall be as given below when tested as per BS 3424 Part 5 Method 7A:

      (a) **Tear Strength (Kgs)** Warp - 35 Weft -30

   2.6 The material shall be flame resistant and shall pass all the test when tested as per DIN 75200.

   2.7 The materials shall not leak at 220 PSI test pressure as per IS 7016.

   2.8 The material used for prefabrication/ construction of such Biogas plants shall be guaranteed by the manufacturer to have a minimum useful life of 10 years.

3. **Gas generation Capacity:** 2 Cu. Mtr. per day.

4. **Overall Dimensions:**

<table>
<thead>
<tr>
<th>Model</th>
<th>Digester volume</th>
<th>Gas storage volume</th>
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<tbody>
<tr>
<td></td>
<td>Dimensions (m)</td>
<td>Dimensions (m)</td>
</tr>
<tr>
<td></td>
<td>Height</td>
<td>Diameter</td>
</tr>
<tr>
<td>2 M³</td>
<td>1.55</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Area required for installation of digester: 4 sq. m.

5. **PVC Coated Polyester Fiber based Flexible Balloon Type Biogas Plant:** The PVC Coated Polyester Fiber based Flexible type prefabricated Biogas plants should have broad features / specifications as under:

   a. The total minimum weight of the PVC Coated Polyester Fire based Flexible balloon: 760 Gram/ Sq. Mtr. (±10 %)

   b. The plant has provisions for inlet and outlet connections at suitable location with maximum effective volume.

   c. Pressure booster pump has suitable capacity to ensure the transfer of gas from Balloon to the stove with minimum delivery pressure of 150 mm WC.
d. There are safety provisions to avoid damages and ingress of slurry in the pump in case the gas is completely used, and the pump is still in running condition.

6. **Inlet Pipe:** Inlet pipe for shall have the following dimensions:

Dia.110 mm (4 Inch.), Length: 1.55 m of UPVC/PVC

7. **Outlet Connection:**

i. The Outlet connection and the outlet Pipe shall have the following dimensions:
Dia.110 mm (4 Inch.), Length: 1.5 m PVC

ii. Gas Pipe shall be of minimum Diameter- 15 mm, Length: 30 m., PVC braided Medium Density polyethylene (MDPE)

8. **Booster Pump:** Booster Pump shall be rated to operate at 230 V, 20 Watts with a Minimum flow rate of 20 LPM (1.2 m³ per hour).

9. **Accessories:** Twin Burner Stove with gas valve (BDTC approved), Cow Dung Mixture Drum (100 litre capacity), Moisture Remover, Lighter (1 No. each).

10. **Finishing:** The internal and external surface of the Balloon shall be smooth, clean and free from other hidden internal defects, such as air bubbles, scratches and metallic or other foreign material inclusions. The welded joints shall be of smooth edges

11. **Marking:** All the Biogas plants manufactured shall be distinctly marked with the following information:

   (a) Manufacturer's name, initials, or recognized trademark
   (b) Product Code and Capacity in Cubic Meter along with daily quantity in Kg. of cattle dung to be fed along with unique serial number of the unit as a mark of identification by the Manufacturer which shall be clearly visible after installation.
   (c) Lot or Batch number and year of manufacture.
   (d) The above detail from "a to d" shall be printed on the external surface of the Biogas Digester during manufacture.

12. **Installation:** Installation and commissioning of Biogas plant shall be done by the manufacturer's authorized and trained personnel. The beneficiaries of biogas plants shall be provided "Operation and maintenance" Manual in the printed form/ version along with warranty and guarantee clauses.

13. The Manufacturer of the Biogas plant shall bound to carry out any further required change(s) in these approved model of biogas plants, as and when felt necessary and asked by the Ministry (MNRE), including those required for formulating a new BIS Standard for Standardization of such models of Biogas plants.