

## **“Do It Yourself Biogas Kit” as “Bio-STP (Sewage Treatment Plant)” an alternative to the Conventional STP tank for Public Toilets in Cities & Towns and Toilets in Tribal Areas...**

There are existing public toilets that are expected to eradicate open defecation, keeping in mind the requirements of Indian sanitary practice.

Why do the people do not use public toilets in India?

- Incomplete toilets, those without access to water or unclean
- Poor maintenance, no ownership to keep the toilets clean, no light available
- Contractor-built toilets are of poorer quality

These public toilets can be fitted with a bio-digester tank of suitable capacity. The bio-digester tank / Bio-STP is an anaerobic tank which digests organic material biologically. Life bacteria (Anaerobic Bacteria) is linked with the availability of nutrients/ feed material. Even if the feed material is not available, bacteria survive but do not multiply/reproduce.

The public toilets can be **connected directly to the Bio-STP**, eliminating any hassle or mess. The Bio-STP needs to be a lower level than the toilets. The Bio-STP can save costs for the Municipality and be used as a septic tank for new public toilet installations. The Bio-STP also **has a much smaller footprint than a septic tank**.

The Bio-STP unit will be based on the numbers of public toilets in the cluster. Since we would be inputting toilet waste into the Bio-STP via the Bio-Toilet we can go up to 30 flushes per day with a single Bio-STP unit. The Bio-STP can be a **full off-the-grid operation** wherein one flushes the toilet using a manual pump which **takes water from a standing water source**. It does not need to be connected to a water or sewage line.

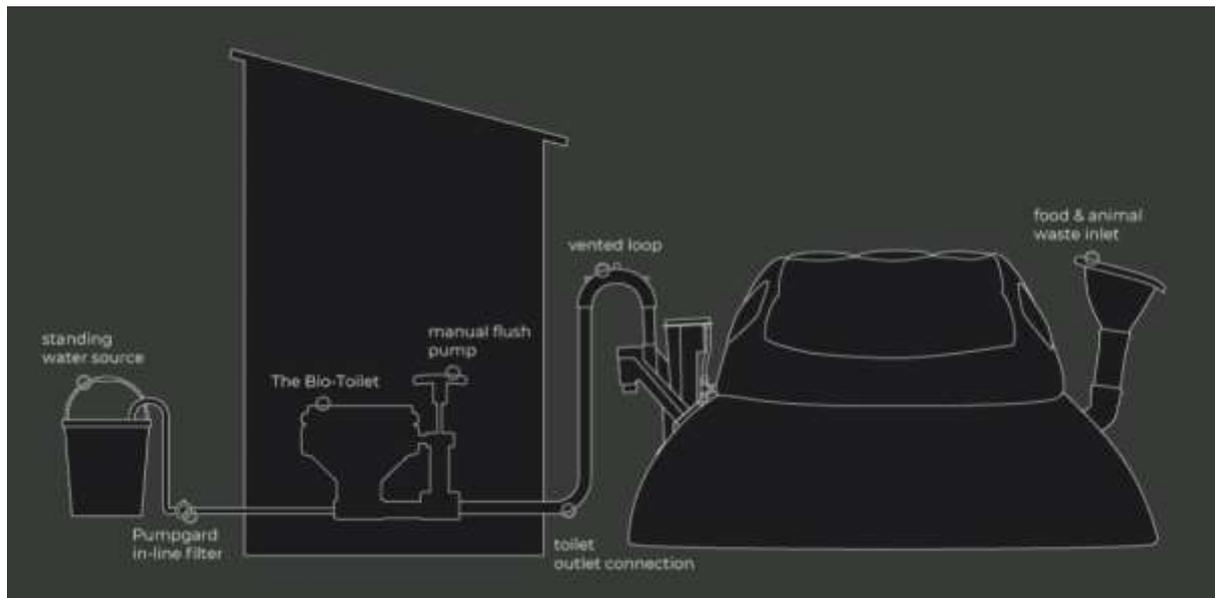
The biogas produced by the Bio-STP can be used to **power the lights in the public toilets**.

Unlike many compost toilets, the Bio-STP breaks down the waste in a completely sealed ecosystem, **so there is no smell**.

Effluent is the liquid that comes out of the fertilizer outlet of the Bio-STP system after the waste has been digested to produce biogas. The **effluent should be diverted directly to a treatment solution without potential for user contact**.

There are 3 options to manage the effluent -

- Option 1: Divert effluent back into your existing sewage infrastructure
- Option 2: Divert effluent into your existing septic tank
- Option 3: Construct a small-size drain field



### Benefits of using the “Bio-STP” plant –

- Generates Biogas and liquid fertilizer that can be used for irrigation of nearby gardens and lawns etc.
- Eco-friendly & Hygienic than normal STP
- Very Simple Design and Easy to Install and Work on
- Operational within 4 to 6 hours of installation time
- Low Cost Solution to conventional STP plant
- “Near Zero” Maintenance, continuous Biological process
- No Foul Smell
- No dependence on limited and costly conventional energy sources
- Off grid, No Electricity Required (Saves Lots of Money)
- Biogas can be used to light the toilets in the night