

# Production of Biogas from Textile Mill Waste



## Introduction

Cotton textile mills generate about 80,000 - 85,000 tonnes of solid cellulosic wastes popularly known as **Willow-dust** and **Cyclone-dust**. These waste materials are rich in cellulose and suitable for biogas production. CIRCOT has developed methods to produce biogas from these materials both by a semi-continuous fermentation process and a batch fermentation process.

## Semi-continuous Process

### Advantages

- ✓ Only one digester
- ✓ Low capital cost

### Disadvantages

- ✓ Charging everyday
- ✓ High water requirement
- ✓ Slurry handling difficult
- ✓ Low solid loading

## Batch Fermentation Process

### Advantages

- ✓ Charging every 20th day
- ✓ Water requirement very less
- ✓ High solid loading
- ✓ Readily usable bio-manure

### Disadvantages

- ✓ High capital cost
- ✓ requirement of a series of digestors

## Salient Features of the Process

Total raw material requirement	100 tonnes/annum
Space requirement	100 m <sup>2</sup>
Total capital cost	Rs. 5 - 6 lakhs
Total gas generation	100 m <sup>3</sup> (equivalent to 3 LPG cylinders of 14.5 kg)
Total Income (gas + manure)	Rs. 2 lakh / annum
Running cost	Rs. 40,000 / annum
Net income	Rs. 1.6 lakhs / annum

The wastes generated in mill canteen can be fed directly in the above plants with increased biogas production.



Semicontinuous Biogas Plant

# CIRCOT Consultancy

For setting up biogas plants in textile mills, CIRCOT undertakes consultancy which includes preparation of detailed engineering drawings, installation of plants and monitoring gas production for one year.



*Batch Process Biogas Plant*

**For further details contact :**

The Director  
Central Institute for Research on Cotton Technology  
Adenwala Road, Matunga, Mumbai 400 019

Tel. : 412 7273, 412 7276, 415 7238, 415 7239,  
418 4274 & 418 4275

Fax : 022-413 0835

Gram : TECHSEARCH

E-mail : [circot@x400.nicgw.nic.in](mailto:circot@x400.nicgw.nic.in) (or)  
[circot@vsnl.com](mailto:circot@vsnl.com)