"Biogas Generation - A Climate Neutral Project"

Presented by

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The accumulation and unhygienic handling of organic wastes create several environmental problems including the emission of dangerous gases to the atmosphere. Organic waste water discharged from houses and other institutions also emit poisonous gases through anaerobic fermentation. Methane is the main gas generated by the anaerobic fermentation. This is 22 times more dangerous than Carbon Dioxide. The timely treatment of organic materials help to avoid such emissions.

Biomethanisation Technology

Anaerobic biomethanation / bio gas technology helps to treat the organic waste materials hygienically with out causing atmospheric pollution. Through this Biogas, a valuable renewable energy and organic fertilizer can be produced . Treated biomaterials, coming out from the digester of the treatment plant, in the form of liquid or solid can be used as a very good organic fertilizer. This organic fertilizer helps to minimize the use of chemical fertilizer. The reduction in the use of chemical fertilizer will avoid the emission of CO2 that would otherwise be coming out from the fertilizer producing industries.

The biogas technology enables one to produce bio energy by treating the wastes generated in the houses and public places like markets, slaughter houses, hotels, convents etc .

Use of biogas as cooking fuel helps to reduce the use of fossil fuels. This way the emission at the time of burning of fossil fuels can be minimized and also helps to control deforestation by way of replacing fire wood with biogas.

Through the installation of domestic and institutional type bio-waste treatment biogas plants, the emission of methane can be controlled to a considerable extent. To achieve this goal every house , public & private institution should come forward to install decentralized bio-waste treatment biogas plant.

With the experience of several years in the field of implementing decentralized waste treatment projects, BIOTECH had installed more than 22000 family size bio-energy plants in houses as well as bigger capacity plants in several public and private institutions including 52 wastes to electricity projects. These plants help to reduce the emission of poisonous gases to a great extent.

Domestic Bio waste treatment Biogas Plants: -

These plants are suitable for the treatment of all bio degradable wastes and organic waste water generated in the houses. The biogas generated from this plant can be utilized for cooking purposes . It is sufficient to meet more than 50% of the energy required for cooking everyday. A One Cum Biogas plant is sufficient to control the emission equivalent to 3.5 Metric tones of CO2

TECHNICAL DETAILS OF 1 CUM FAMILY SIZE BIO WASTE TREATMENT PLANT

Waste Treatment Capacity	-	2 Kg Solid waste & 20 – 30 Litres of organic Waste Water
Volume of Digester	-	1000 Litres
Suitable for	-	3 - 5 member family
Space required for the installation	-	1.25 Sq Mtrs.
Gas generation per day	-	1 Cum Biogas
Liquid fertilizer generation	-	20 Litres per day
1 Cum Biogas	-	0.5 Kg. LPG
Annual income in the form of gas & manure	-	Rs. 12,000/-
Annual Biogas generation	-	365 Cum
Generation of 365 Cum Biogas	=	Emission reduction of 3.5 tones CO_2
Revenue from CDM	-	3.5 Credits / year

OPERATION OF PLANT - Bio Waste Materials from kitchen is collected in a bucket / dustbin along with organic waste water. It is poured in to the Inlet chamber of the plant. Bio Gas generated is stored in the gas holder. The flow of gas from gas holder to the stove (Utilization Point) is made possible by opening the control valve on the gas holder.

Portable Pre fabricated Plants: - BIOTECH had already designed portable plants for being used in places where installation of plants on the ground is not possible .

Institutional & Night soil Biogas Plants

These type of plants are designed to cater to the needs of hostels, schools, convents, hospitals, industrial organizations etc. The organic wastes including night soil (human excreta) generated will be treated in an eco friendly manner for production of biogas.

Generation of Electricity from Waste

The organic waste generated from public institutions like Market and slaughter houses etc can be used for the generation of electricity through the installation of treatment plants . 1.5 KW electricity can be produced from one cubic metre of biogas. The main advantage of waste to electricity project is that, no external power is required for the operation of the plant. The power generated in the treatment plant can be utilized to meet the in-house requirements and also for providing lights in the markets and streets.

History of waste to electricity projects in Kerala

BIOTECH had successfully completed the installation of 52 power generation projects using market / slaughter house wastes. The power generation capacity of these plants ranges between 3 KW to 20 KW.

BIOTECH – Organizational Background

BIOTECH started functioning from 1994. The main activities include promotion, implementation, training, R&D, and also the creation of awareness to the people in the field of environmental protection, conservation of energy and production of renewable energy through hygienic waste management.

Different models of plants for the treatment of waste have been designed and developed by BIOTECH, according to the requirement of the consumers and nature of waste available. These models cater to the needs of different categories of beneficiaries such as domestic households, public institutions like hospitals, schools, hostels, convents etc. and also Local Body Institutions like Panchayats, Municipalities, Corporations etc. In recognition of our selfless services to the society BIOTECH was honored by conferring on it the prestigious International Ashden Award “GREEN OSCAR 2007”.

SERVICES RENDERED BY BIOTECH

Joint venture opportunities, Technology transfer, Technical Advice, Consultancy Service, Conducting Feasibility Study, Preparation of Project reports, Implementation of Projects, Technical support for regular operation of the plants and Training programmes .

In what way can we contribute to climate protection

The general public are depending upon the centralized projects for the treatment of organic waste. We believe that, this is the responsibility of Panchayaths, Municipalities and other government bodies.

Most of us are constructing good houses and providing good education to our children. But we do not seriously think about their hygienic living conditions for the future . The life of the coming generation on earth will become difficult mainly due to the atmospheric pollution. It is our paramount responsibility to provide better atmosphere to our children .

Instead of depending on the government for all environmental protection activities, why can't we ourselves think of being a part of climate protection activities. Installation of bio-waste treatment, bio-energy generation plants in houses and all institutions are the ideal projects to contribute ourselves for the protection of our Mother Earth.

We are of the view that if similar decentralized waste treatment plants are installed all over the country, it would be helpful to reduce the impact of climate change and also accelerate the production of renewable energy and organic fertilizer apart from treatment and disposal of organic wastes. Let us work together, Thank you

For further information

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