



Waste To Energy The Best In Alternate Energy

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'Global Warming', 'Ecological Imbalance', 'Climate Control', 'Environmental threats', 'Carbon Emission', etc. are the most threatening words for the last few years across the globe. Seriousness of these words and related issues has still not percolated into many government bodies, corporates and of course, to common man. On the other side, there are many public and private agencies associations & scientists started talking about the word "Go Green!"

Different sources of alternate energy are: Solar Energy, Biomass, Wind Onshore, Wind Offshore, Photovoltaic, Thermo Electric, Kinetic and of course, the Biogas. The major difference, rather advantage of bio-digester energy compared to all the above different types of alternate energy sources is that biogas projects solve two serious issues being faced by the world management of waste and requirement of energy.

Bio Methanisation - The Technology



The technology we are talking about is treatment of organic waste. Organic waste includes all kinds of biodegradable substances like food waste, green grass, vegetable waste; waste from fish, mutton, chicken, slaughterhouse, etc. sewage waste, sugar factory waste and any other material which gets degraded biologically into the nature.

The technology of bio methanisation is also known as anaerobic digestion because the conversion of waste into methane is happening in sealed chamber of the plant in which oxygen does not exist. Once we fill up waste with water – either treated or gray water! – Many microorganisms get involved in the process of anaerobic digestion, including acetic acid-forming bacteria and methane-forming. These organisms feed upon the initial feedstock, which undergoes a number of different processes, converting it to intermediate molecules, including sugar, hydrogen, and acetic acid, before finally being converted to biogas. The bacteria living optimally at temperatures between 35 and 40 °C are called mesophiles or mesophilic bacteria. Methanogens come from the domain of archaea.

Once methane is formed during the process of anaerobic digestion, it is collected into a gas collector and then it will be scrubbed and purified. This gas can be converted to cooking gas or can be compressed and converted to automobile fuel for vehicles. If this gas is sent to 100% biogas based turbine which will convert the gas into electricity.

Green House Gas Emission (GHG)

GHG such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. Gases that trap heat in the atmosphere are often called GHG. The principal GHG that enter the atmosphere because of human activities are Carbon Dioxide (CO²), Methane (CH⁴), Nitrous Oxide (N²O) and Fluorinated Gases. These gases are typically emitted in smaller quantities, but because they are potent GHGs, referred to as High Global Warming Potential gases (“High GWP gases”).

Clean Development Mechanism (CDM)

As per the Kyoto Protocol, CDM allows industrialized countries to invest in carbon emission reduction wherever it is cheapest globally. Between 2001 – 2012 (during the Kyoto commitment period), the CDM is expected to produce some 1.5 billion tons of carbon dioxide equivalent (CO²e) in emission reductions. Most of these reductions are through renewable energy, energy efficiency, and fuel switching. Carbon capture and storage (CCS) was included in the CDM carbon offsetting scheme in December 2011.

Domestic Plants

Every individual house generates kitchen waste, food waste and sewage waste. Instead of ignoring this as merely waste, you can convert the same into energy.

Domestic plants are made out of strong fibre glass material, which can withstand any climatic condition for years together. We have prefab plants of different sizes, which can treat from 2 kgs of waste per day to 15 kgs of waste per day, ideal for a family of 4-5 members to a cluster of villas wherein you have 20-25 members live in. Institutional plants are of bigger sizes with capacity of 100 kgs of waste to 200 tons of waste treatment per day. These plants can be custom made according to each requirement, based on the space availability, shape of the land, etc.

Carbon Emission Reduction (CER)

A central authority, which is usually a department designated by the government of each country sets a limit or cap on the amount of a pollutant that can be emitted. The cap is allocated or sold to firms in the form of emission permits which represent the right to emit or discharge a specific volume of the specified pollutant. The total number of permits cannot exceed the cap, limiting total emissions to that level. Firms that need to increase their emission permits must buy permits from those who require fewer permits. Transfer of these permits is referred to as a trade. In effect, the buyer is paying a charge for polluting, while the seller is being rewarded for having reduced emissions. Thus, in theory, those who can reduce emissions most cheaply will do so, achieving the pollution reduction at the lowest cost to society.

There are few trading platforms, through which CERs can be traded. Carbon credits and carbon markets are a part of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). One carbon credit is equal to one metric ton of carbon dioxide. There are companies that sell carbon credits to customers who are interested in lowering their carbon footprint on a voluntary basis. These carbon off-setters purchase the credits from an investment fund or a carbon development company that has aggregated the credits from individual projects. Buyers and sellers can also use an exchange platform to trade, such as the Carbon Trade Exchange, which is like a stock exchange for carbon credits.

