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Brief Report of Biogas Plant

In order to combat the worldwide garbage epidemic and satisfy local energy needs, Invertis University has built biogas plants as environmentally friendly energy sources. Invertis University has setup a biogas plant behind the mess in which the garbage is turned into thermal energy which is used for heating and cooking. A substitute for cooking gas (LPG) is bio-gas, which is a gas made of methane and a small quantity of carbon dioxide and is produced from food waste, decomposing organic matter and kitchen waste. Biomethane, a renewable natural gas, can be produced using environmentally friendly technology. University has been taken measures for the alternate sources of energy for helping the environment free from harmful pollutants.

The biogas plant converts organic waste and dung into clean, inexpensive fuel that is pollutant-free and clean, as well as organic manure that is applied to our fields. A better alternative to expensive and dangerous chemical fertilizers is biogas slurry, a liquid organic fertilizer. In addition to offering a different source of energy and liquid organic fertilizer, the installation of a biogas plant has directly replaced the use of LPG cylinders, cow dung cakes, and firewood. It is a fuel that may be used in any weather for cooking. Biogas is about 20% lighter than air and has ignition temperature in the range of 650⁰ to 750⁰ C. It is odourless and colourless gas that burns with clear blue flame like that of LPG gas. Its calorific value is 20000 kJ/m³ and burns with 60% efficiency in a conventional biogas stove.

Biogas contains around 55-65% of Methane, 30-40% carbon dioxide. In this way we utilize all kitchen and food waste for generation of biogas in our university.
The details of biogas plant are as follow:

- **Biogas feedstock**

At Invertis the Biogas feedstock is sourced from any biodegradable materials such as food waste of mess, café and hostels and from the organic waste of trees and plants. The gas production varies from one feedstock to the other as well as the speed of digestion.

- **Biodigester**

A biodigester is a container that receives a daily input of the waste, and within which the manure mixed with water is fermented, producing methane-rich biogas, as well as a natural and ecological fertilizer which is further used in nourishing the greenery of our campus.

- **Biogas**

The biogas is a mixture of different gases (Methane, carbon dioxide, oxygen, sulphur etc..) produced by bacteria in an anaerobic environment and can be used as a source of renewable energy. The biogas produced from the plant is used for cooking purposes in hostel.



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