

Bio Gas: New Way of Smart Technology

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Abstract: As we all know the growth in the population and the rate of the daily needs products and other things are rapidly taking a vast change in the outer environment as we all know our country is has a population of more than 130 crores and many villages are suffering from financial losses, food damage, money shortage, etc. many of the villages are also facing problem in making food as they cannot afford the regular prices of gas connection but many years ago in many parts of the village biogas was used as a source of gas supply to the villages and this technique has now taken place in the modern time to make our environment eco-friendly and make people live a healthy life. In today's topic, we will discuss the new era of biogas and how to make it useful for the people of the villages.

Keywords: Biogas, technology, villages, environment, green land, source, study, technique.

1. Introduction

Biogas is a mixture of gases primarily consisting of methane carbon dioxide and sulfide produced from raw materials such as agricultural waste plant material sewage green waste and food waste. It is a renewable energy source. Biogas is produced by anaerobic digestion with an anaerobic organism or methanogen inside an anaerobic digestion biodigester or a bioreactor. Biogas is primarily methane CH_4 and carbon dioxide CO_2 and may have small amounts of hydrogen and carbon monoxide CO that can be combusted or oxidized with oxygen. This energy release allows biogas to be used as a fuel it can also be used in a gas engine to convert the energy in the gas into electricity and heat

Biogas can be compressed after the removal of carbon dioxide and hydrogen sulfide the same way natural gas is compressed to CNG and used to power motor vehicles in the United Kingdom for example biogas is estimated to have the potential to replace around 17% of vehicle fuel it qualifies for renewable energy subsidies in some parts of the world. Biogas can be cleaned and upgraded to natural gas standards when it becomes bio methane. Biogas is considered to be a renewable resource because its production and use cycle are continuous and it generates no net carbon dioxide. As the organic material grows it is converted and used. It then regrows in a continually repeating cycle. From a carbon perspective, as much carbon dioxide is absorbed from the atmosphere in the growth of the primary bio-resource as is released when the material is ultimately converted to energy.

2. Production

Biogas is produced by microorganisms such as methanogens and sulfate-reducing bacteria performing anaerobic respiration biogas can refer to gas produced naturally and industrially



Fig. 1.

1) Biogas plant

A biogas plant is a name often given to an anaerobic digester that treats farm wastes or energy crops it can be produced using an anaerobic digester air-tight tank with different configurations. These plants can be fed with energy crops such as maize silage or biodegradable waste including sewage sludge and food waste. During the process, the microorganism transforms biomass waste into biogas and digested with other the wastewater is co digested with other residuals from the dairy industry sugar industry or brewery industry. For example, while mixing 90% of wastewater from the beer factory with 10% cow the production of biogas was increased by 2.5 times compared to the biogas produced by wastewater from the brewery only.

Table 1
Typical composition of biogas

Compound	Formula	%
Methane	CH_4	50-80
Carbon dioxide	CO_2	15-50
Nitrogen	N_2	0-10
Hydrogen	H_2	0-1
Hydrogen sulfide	H_2S	0-0.5
Oxygen	O_2	0-2.5

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Fig. 2. Biogas fuel station



Fig. 3. Biogas plant

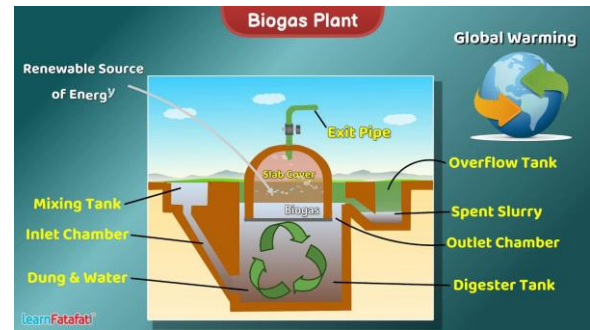


Fig. 4. Biogas plant

3. Conclusion

Biogas can make the environment ecofriendly and by improving the stability of the process and making it cheaper can make it easily available for the people of the village. And as well it can bring new technology to the cities and other countries by using the biogas, we will keep our environment clean and useful.

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