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Fuel Generation Through Sewage

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***Abstract*—**A Country like India has been acute slowdown in the ongoing and coming quarters due to inflation, increasing in fuel prices,lack of energy, trade war. Fuel plays an vital role in the development of the country and economic. India with the population of around 135 crores require around 4.7 million barrels a day which is totally purchased by OPEC. OPEC is the the organization of oil producing mandate which have the power for controlling the el production and rates around the world. INDIA totally rely on these resources around the world. These cause a serious unbalance in the economy. The greenhouse gases are serious pollution factors in the environment..

***Keywords*—**Energy, Slowdown, OPEC, Greenhouse gases,Fuel

I. INTRODUCTION

1.1 General= Fuel is needed in all aspects of life and hence forms an essential part of human well-being. Nationally and internationally organizations and institutions are making efforts to provide adequate supply of potable development. India has witnessed a rapid increase in the urban population during last few decades. All towns and cities are augmenting fuel supplies to meet the increasing energy demand. To overcome this demand a sustainable source of fuel can be obtained from sewage gases

1.2 Introduction of Sewage Gases= Sewer gas is a complex mixture of toxic and nontoxic gases produced and collected in sewage systems by the decomposition of organic household or industrial wastes, typical components of sewage. Sewer gases may include hydrogen sulfide, ammonia, methane, esters, carbon monoxide, sulfur dioxide and nitrogen oxides

1.3 Objectives

- **Solution to fuel**
- **Usage of renewable source**
- **Reduction of green house gases**
- **Green cycle**
- **Bio methanation**
- **Multi object optimization**

1.4 Parameters At Inlet

II. TABLE 1: Chemical analysis of Sewage water

SEWAGE PARAMETERS INLET	RESULTS	PARAMETERS LIMIT
PH	6.9	7
BOD	300 MG/L	100 MG/L
COD	600 MG/L	200 MG/L
TOTAL SUSPENDED SOLIDS	400 MG/L	25 MG/L
OIL AND GREASE	5MG/L	-

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II. EQUIPMENTS AND METHOD

2.1EQUIPMENTS:

1. .Tanks
2. : Uasb Reactor
3..Online Monitoring Device
4. Ballon
5. Cascade Compressor
6. Gas Holding Tank

2.2METHOD OF EXPERIMENT:

A fresh sewage sample of 1 litre is taken in bottle of 2.5 litre and kept for duration of 5 days where the anaerobic digestion will be taking place and the gas generated will be then stored in the bottle and can be used as and when required for cooking and heat purpose

3.CALCULATION:

For every gram of BOD removed in the system around **300 ml** of methane gas is supposed to be produced.

Sewage which can be treated in the above system for producing the methane gas 9 MLD

For every litre = 200 mg/l BOD removed

For every litre = 200 x 300 = 60000 ml

= 60 L of methane gas which compressed in ratio of 1/600 is equal to 0.1 m^3 of liquid gas

II. CONCLUSION

This experiment meets conclusions as follow:

- Sewage can be used as a green fuel
- The volume of gas generated changes with respect to time and chemical properties
- Properties of sewage can be broadly classified and monitored by replacing the Online Monitoring Systems and FOREMS for calculating the properties for sewage
- Wide question of methane a probable replace to fuel can be solved
- Green cycle can be maintained without major changes in the system

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