

Domestic Biogas SWOT Analysis

Strength Weakness Opportunity Threat

Strengths:

- Renewable Energy
- Biogas plants prevent deforestation.
- Solves Organic Waste disposal problem
- Kills harmful pathogens

Dumping of the organic waste in the streets or dump yards leads to the spread of disease causing organisms like Salmonella sp, E. Coli & Shigella sp which causes diseases like Typhoid Fever, Diarrhea, Shigellosis and other air born diseases. The above mentioned pathogens are killed by the fermentation process (Anaerobic Digestion of the organic waste by Methanogenic microbes in the absence of oxygen) in the Biogas plant because most of the diseases causing pathogens are Aerobic in nature.

- The manure obtained from biogas plant has higher nutritive value as compared to that of ordinary farmyard manure.
- Reduces Global warming & Carbon Foot Print

Throwing away the organic waste in the streets or dump yards causes emission of CH₄, N₂O & CO₂ which are the major greenhouse gases that cause global warming. Among those, CH₄ is the third most important greenhouse gas after N₂O and carbon dioxide (CO₂) and has a Global Warming Potential (GWP) 25 times that of CO₂ & N₂O which has the GWP 310 times that of CO₂. In Biogas plant, the greenhouse gases generated (mainly CH₄) is used for cooking/power generation thereby reducing global warming.

- Generates Gas used for Cooking, lighting & Electricity generation
- No foul smell
- Easy to relocate the plant
- One time investment
- Safer than LPG
- No Maintenance

Weakness:

- Biogas generated will be in atmospheric pressure

The above mentioned demerit can be overcome either by placing a counter weight or by using pressure boosters based on the capacity of the biogas plant in order to reach the target pressure.

Opportunities:-

- 50 to 100% of LPG replacement
- Solves organic waste disposal problem
- Biogas plants keep the household and surroundings clean and green.

Threats:-

- Either the organic waste is not continuously fed or over fed into the biogas plant will lead to less or no generation of biogas and results in feeding the Inoculum (cow dung) again in order to make the plant function.

It is very clear from the above mentioned SWOT analysis that the strengths and opportunities are more when compared to the weakness and threats which can be easily overcome through different operation mechanisms.