

# Analyzing the Landfill Gas Industry

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## Abstracts

With the increasing global focus of energy conservation and stress on clean generation, Landfill Gas has emerged as a source which is available backdoor, is proven to be economical in cost perspective and is a growing energy resource in the modern world. The mounting advent of mega cities with their generation of mega tones of waste materials coupled with their growing energy consumption needs, has forced civilization to take a deeper look at understanding energy recycling in every form as available at many sources like a sum total zero equation.

Realizing the potential of this, as of January 2005 there were 375 LFG energy (LFGE) projects in the United States, generating clean electricity or providing a direct-use energy source for boilers, furnaces, and other applications. Approximately 100 direct-use LFGE projects in operation burned over 70 billion cubic feet (bcf) of LFGE in 2004. According to the US Environmental Protection Agency's (EPA) Landfill Methane Outreach Program (LMOP), there are still over 600 landfills that are viable candidates for project development, with a potential gas flow capacity of over 280 bcf per year.

Looking at LFG in technical terms, it is a byproduct of the decay process carried out on LFG at municipal solid waste (MSW) landfills. The gas generated from such landfills is an approximate composition of 50% methane and 50% carbon dioxide, coupled with some additional trace compounds. The source heat value of LFG ranges from 400 to 600 British Thermal Units (Btu)/cubic foot and can be adapted to burn in any number of applications by carrying out minor adjustments to fuel/air ratios. The applied usage of LFG provides comprehensive economic and environmental benefits and the users of LFG have achieved significant cost savings compared as compared to their earlier use of traditional fuels. This has mainly been due to the fact that LFG costs are composed of consistently lower costs than the cost of natural gas.

Secondly, the presence of 50% methane in LFG presents a strong environmental case

of consuming the gas by burning it as a industrial or residential fuel rather than allowing it's release in the environment which affects us by causing the green house effect. This will help us build a sustainable future with communities and economic progress intact.

Aruvian's R'search's report Analyzing the Landfill Gas Industry pertains to the basics of understanding the composition, natural production and transportation of Landfill Gas in the normal economic model. The report analyzes the limitations to the production of LFG and the best periods to capitalize on the generation of the gas. Certain hazards posed by this gas which warrant safe usage practices along with the procedures to assess the potential biohazard any landfill site presents before LFG can be harvested from it.

Any energy analysis is not complete without understanding the environmental impact of that energy source and the technologies deployed for the effective treatment of this energy resource in order to make it safe, clean and usable. The report also analyzes the control measures used in order to utilize LFG as an effective energy tool after the recovery and storage of LFG leading to energy generation. The report also analyzes certain case studies of such implementation of LFG processes.

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