

## **Firwin Industry Series – Landfill Gas Energy** **Turning Garbage into Green: A Win-Win Proposition**



What if you could take three of the major concerns of the 21st century – greenhouse gases, waste disposal, and sky-rocketing energy prices, and combine them into an environmentally-friendly source of “green” energy? Sounds like a politician’s dream? More and more cities are turning this dream into a reality. By turning to landfill gas generation, environmentally unfriendly landfills are being converted into sources of clean energy.

### **What is Landfill Gas?**

Landfill gas is produced by the decomposition of organic waste, such as kitchen waste, inside a landfill. The resulting gas is composed primarily of methane and carbon dioxide, with traces of other gases.

Methane gas is a highly potent greenhouse gas if released into the atmosphere untreated. Landfills often have to resort to burning the methane to prevent its dispersal into the atmosphere. Other potential issues surrounding landfill gas include unpleasant odors, air quality, and the migration of explosive vapors into the soil surrounding the landfill.

Harnessing landfill gas to produce power provides a source of green energy that would otherwise have gone to waste. In addition to addressing the air quality concerns around the landfill, the power generated by the landfill lowers the consumption of fossil fuels that would otherwise have been needed to provide the equivalent amount of energy.

### **How is Landfill Gas Harnessed?**

The process of drilling for landfill gas is done via a series of collection wells installed throughout the landfill. A network of pipes transports the collected gas from the wells to the power plant. Once at the power plant, the gas is cleaned of impurities before being sent to a reciprocating engine. Combustion of the gas in the engine powers a generator which produces electricity for the power grid.

