

Estimating landfill gas potential

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Research suggests that landfill gas-recovery projects should be implemented quickly if the maximum amount of methane gas is to be retrieved from organic waste in as short as time as possible, according to a study published in the latest issue of the *International Journal of Environment and Waste Management*.

Through appropriate management, landfill can be used to generate an alternative fuel gas containing that has half the caloric value of natural gas. Landfill gas (LFG) comprises approximately 50% methane and 50% carbon dioxide. However, such management requires significant investments before project commencement with no guarantee of how much methane can be generated and on what timescale.

Ed McBean, Professor of Engineering and Canada Research Chair, at the University of Guelph, in Ontario, Canada, has assessed the rate at which LFG is produced by the Villa Dominico Landfill in Buenos Aires, Argentina. This landfill, as is common in landfills in the developing world, has a high [organic matter content](#) and is very moist. In these conditions, landfills generate LFG through anaerobic biodegradation of food and other [organic waste](#) at a high rate, 73% of the total LFG produced in the first five years after refuse placement and 93% within a decade.

"The implications for landfills are that LFG recovery projects must be implemented quickly before the gas is lost to the atmosphere," says McBean. LFG can be used for generation of electricity, heating of greenhouses, and production of boiler fuel as well as precluding direct

release of this [greenhouse gas](#) into the atmosphere. That said, upfront investment amounting to millions of dollars is required for infrastructure construction to utilise LFG. "The accuracy of multi-year projections of the recoverable quantities of LFG is of paramount importance," McBean adds. His new model for estimating LFG potential of a given [landfill](#) could address this issue.

More information: "In-situ estimation of the methane generation rate for a wet and highly organic solid waste landfill" in Int. J. Environment and Waste Management, 2011, 8, 123-132

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