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## Assessment of Methane Flux from Municipal Solid Waste (MSW) Landfill Areas of Delhi, India

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### ABSTRACT

Carbon dioxide, methane and nitrous oxide are the major Greenhouse Gases (GHG's), which emit from landfill areas and contribute significantly to global warming. Moreover, that the global warming potential of methane is 21 times higher than that of carbon dioxide and it has highest generation (60%) than other gases. Therefore, there is immense concern for its abatement or utilization from landfill areas. Compared to the west, the composition of municipal solid waste (MSW) in developing countries has higher (40% - 60%) organic waste. This would have potential to emit higher GHG's from per ton of MSW compared to developed world. Beside that landfills areas in India are not planned or engineered generally low lying open areas, where MSW is indiscriminate disposed. This leads to uncontrolled emission of trace gases, foul smell, bird menace, ground and surface water pollution etc. Due to scarcity of land in big cities, municipal authorities are using same landfill for nearly 10 - 20 years. Hence, the possibility of anaerobic emission of GHG's further increases. In the present paper we had quantified the methane emission from three MSW landfill areas of Delhi i.e., Gazipur, Bhalswa and Okhla. The results showed that the range of methane emission various in winter from 12.94 to 58.41 and in Summer from 82.69 - 293 mg/m<sup>2</sup>/h in these landfill areas. The paper has also reviewed the literature on methane emission from India and the status of landfill areas in India.

### KEYWORDS

Landfill, Municipal Solid Waste, GHG Emission, India

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