

Quantification of Methane Emissions from Solid Waste in Oman Using IPCC Default Methodology

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Abstract : Municipal Solid Waste (MSW) disposed in landfill sites decompose under anaerobic conditions and produce gases which mainly contain carbon dioxide (CO₂) and methane (CH₄). Methane has the potential of causing global warming 25 times more than CO₂, and can potentially affect human life and environment. Thus, this research aims to determine MSW generation and the annual CH₄ emissions from the generated waste in Oman over the years 1971-2030. The estimation of total waste generation was performed using existing models, while the CH₄ emissions estimation was performed using the intergovernmental panel on climate change (IPCC) default method. It is found that total MSW generation in Oman might be reached 3,089 Gg in the year 2030, which approximately produced 85 Gg of CH₄ emissions in the year 2030.

Keywords : methane, emissions, landfills, solid waste

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