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EFFECTIVE STRATEGIES FOR MINIMIZING GHG EMISSIONS FROM MUNICIPAL SOLID WASTE MANAGEMENT IN NIGERIA

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Abstract

Recent studies on municipal solid waste management in Nigerian cities have indicated that the existing strategies are inadequate to cope with the increasing amount of wastes being generated by a growing population. However, none of them has comparatively assessed the environmental performance of different municipal solid waste management strategies. This study employed a publicly available tool - the Solid Waste Management Greenhouse gas model to carry out this assessment. The emissions from current or base case disposal strategies (10.7 Mt CO₂eq/yr) were much higher compared to an enhanced scenario featuring a low percentage of material recycling and energy recovery (8.3 Mt CO₂eq/yr), and a second optimized scenario employing enhanced material recycling and energy recovery (3.5 Mt CO₂eq/yr). The economic and environmental benefits of promoting material recovery and recycling of municipal solid waste components and the deployment of advanced technologies with energy recovery are highlighted.

Key words: energy recovery, greenhouse gas emissions, municipal solid waste, recycling

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