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Ouda, O.K.M., Raza, S.A.

Waste-to-energy: Solution for Municipal Solid Waste challenges- global perspective

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Abstract

Current global Municipal Solid Waste (MSW) generation level is 1.3 billion tons per year, and is expected to increase to approximately 2.2 billion tons per year in 2025. This amount may result in significant health, environmental, aesthetic, land-use resources, and economic concerns if not managed properly. Waste to Energy (WTE) is a viable option for disposal of MSW and energy generation. This paper presents a brief review of WTE technologies; reviews the current market status of the WTE; and forecasts the potential global annual investment in this sector. The research findings show that incineration is the dominant technology utilized to date. Advanced technologies such as Plasma Arc Gasification are gaining momentum in developed countries, whereas biomethanation technology is expanding at a high rate in developing countries in the last decade. Globally, WTE will play a significant role in minimizing MSW challenges and will contribute to the emerging renewable energy market in the near future. © 2014 IEEE.

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