

## The Implementation of Incineration for Waste Reduction

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**Abstract :** The purpose of this paper is to review the waste generation and management in different parts of the world. It is undeniable that waste generation and management has become an alarming environmental issue. Solid waste generation links inextricably to the degree of industrialization and economic development. Urbanization increases with the economic wealth of the countries. As the income of people and standard of living enhances, so does their consumption of goods and services, leading to a corresponding increase in waste generation. Based on the latest statistics from What A Waste Report published by World Bank (2012), it is estimated that the current global Municipal Solid Waste (MSW) generation levels are about 1.3 billion tonnes per year (1.2 kg per capita per day). By 2050, it is projected that the waste generation will be doubled. Although many waste collection practices have been implemented in various countries, the amount of waste generation keeps increasing. An integrated solid waste management is needed in order to reduce the continuous significant increase in waste generation rates. Although many countries have introduced and implemented the 3Rs strategy and landfill, however, these are only the ways to diverse waste, but cannot reduce the volume. Instead, the advanced thermal treatment technology, incineration, can reduce up to 90% volume of disposed waste prior to dispose at landfills is discussed. Sweden and Tokyo were chosen as case studies, which provide an overview of the municipal solid waste management system. With the condition of escalating amount of wastes generated, it is crucial to build incinerators to relief pressing needs of landfill. Two solutions are proposed to minimize waste generation, including one incineration in one city and several small incinerators in different cities. While taking into consideration of a sustainable model and the perspectives of all stakeholders, building several incinerators at different cities and different sizes would be the best option to reduce waste. Overall, the solution to the global solid waste management should be a holistic approach with the involvement of both government and citizens.

**Keywords :** Incineration, Municipal Solid Waste, Thermal Treatment, Waste generation

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