
Appendix 5 – Sample Abstract

ABSTRACT OF THESIS

Thesis title: Theoretical analysis of the amount of energy that can be produced from MSW. A case study of the city of São Paulo - Brazil

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The population has been reached 7.8 billion in 2020, in this way, studies carried out revealed that the population is estimated to reach 8.8 billion by 2030. because of this population growth the MSW generation around the world was estimated to be 1.3 billion tons, with an annual growth projection reaching 2.7 billion in 2050. Specifically in Brazil, daily generation was 224.000 tons/day in 2022 with a projection of 331.232 tons. day¹ for 2050, and a population of 214.3 and 233 million inhabitants respectively. The management of Municipal Solid Waste (MMSW), according to Khan et al. (2022) is a fundamental and indispensable public service for humanity, for the MSW there are 3 ways to be disposal thermal route (gasification, pyrolysis, incineration), bio-conversion route (anaerobic digestion, composting), and landfilling. The main objective of this thesis is to theoretically present, based on the available literature, an overview of the potential for the energy use of MSW in São Paul - Brazil. Showing the data found in studies already carried out, thus exemplifying the estimates of the theoretical potentials of electric energy generation by the following systems. (1) generation of electricity from incineration; (2) electricity generation from gasification; (3) electricity generation from landfill gas. The methodology adopted for the development of this thesis was the deep search in with the information available online, whether through journal articles, or master and doctoral dissertations. After examining all the data, it is evident that WtE by gasification produced the greatest results, with an average production of 3579,030 GWh for MSW collected from households and 13.41 GWh for waste collected in storm drains. The amount of electricize generated can supply the energy needs of approximately 370,308 people, as well as the capital of the state of Espírito Santo, for instance.

Keywords: MSW generation, public service; Electric energy generation.

