

Characterization and Recycling Potential of Municipal Solid Waste in Ambala

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Abstract—Municipal Solid Waste Management (MSWM) is a crucial issue in urban areas, as it poses environmental, health, and economic challenges. Safe collection, transportation, and treatment are the main problems facing Indian cities. India generated 1,60,389 TPD of MSW in the year 2020-2021, and the collection efficiency was 95.4%; only 50% of the waste was treated, and 18.4% was landfilled. In this paper, Ambala, with a population of 1.1 million, is taken into consideration for the characterization and analysing the recycling potential of municipal solid waste. Ambala is also known as the "city of scientific instruments" of Haryana because of the immense development in the fields of science and technology. In this paper, an attempt has been made to review the quality, physical composition, and chemical composition of the MSW generated in Ambala city. The city generates an average of 273 tons per day (TPD). Wet waste accounted for around 50% of the waste generated, followed by recyclable waste such as paper, plastic, and metal, which accounted for around 42% of the waste generated. The average net calorific value of municipal solids is 2500 kcal/kg, with less than 50 mm particle size found in the city. The proposed measures in this paper will help decision-makers and municipal authorities establish an effective and environmentally friendly waste management system.

Keywords: MSW in Ambala, MSW characterization in Ambala.