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Assessment of Demand and Potential Associated with Solid Waste Management in Emerging Cities: The Case of the City of Rio das Ostras, RJ

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Abstract

The rapid urban and population growth observed in some Brazilian cities in recent years, associated with the troubling framework of management of municipal solid waste (MSW) in the country has as a consequence environmental problems that tend to gain scale in the future. Note that there is a technology and management lag relative to some efficient models adopted in developed countries that use waste as a feedstock in power generation and maintains high standards of environmental control. Therefore this paper addresses, holistically, the problems of urban waste management, as well as the main routes that can be taken to advance the department in accordance with the guidelines of the National Solid Waste. For a closer view of reality, a case study was conducted in the city of Rio das Ostras, RJ, where was diagnosed a scenario that, despite being above the national average, is still far of desirable standards characterized by difficulties in meet the growing demand, large wastage of materials and lack of adequate treatment for most waste. Based on collected data in the field and in the literature, were made projections of future scenarios considering population growth. It was estimated that if nothing is done, the city will need to triple its garbage disposal capacity in less than 10 years. On the other hand, from some actions and investments, is possible to reverse this framework using the economic and energy potentials associated with the management of MSW generating countless benefits to the city. Actions such as separating waste for recycling, installing biodecomposition centrals and framing the landfill as CDM were considered most advantageous to be implemented in the short term considering the factors of technical, economic and environmental involved. Yet, not rule out the use of heat treatment for some types of materials, and eventually even to the RSU. However, it was concluded that a new approach of municipal administrations, especially those growing cities, it is possible to manage the waste more efficiently resulting economic advantages and also protecting the environment.

Keywords: *waste management, MSW, urban growth, environment, waste to energy*
