

Life Cycle Assessment of Municipal Solid Wastes: Development of “Wasted” Software

By Rodrigo Diaz

ABSTRACT

This thesis introduces WASTED (Waste Analysis Software Tool for Environmental Decisions). It is a computer-based model that uses life-cycle assessment (LCA) methodology to estimate material flows and environmental impacts of municipal solid waste management.

The model consists of a number of separate submodels that describe a typical waste management process. These models are combined to represent a complete waste management system. Based on LCA methodologies, WASTED uses compensatory systems in order to account for the avoided impacts derived from energy recovery and material recycling. In this manner, a comprehensive “cradle-to-grave” analysis of waste management is possible.

The purpose of this project is to provide waste managers, environmental researchers and decision makers with a tool that helps them to evaluate waste management plans and to improve the environmental performance of waste management strategies.