Evaluation of Best Available Techniques for The Selected Integrated Solid Waste Plant Using Life Cycle Assessment

Abstract:

The Industrial Emissions Directive addresses the best available techniques (BATs) through BREF documents to be implemented in various processes to achieve the least environmental impact at a minimal cost. Waste management BREF is one of those and describes numbers of BATs for various waste processing stages. These BATs are just those guided and the determination of the applicable ones for a given plant is a challenge. In this respect, Life Cycle Analysis (LCA) appears a valuable tool for assessing the environmental impacts of various BAT implementations within the waste management systems, like for many other industrial production systems. Therefore, in this study, LCA will be used to evaluate and identify the most suitable BATs for the selected Closed Integrated Solid Waste Separation, Processing and Power Generation Plant, in Turkey. Functional unit will be selected as 1 ton of waste processed and calculations will be made accordingly. Waste inventory will include the real input and output data obtained from the selected plant to be studied. Moreover, the system boundary will be defined as gate to gate for the entire facility as well as for the individual processing units. LCA will be conducted with the help of SimaPro software which is the most widely used tool while performing environmental impact assessments.

By: Elif İrem Köse

Advisor: Filiz Bengü Dilek