

Integrated Waste-to-Energy Approach: An Overview

Authors : Tsietsi J. Pilusa, Tumisang G. Seodigeng

Abstract : This study evaluates the benefits of advanced waste management practices in unlocking waste-to-energy opportunities within the solid waste industry. The key drivers of sustainable waste management practices, specifically with respect to packaging waste-to-energy technology options are discussed. The success of a waste-to-energy system depends significantly on the appropriateness of available technologies, including those that are well established as well as those that are less so. There are hard and soft interventions to be considered when packaging an integrated waste treatment solution. Technology compatibility with variation in feedstock (waste) quality and quantities remains a key factor. These factors influence the technology reliability in terms of production efficiencies and product consistency, which in turn, drives the supply and demand network. Waste treatment technologies rely on the waste material as feedstock; the feedstock varies in quality and quantities depending on several factors; hence, the technology fails, as a result. It is critical to design an advanced waste treatment technology in an integrated approach to minimize the possibility of technology failure due to unpredictable feedstock quality, quantities, conversion efficiencies, and inconsistent product yield or quality. An integrated waste-to-energy approach offers a secure system design that considers sustainable waste management practices.

Keywords : emerging markets, evaluation tool, interventions, waste treatment technologies

Conference Title : ICMAOFES 2018 : International Conference on Modeling, Analysis, Optimization and Forecasting of Energy Systems

Conference Location : Osaka, Japan

Conference Dates : March 29-30, 2018