

Waste-to-Energy Project Economics and Financing: A Look into the Factors Influencing the Future

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Abstract

This paper focuses on significant changes in the overall economics of waste-to-energy (WTE) during the last 30 years. The WTE industry in this country has seen several different business cycles occur since 1975, as different market drivers have caused the industry to rise and fall. This paper compares: (1) those economic factors that were in play in 1975, when the first WTE facility in the United States was built, and the industry was in its infancy; (2) the factors at play when the WTE industry was at its height in 1990; and (3) some of the factors that caused the industry's steep downward trend since 1994, when the last greenfield WTE facility in the United States was built. The paper will identify changes that have occurred with regard to the pricing of electricity and the ability of public sectors to charge non-market-based tipping fees. The paper discusses the drivers of 2006 and focuses on completed economic factors to be considered when comparing WTE with other waste disposal means. The paper discusses the drivers of 2006 and whether the industry is finally poised to begin an upward turn in the cycle. The paper focuses on the impact of the cost of diesel fuel oil on the overall economics of long-haul transfer, and how that is likely to impact the future development of WTE facilities. The paper also presents a case study of a recent analysis that was undertaken for two counties that were evaluating the financial viability of WTE as compared to other disposal options.

Introduction

The WTE industry in the United States has seen several different business cycles during the last 30 years as different market drivers have caused the industry to rise and fall. This paper compares those economic factors that were in play at the outset of the industry in 1975, how those factors had changed at the height of the industry in 1990, and what economic factors are currently impacting the market. The paper presents recent planning cost estimates on alternative methods of disposing of solid waste and raises the question as to whether current economic factors have changed enough to cause the WTE industry to start a new, although significantly less aggressive, upward cycle once again.

A Brief History – 1975 to 1990

The author has been involved in the preparation of independent engineer's reports used in the financing of WTE facilities since 1974, and has observed several different cycles in the WTE industry during the last 30 plus years. When the 1,500 tons-per-day (TPD) facility in Saugus, Massachusetts was financed in 1975, it was necessary to explain the basic concept of a WTE facility to prospective bond purchasers who were skeptical of its economic viability for a number of reasons:

1. Most municipalities still had a hole in the ground where they were dumping their solid waste. Why would a municipality pay as much as \$20 to \$25 per ton to dispose of it elsewhere?