

Changing Waste-to-Energy in Nashville, Tennessee

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Abstract

For almost 30 years, the Metropolitan Government of Nashville and Davidson County has been relying on one of the more innovative approaches to waste management. Since the early 1970s, the now 1,000 tons per day WTE facility has been the primary energy source for supplying steam and chilled water for a downtown district energy system serving some 39 buildings. A recent review of alternatives has resulted in Metro deciding to close the facility and replace it with a more traditional district energy supply system and at the same time re-engineer its solid waste management programs to include more efficient collection and recycling programs.

This paper will present the planning process and analysis that were done; describe the key factors that led to Metro Nashville's decisions; detail the procurement and development process that has been initiated; and outline the timetable for implementing the decided upon changes. The authors believe this case study will provide insights for other WTE projects that from time to time struggle with peaceful co-existence with other elements of integrated solid waste management.

The authors have been serving as advisors to Metro throughout this process. Mr. Gershman has recently been designated by Metro as its overall Project Manager for its District Energy System.

Overview

For the past 30 years, the Nashville, Tennessee metropolitan area has relied on one of the most innovative approaches to waste management – the utilization of the energy in municipal solid waste (MSW) to heat and cool buildings in the City. The system was operated by the specially created Nashville Thermal Transfer Corporation, known as Thermal. Since the early 1970s, Thermal has been operating a waste-to-energy plant in downtown Nashville that produced and distributed chilled water and steam to 39 downtown commercial and governmental buildings for the purpose of heating and air conditioning, including those of the Metropolitan Government of Nashville and Davidson County (Metro) and the State of Tennessee. The WTE plant began operation in 1974 with expansions in 1976 and 1984. Until recently, the Thermal facility had the rated capacity of 1050 tons per day of refuse, which produced energy for the generation of 250,000 pounds of steam per hour in 3