

## A New Resource: The Waste-to-Energy Research and Technology Council

Nickolas J. Themelis,

Director, Earth Engineering Center, Columbia University

### Summary

Despite the fact that there are over one hundred Waste-to-Energy (WTE) facilities around the country serving tens of millions of people, there are no industrial or government research centers dedicated to solving problems and improving the WTE technology. In recognition of this fact, the Waste-to-Energy Research and Technology (WTERT) Council was formed in May 2002. Its mission is to link academic researchers and professionals concerned with integrated waste management and energy recovery from wastes and promote R&D that will advance resource recovery by combustion or gasification. This paper reports on the activities of WTERT in its first year and the research directions that have been identified and initiated.

*Keywords:* WTE, Waste-to-Energy, recycling, resource recovery, dioxins, mercury, greenhouse gas, GHG

### Introduction

The Earth Engineering Center (EEC) is part of the Earth Institute at Columbia University. The Earth Institute (1) is one of the world's leading academic centers for the integrated study of the Earth, its environment, and society. It builds upon excellence in the core sciences – earth, biology, engineering, social, and health – and stresses cross-disciplinary approaches to complex problems. Through research, training, and global partnerships, the Earth Institute aims to mobilize science and technology to advance sustainable development. In addition to EEC, the Institute includes the Lamont-Doherty Earth Observatory, the Goddard Institute for Space Studies, the Center for Environmental Research and Conservation, and the International Research Institute for Climate Prediction.

One of the areas of EEC research (2) is the integrated management of wastes (IWM) so as to maximize resource recovery and minimize environmental impacts. New York City has been the working laboratory for various studies that have resulted in several graduate theses and technical papers (3). This work led to two important findings: a) IWM must include both materials recovery, by recycling, and energy recovery, by combustion of the non-recyclable and non-compostable wastes in modern Waste-to-Energy (WTE) plants; and b) there were no U.S. industrial or government research centers dedicated to advancing the WTE technology. The only organization dedicated to helping the WTE industry, the Integrated Wastes Services Association (IWSA, 4), was formed in 1991. However, its role does not include R&D although it has an active technology committee that interfaces with state and federal agencies and promotes the exchange of technical information within the industry.

On the basis of the above findings, in the spring of 2002, EEC and IWSA agreed to found an organization dedicated to advancing R&D in Waste-to-Energy. It is called the Waste-to-Energy Research and Technology Council (WTERT, 3) and its formation was announced at NAWTEC 10. It is therefore fitting to present at NAWTEC 11 a description of the mission and scope of WTERT and its first year activities.