NAWTEC14 Speaker Abstract

Waste-to-Energy - A Source of Clean Renewable Energy and a Process for Reducing Greenhouse Gas and Fine Particulate Emissions

Brian Bahor, QEP
Covanta Energy Corporation

Recent international attention to renewable energy and greenhouse gases has focused on energy security with a key question being "how can a country achieve a greater degree of energy independence while also considering environmental consequences such as global warming". The European Union has concluded that waste-to-energy (WTE) is a valuable source of renewable energy that also provides positive environmental attributes such as recovery of ferrous materials and reduction of greenhouse gases (GHGs). The ability of WTE to reduce GHGs has been determined by several independent evaluations including the USEPA's and RTI's co-developed Municipal Solid Waste Decision Support Tool (DST) which uses life-cycle assessment concepts and methods to quantify the energy and environmental attributes of different MSW management options.

The paper considers how WTE is compatible with other MSW management strategies while also providing a consistent supply of clean renewable energy. The quantitative analysis uses the DST to establish the energy and environmental characteristics of WTE. The environmental analysis includes criteria pollutants (particulate, NOx, SO_2 and CO), air toxics, greenhouse gases (CO_2 and CH_4) and fine particulate ($PM_{2.5}$) precursors.

Policy makers should be interested in having independent quantitative information for both energy and environmental parameters when developing a long range plan for MSW management and renewable energy. These independent results demonstrate that the WTE can be an important component when considering the goal of energy dependence.

Brian Bahor is Director, Environmental Engineering for Covanta Projects, Inc. He joined Covanta in 1987. His is presently responsible for the environmental engineering aspects of municipal waste combustion facilities, and has held positions within Covanta responsible for environmental permitting, ash management, waste characterizations, air emission test programs and air pollution control system test programs. These positions have provided significant experience and understanding of the design and operating aspects of municipal waste combustors. In addition to traditional project tasks, Mr. Bahor is also in his second term as the Technical Chairperson of the Integrated Waste Services Association. Mr. Bahor has a B.S. in Environmental Engineering from The Pennsylvania State University, a graduate certificate in Environmental Process Engineering from Stevens Institute of Technology and a Masters of Science in Management from Stevens Institute of Technology. Mr. Bahor is also a registered Qualified Environmental Professional (QEP) and is a member of the Air and Waste Management Association.