

May 2013

Best Option For Managing Zero Waste “Leftovers”

A quote by Anthony Orlando, CEO of Covanta, in an issue of Waste & Recycling News last year (4/16/12) got Eric Lombardi, Executive Director of EcoCycle in Boulder, Colorado thinking that it might be time to conduct an in-depth environmental impact analysis on the options available to manage materials remaining in the waste stream after maximizing the zero waste strategies of source reduction, recycling and composting. Said Orlando: “We think [our clients should] absolutely [be] pushing the recycling, but then looking to do the best with what’s leftover after that recycling. And clearly, the answer, whether you listen to the [European Union], the U.S. EPA or any kind of policy initiative, the best environmental answer after you’ve recycled is to convert what’s left over into energy.”

Lombardi’s thought turned into action, which resulted in release of new lifecycle analysis report that compares the three most common disposal methods used globally — landfilling with energy recovery, mass burn waste-to-energy or mechanical biological treatment (MBT). The report, “What Is The Best Disposal Option For The ‘Leftovers’ On The Way to Zero Waste,” finds that the most environmentally-sound disposal option for the remaining materials was Materials Recovery, Biological Treatment (MRBT), a process to “pretreat” mixed waste before landfilling in order to recover additional dry materials for recycling and to stabilize the organic fraction with a composting-like process that minimizes greenhouse gas and other emission impacts caused by landfilling. Very similar to the MBT systems used widely in Europe, the goal of MRBT is to capture any remaining recyclables and then create inert residuals that will produce little to no landfill gas when buried. The system can also classify nonrecyclable dry items to identify industrial design change opportunities, which helps to drive further waste reduction.

The analysis used an Environmental Benefits Calculator developed by Jeffrey Morris of Sound Resource Management to compare MRBT, mass burn waste-to-energy and landfill gas-to-energy across seven environmental categories, including climate change, water and air pollution and human health impacts. The MRBT system was shown to be the best choice for a community to dispose of its leftovers because it recovers the greatest amount of additional recyclables, stabilizes the organic fraction of the residuals and reduces the amount of material landfilled. “MRBT is not a replacement or substitution for source separation, but it is a tool for helping communities reduce the environmental impacts of managing their leftovers as they progress on their way to Zero Waste,” notes Lombardi. MRBT infrastructure is also flexible and dual-purposed, able to handle both mixed waste and source separated recyclables and organics, explains the report. This means a community is not tied to feeding the facility a continuous flow of mixed waste over the next several decades. Rather, the MRBT model can adjust to a declining volume of leftover waste and support growth of source separated collection systems. In addition, MRBT infrastructure can be built and operational on a shorter time scale than landfills and

incinerators, and can be modular in size to help communities manage their leftover waste more locally. In addition to Lombardi and Morris, other contributors to the report are Enzo Favoino of Scuola Agraria del Parco di Monza and Kate Bailey of Eco-Cycle. The full report is available at www.ecocycle.org/specialreports/leftovers. The authors will hold two webinars to explain the results and methodology of the study on May 23rd and May 30th.