Solutions 2/8: Dealing with food waste and yard waste

By **Submitted Content** - February 8, 2019

National statistics indicate 40 percent of the food produced in this country goes to waste – this when a significant number of people around the country go hungry. Something's out of whack. Much of the wasted food goes into landfills, or incinerators, which is in itself a waste. Surely there must be better uses for the mountains of organic material we generate.

The town of Princeton in 2011, established a good alternative – the first in the state. For a very modest yearly fee to participants, the town would hire a company to collect residents' food and yard waste, and take it to a composting facility where it could be heated and turned into a fertilizing mulch, to be sold to farms, golf courses and other users of that product.

But there were problems. Too often some of the participants (800 households signed up) were depositing plastic bags and utensils into their compost bins. The carting company did not always deliver the compost collection to a composting facility. The statewide composting infrastructure didn't develop as quickly as was needed. And while the town worked with university researchers to apply for a grant for a local waste facility, it did not win that grant.

Finally, when the town asked for bids to continue collection, the sole bidder was the same company that had been imperfectly operating the program, only now it wanted to charge twice what it had been.

Thus it made sense for the town to pause the program in order to find a better mix of performance and cost.

Coincidently, or maybe as the result of ideas flowing back and forth, Princeton University, and in particular its Office of Sustainability, has also been seeking solutions for the school's food waste. And it has come up with one, albeit still in the early stages of development. The solution is an in-vessel composting system, known on campus as a "biodigester."

About the size of a cement-mixing truck, with a similar rotating vessel, it aerates and mixes collected food waste into what can be used as a Soil Amendment containing organic nutrients that promote plant health (currently the product is being stockpiled). But the campus has a ready need for it with its array of plants, trees and lawns. The initial scale of the collection program is small, serving only the Frist Student Center's food facilities and a few other cafes.

As with many new technologies, there are a few scientific and engineering challenges. The biodigester has limited capacity; a number of larger ones will be needed to serve the entire campus; and the food collected for composting is very high in water content. Wood chips are currently being added to adsorb the excess water in the feed stock, but other solutions are being sought.

In fact, researchers at the university's Andlinger Center For Energy and The Environment, guided by Dr. Michael Bozlar, are working with the Sustainability Office's Gina Talt and graduate student Vincenzo Gentile to devise solutions to the several challenges.

The university has long been patient and careful in its adoption of new energy systems, and it can be assumed it will be equally thorough in developing a response to its food waste.

While the town cannot use the university's biodigester, it can learn from the university's experience. Possibly, in the not-to-distant future, it might make sense for the town to invest in a similar technology to deal with its organic waste.

Submitted Content