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Muscatine Organics Recycling Center will soon offer a new solution to a landfill sized-issue

The old Recycling Center – now the Muscatine Organics Recycling Center – is using Scott Equipment T42 Turbo Separator to help them separate food waste from plastic packaging. The organic waste is used to create fertilizer and renewable natural gas.

By Andrea Grubaugh | Jan 30, 2020

MUSCATINE — The Muscatine Area Resource Recovery for Vehicles and Energy program has taken another step in its renewable energy project.

On Jan. 22, the former Muscatine Recycling Center — now the Muscatine Organics Recycling Center — started using its new machine, the Scott Equipment T42 Turbo Separator, to separate food waste from plastic packaging to boost the amount of methane generated during recycling. Jon Koch, director for the Muscatine Water and Resource Recovery Facility said 20-30% of landfill material is organic waste.

“Food manufacturers end up with this food waste that they can’t get rid of because it has a health hazard to people, so they have to destroy it," he said. "They try to donate as much as they can, but they can’t always give as much as they want to.”

The T42 will help Muscatine convert that waste into energy.

Unwrapping and unboxing packaged food waste by hand would take manpower and time. The T42 uses centrifugal force to separate the two, with the food waste dropping into a container and the packaging being spit back out.

The food waste is trucked to a high-strength waste receiving station at WRRF, where an anaerobic digesting process turns it into natural fertilizer and renewable natural gas, such as methane. That gas can be used to fuel vehicles, or create electricity or heat for buildings.

The digesters work 24 hours a day, and, if continuously fed, they can digest and process waste in an average of 25 days. The fuel generated is burned in WRRF's boilers, but supply exceeds the plant's demand.

The hope is to sell that extra gas by converting it into renewable natural gas, which would earn the city money and renewable energy credit. The recycling center also would earn money from tipping fees when organic waste is brought in.

Koch estimates an income of 15-plus tons of food waste a day from around the region. “Everyone near is targeting this machine for use, so we’re going to have a ton of stuff.”

The T42 can handle 20 tons of food an hour.

“As long as the product is something that can go through it really fast, the machine can work really fast," he said. “The more food on it, the more we want it.”

As for packaging, the T42 can handle plastics and cardboard but can’t take glass containers, so Koch suggests residents with food waste in glass jars dump the waste and throw the glass away.

The T42 Turbo is self-funded by tipping fees. The costs of the machine will be recovered after about four or five years and will generate income after that.

Koch and WRRF are still learning what’s required to sell renewable natural gas to the gas companies. WRRF is doing studies to help with this phase.

Though it may still be a while before they can sell the gas, using food waste to create and then sell natural gas could do a lot for Muscatine, including stabilizing rates for all rate payers in the city, he said.

“That’s kind of what it’s all about,” Koch said, “keeping the rates low for all our rate payers in Muscatine plus doing something good for the environment and cutting greenhouse gas emissions. It’s really a win-win-win.”