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Grind2Energy System and Anaerobic Digestion

The Grind2Energy system was installed in the Andover MA Whole Foods Market in June 2014, and has proven to be a very easy, clean, and green way to handle food waste in the store. Not only was this the first grocery store in the country to use this system, but it was also the first business to use this system in Massachusetts. This required Emerson (makers of the Grind2Energy) to go before the MA Plumbing Review Board to get approval to install the system in the state. They were able to get approval without any problem. We've since added nine more stores, including several city stores; the system works well in spite of any physical plant challenges the site presents.

The system consists of a table and a holding tank. The table (pictured below) is 5' long, and requires plumbing and electrical connections. The food waste is collected in the departments in containers, and then brought to the table and poured onto it. The length of the table gives the team member an opportunity to see anything that is not food and should not go into the grinder – this is one of the big advantages to this system over others we've tried.

Once the food waste is ground up into a slurry, it is then pumped to a holding tank. The tank can be any size, but we've found that the standard 3,000 gallon tank is ideal for holding about 10-17 days' worth of waste at a time. When the tank is outside, we need to add a layer of insulation to it so the slurry does not freeze in the winter. If the tank is inside, this is not necessary.

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This picture is from the South Weymouth store, a shows the insulated blanket that the tank is covered in to prevent freezing. The bottom center of the tank shows the pipe connect that the pump truck connects to when it gets pumped. This is a very quick process, usually taking no longer than 20 minutes.

The slurry is then taken in the pump truck to Jordan Dairy Farm in Rutland MA, where it is mixed with manure from the 750 cows there, along with other food waste. The materials are then anaerobically digested, which produces electricity to power the farm, and also sell back to the grid, as well as a fertilizer that the farm spreads back onto its fields. Heat is also produced, which the farm uses to heat the barns.

This is a picture of the anaerobic digester at Jordan Dairy Farm in Rutland MA. Unlike other forms of renewable energy, these Digesters are not weather-dependent, but run every day.

The benefit of this system is two-fold – it produces electricity, heat and fertilizer – and also keeps food waste out of landfill, which helps the environment in many ways, and keeps us in compliance with the MA DEP Organics Waste Ban.

If an Anaerobic Digester were to open closer to Boston, we have the option to take the slurry to that facility rather than go out to Rutland. For now, the Rutland facility is the closest one to any of our MA or RI stores.