

# How Entsorga's West Virginia Mechanical Biological Treatment Facility Will Work



Entsorga West Virginia, a joint venture between Apple Valley Waste Technologies LLC, Entsorga USA and Chemtex International, last week broke ground on the U.S.'s first resource recovery facility using what's called "mechanical biological treatment (MBT)." The waste-to-solid fuel plant will be located in Martinsburg, W.Va., and is expected to be operational in early 2017.

By using the HEBioT (High Efficiency Biological Treatment) MBT system, Entsorga WV will recover bio-mass, plastics and other carbon-based materials from the mixed municipal solid waste (MSW) stream and convert them into a safe alternative fuel source.

*Waste360* recently sat down with Frank Celli, secretary, treasurer and director of Entsorga West Virginia LLC. and chairman of Apple Valley Waste Services Inc., to discuss the new plant and use of this new waste-to-solid fuel process.

***Waste360: How long has the waste-to-solid-fuel plant in Martinsburg, W.Va. been in the works?***

**Frank Celli:** The project has been in the works for more than five years now. As with most new technologies being introduced to a market, it takes a lot of time to get regulators up to speed and comfortable with the process. It also is a challenge to secure financing for these types of projects so the combination of the two lead to a fairly long process. We expect future projects to proceed much quicker.

***Waste360: How did the project come about?***

**Frank Celli:** Entsorga Italia is based in Italy and has developed plants throughout Europe that produce alternative fuels that are consumed in cement kilns. The parent of Essroc Cement owns and operates a plant in Martinsburg, W.Va. and approached Entsorga about building a plant in the U.S. to provide solid recovered fuel to its recently modernized plant. With the support of Berkeley County, W.Va. and its Solid Waste Authority, Entsorga contacted us at Apple Valley Waste (AVW) with the hopes that AVW could provide the necessary feedstock for the plant.

The conversations evolved into a partnership between the parties. AVW will provide the municipal solid waste feedstock to the facility and as a result of our

management's extensive experience in operating solid waste management facilities. It also will provide certain business services to the project. Entsorga Italia is providing the proprietary technology and support while Chemtex will act as the engineering, procurement and construction contractor to the project. Each partner has an equity stake in the project. Once completed and operational, AVW will serve as the example of what the next generation, vertically integrated waste company should look like without the dependence upon landfills.

***Waste360: How much fuel will the project generate and what will it be used for?***

**Frank Celli:** At capacity, the plant will be capable of producing approximately 50,000 tons of solid recovered fuel annually. That represents approximately 40 percent of the incoming waste with an additional 40 percent being evaporated or recycled. The fuel will be delivered to the Essroc Cement plant and used as a supplement to coal in the production of Portland Cement.

***Waste360: How will it work?***

**Frank Celli:** The facility will use our proprietary MBT process to convert municipal solid waste into an EPA recognized alternative fuel. We will accept waste at the front of the plant, mechanically separate it, utilize a proprietary technology to accelerate the natural biological "drying" process—very similar to composting, and then further process it mechanically to remove recyclables as well as unsuitable items like broken glass and rocks, PVC, etc., ultimately ending up with a high BTU, homogenous fuel product to be supplied to the nearby Essroc cement plant. The process time will be 8-14 days for municipal solid waste to be converted into the "engineered fuel".

We will use various mechanical separation—eddy currents, magnets, overhead crane—and sorting equipment as well as a series of fans to accelerate the natural decomposition of the organic fraction of the waste stream. Once it reaches the appropriate level of dryness to obtain a high BTU value it will be put through additional mechanical refinement and blending processes and be transformed into solid recovered fuel that meets EPA standards as an alternative fuel. Once the process is complete, the end result is considered by the EPA an "engineered fuel" and no longer a waste product. Our Entsorga HeBiot technology is specifically approved as a manufacturing process of engineered fuel, this is a huge differential between our technology and that of others available today.

***Waste360: How long has this process been use?***

**Frank Celli:** There are more than 300 MBT plants located throughout Europe, treating more than 34 million tons of municipal solid waste annually, so this type of technology is already proven. Entsorga's proprietary HEBioT process is what makes this facility stand out. Entsorga has had MBT plants located in Europe for more than 15 years.

***Waste360: What else makes this project unique?***

**Frank Celli:** This is the first plant of its kind to be built in the United States. There have been plants that are converting waste to solid fuel called RDF in most cases in the form of pellets. Our technology takes it to the next level and creates an EPA approved "engineered fuel". This means we will meet certain standards that other facilities cannot meet. In addition, the vertical integration of the model that will be deployed in Berkeley County adds even further to the story. Residential waste collected by Apple Valley Waste will be transported locally to a facility owned partially by the hauler and converted and used within the county as alternative, renewable fuel. This plant will not only have a significant impact on the amount of waste disposed of in landfills but will have a meaningful impact on fossil fuel dependency. It is a "sneak peak" at the next generation of waste collection and disposal in the United States.

<http://waste360.com/waste-energy/how-entsorga-s-west-virginia-mechanical-biological-treatment-facility-will-work>