

# ENTSORGA West Virginia

Martinsburg (West Virginia) | USA

**MBT BIOSTABILIZATION PLANT WITH SRF PRODUCTION**



**MECHANICAL AND BIOLOGICAL TREATMENT PLANT** LOCATED IN MARTINSBURG, WEST VIRGINIA IS DESIGNED TO RECEIVE AND HANDLE MUNICIPAL SOLID WASTE AND COMMERCIAL AND INDUSTRIAL WASTE GENERATED IN **BERKELEY COUNTY AND PRODUCE N.H.S.M. ALTERNATIVE FUELS FOR INDUSTRIAL USERS.**

THIS PROJECT REPRESENTS AN IMPORTANT MILESTONES FOR ENTSORGA, WHICH CONCLUDES A LONG PATH OF RESEARCH STARTED 15 YEARS AGO TO FIND A **SAFE, SUSTAINABLE AND CLEAN ALTERNATIVE TO LANDFILL DISPOSAL**, AND THE FIRST ENTSORGA FACILITY IN NORTH AMERICA.

## PLANT DATA

Company	Entsorga West Virginia LLC
Capacity	105,000 tons/year of Municipal Solid Waste and Commercial and Industrial Waste
Treated waste	Municipal Solid Waste and Commercial and Industrial Waste
Final Output	<b>SRF:</b> 55,000 tons/year <b>Stabilized residual for landfilling:</b> 8,000 tons/year <b>Recyclable Metals:</b> 5,500 tons/year
Start up	March 2019
Plant	Biostabilization Mechanical Biological Treatment with SRF production
Population Served	400,000

## THE COMPANY

Entsorga West Virginia is a joint venture between Entsorga Italia, Biohitech and Apple Valley Waste supporting the development and operations of the first Entsorga proprietary plant in the USA. BioHiTech Global, a technology & service company providing high technology solution for waste management solutions in the East Coast, is partially owned by EntsorgaFin, and is publicly traded as BHTG (NASDAQ). Apple Valley Waste is a full service solid waste company providing waste collection, transfer, recycling and disposal services to residential, commercial and construction customers within the states of West Virginia, Pennsylvania and Maryland.

## THE PRODUCT

Entsorga has provided the technology design and proprietary equipment for operations just for the Mechanical Biological Treatment plant (MBT) which is processing MSW/C&I and post MRF waste streams to an EPA approved NHSM alternative fuel. This \$30 mil project, is demonstrating how an internationally proven circular model can be adapted and delivered here in US within \$50 / ton tipping fees markets .

## THE SOLUTION

Entsorga has supplied a Mechanical Biological treatment plant **Bee with H.E.Bio.T.™ (High Efficiency Biological System)** process to receive 105,000 tons/year of Municipal Solid Waste and Commercial and Industrial waste. The plant, located about 80 miles west of Washington D.C. handles Municipal Solid Waste from Berkeley county, producing **renewable fuel suitable for coprocessing in cement facilities.**

## THE PROCESS

The waste is biodried for approximately **15 days in a biooxidation area** in which, thanks to **forced aeration**, the natural degradation of the organic fraction is accelerated and the material loses most of its water content. The biodrying area is divided into **24 sub-areas**, each managed independently from the others. Each sub-area is equipped with a temperature probe that transmits the data to the **control system (1)**, which **automatically** processes and optimizes the process by intervening on the direction, flow rate and mixing ratio of the air. Subsequently the biodried mass is **mechanically refined** to select the components with the highest energy content (plastic, paper, textile fibres, etc.) from which **SRF (Solid Recovery Fuel) is produced**, removing inerts and chlorinated plastics, with our proprietary opticals sorter **Falcon™ (2)**. The configuration of the refinement steps allows tailoring the quality of the SRF to customer's needs. The **ventilation system** extracts exhausted air from inside the bioreactor and conveys it to the **biofilter (3)** to purify it from odors and other contaminants.



(1) CONTROL SYSTEM AUTOMATIC 24/7



(2) NIR SEPARATOR FALCON™ TO REMOVE CHLORIBNATED PLASTICS



(3) BIOFILTER FOR PROCESS AIR TREATMENT



(4) AUTOMATIC BRIDGE CRANE SPIDER™

## THE FINAL PRODUCT

The final result is a **Solid Recovered Fuel (SRF)** with a high calorific value, in accordance with the EN 15358 standards and which has been classified from the EPA as a “non hazardous secondary material and is traded as a commodity

The main advantage of the Entsorga's **H.E.Bio.T.™** (solution is in the **biodrying process**, unlike other processes where the SRF is produced only by mechanically sorting and shredding waste.



Experience and scientific literature have shown that the moisture embedded in waste waste heavily compromises the final quality of the alternative fuel keeping its calorific value low. The use of high quality, high biogenic content SRF also guarantees the **reduction of greenhouse gas (GHG) emissions** and therefore direct environmental benefits.

## STRENGTHS

- **environmental compatibility: no odor or dust** are released in the surroundings. All operations are kept within slightly depressurized **enclosed areas** to prevent any odor emission form the building
- **reduced operation and labour costs**, thanks to the **complete plant automation** that reduces the need for operator access to the processing areas
- **maximum safety and minimum health impact for operators**, which are not exposed to stale air, dust and any polluting agents
- **low energy consumption** thanks to the use of high efficiency [**bridge crane Spider™ (4)**]

## USED TECHNOLOGIES

Entsorga's Bee™, Bridgecrane Spider™, Biofilter, Prometheus™