THE COMPETITIVE EDGE

Machinex’ years of experience processing various material streams gives us a competitive edge to conquer any waste sorting challenge.
Every waste stream is different and every waste processor has a different set of goals. No one knows that better than Machinex. The Quebec-based equipment company has been working with municipalities and private processors in many parts of the world since the 1980s to build customized material recovery facilities (MRFs) and has earned an expert reputation for processing municipal solid waste (MSW).

Mixed-waste processing is not a new concept for Machinex. Since installing its first MSW processing system in California eight years ago, the company continues to be a worldwide leader in this emerging field. Machinex has the experience that makes material recovery successful for even the most advanced end markets employing waste conversion technologies.

Machinex has proven its ability to adapt its customizable equipment for any waste stream to help customers produce high-quality recyclable commodities and fuel products. Machinex takes a specialized approach to each customer, and the results are evident.

Machinex has the experience that makes material recovery successful for even the most advanced end markets employing waste conversion technologies.

GAME CHANGER
Nortech Waste LLC, Roseville, California
OPENED: 2007
PROCESSING CAPACITY: 135 tons per hour
WHAT GOES IN: MSW
WHAT COMES OUT: recyclable commodities
WHAT SETS IT APART: Visionary. Machinex produced a highly flexible design that incorporated features previously found most often only in single-stream MRFs. It was one of the first times that this combination of technologies has been used in a mixed-waste processing installation. Designed to process up to 2,600 tons of waste per day, the facility is successfully keeping nearly 50 percent of “what comes in the gate” out of the landfill.

When the Nortech facility opened, Machinex built an office near the plant to learn more about this new MSW market and process. Thus, Machinex was close by the process to learn and develop our technology alongside our customer. The plant has been in operation for eight years now, meeting all specifications and requirements.
**THE NEW FRONTIER**  
*Public Power Solutions, Swindon, U.K.*

**OPENED:** 2013  
**PROCESSING CAPACITY:** 15 metric tons per hour  
**WHAT GOES IN:** MSW  
**WHAT COMES OUT:** solid recovered fuel (SRF); or refuse derived fuel (RDF)

**WHAT SETS IT APART:** Meets the standards to produce a solid recovered fuel. The waste-to-fuel preparation facility, Public Power Solutions (PPS), processes 75,000 metric tons of MSW per year. Operational since November 2013, it was the first facility in the U.K. producing SRF using a continuous drying process. The Machinex system segregates a variety of materials from MSW to obtain a final product that meets the standards to produce SRF and, depending on the market needs, to also produce RDF.

Because SRF standards requires between 15 percent and 20 percent moisture content, the material is dried in a rotating drum dryer which also recovers 70 percent of the initial heated air.

**BUILDING ON SUCCESS**  
*Sita, Birmingham, U.K.*

**OPENED:** 2014  
**PROCESSING CAPACITY:** 15 metric tons per hour  
**WHAT GOES IN:** municipal and commercial commingled, dry recyclables  
**WHAT COMES OUT:** recyclable commodities; (SRF)

**WHAT SETS IT APART:** Versatility. Maximizing the recovery of recyclables from a number of municipal and commercial customers, the MRF processes around 80,000 metric tons of material per year.

The facility sorts commingled, dry recyclables to extract the maximum useful resource, including ferrous and nonferrous metals, cardboard, paper, plastic and glass. In addition, a portion of the nonrecyclable material is used to generate SRF on the same site.

**THE NEXT LEVEL**  
*Shanks Waste Management, South Kirkby, U.K.*

**PROCESSING CAPACITY:** 30 metric tons per hour  
**WHAT GOES IN:** MSW  
**WHAT COMES OUT:** recyclable commodities; RDF; and organics for anaerobic digestion (AD)

**WHAT SETS IT APART:** Flexibility. The plant operator can select the most appropriate recyclables to be recovered according to market values and the desired calorific value of the RDF generated. The complete facility for Shanks can process up to 230,000 metric tons per year of residual waste from homes in the Wakefield District, U.K.

The system will segregate a variety of materials from the MSW stream processed at a rate of 30 metric tons per hour. The main goals of this system are to: firstly, obtain a final product that meets the RDF standards; and secondly, separate the organics fraction from the waste stream.

The priority is to remove RDF contaminants while maximizing the organics, ferrous, nonferrous and plastic recovery (film and rigid). The organic fraction segregated by the process will be treated using an autoclave before it is sent to an on-site AD plant.

Machinex also designed, manufactured and installed a recycling facility to process 20 tons per hour of mixed, dry recyclables within the same Shanks waste treatment complex.
The difference between RDF and SRF - Two alternative fuels

Refuse derived fuel (RDF) and solid recovered fuel (SRF) are the product of processing nonhazardous waste to separate the noncombustible from the combustible portion, and preparing the combustible portion into a form that can be effectively fired in an existing or new waste-to-energy plant. A main distinction between SRF and RDF is that SRF is intentionally produced with respect of quality criteria (European standard - EN 15359), whereas RDF is usually a remaining fraction from waste treatment operations.

With 45 years of manufacturing and systems integration experience, Machinex simply delivers superior results.

CONTINUING TO INNOVATE
Levenseat Renewable Energy, Lanark, Scotland
OPENS: 2017
PROCESSING CAPACITY: 42 metric tons per hour
WHAT GOES IN: blend of commercial and industrial waste and MSW
WHAT COMES OUT: recyclable commodities; RDF; SRF
WHAT SETS IT APART: Sophistication. Machinex has been appointed by the global construction company M+W Group to provide a MRF for the energy-from-waste (EFW) project of Levenseat Renewable Energy Ltd. in Lanark, Scotland. The system, which will become operational in 2017, is a RDF and SRF preparation plant designed to process 42 metric tons per hour of a blend of commercial and industrial, and MSW. The MRF will produce a minimum of 100,000 metric tons per year of high-quality RDF as a feedstock for the Levenseat EFW plant, whilst also maximizing both the recovery of high-value recyclables, including ferrous, nonferrous, rigid plastics and paper, and waste diversion from landfill. Furthermore, the system will produce a SRF stream from the super-light and high-calorific, nonrecyclable waste commodities.

To increase and assure the quality of RDF recovered from the stream of fines, which includes wet organic waste, a belt drying technology will be used. This continuous dryer is self-sustainable and will use a small fraction of the heat generated by the waste-to-energy plant located adjacent to the MRF.

EXPERIENCE THE EDGE
Machinex manufactures equipment at its state-of-the-art facility located in Quebec. With 45 years of manufacturing and systems integration experience, Machinex simply delivers superior results.

No matter what a customer’s waste stream or end-product goals, Machinex has been delivering the desired results for decades and continues to innovate and adapt its technology as the waste and recycling industry evolves. Machinex’ proven worldwide track record as well as an experienced staff takes the risk out of the equation.

Fuel preparation for any waste conversion process can be achieved with the right equipment partner on the front end. Whether you are after an RDF an SRF, organics for AD or a combination, Machinex can get you there.

Watch videos of mixed-waste processing projects at www.machinextechnologies.com

1.877.362.3281 | sales@machinextechnologies.com | www.machinextechnologies.com | USA | CAN | UK