

# **A Sustainable Environment: Our Obligation to Protect God's Gift**

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## **How Will Sustainability Affect the Waste Industry?**

Over the past decade, there has been a greater awareness of global environmental issues like depletion of fossil fuels, climate change, water scarcity, and population growth. As a result, more and more organizations have been integrating sustainability into their business strategy to develop, extend or maintain a competitive advantage. Others are doing it because it is the right thing to do. Regardless of the motivation, companies are drastically reducing their generation of waste. What will this mean to the waste industry?

If you consider the classical business model for a manufacturing or service corporation, you have the input of raw materials or knowledge, processing of the inputs, and delivery of the product/service. For a manufacturing company, this refers to inbound raw materials, processing, and delivery of the product, while for a service company most of the activity is in the delivery of the product, which in this case is the service. The waste industry has always been considered a service industry with the service being the collection, treatment and disposal of the waste. With a decreasing volume on which to perform the service, perhaps now is the time for the industry to transform into a manufacturing company.

Rather than collecting waste for the purpose of providing a disposal service, companies should look at the waste as a feedstock to some process where value can be added to generate a product or a more valuable service. Actually, waste companies have been doing this for a long time in their recycling operations. Waste like plastic, glass, aluminum and corrugated cardboard is collected, separated and recycled into a similar material. In addition, yard waste and some food wastes are composted and converted to another product – soil nutrient. For quite some time, waste has also been converted to energy, so this mindset is really nothing new.

With a definite decrease in generated waste as companies strive for “zero waste”, it is imperative that the waste companies or municipalities make a concerted effort to look for more value-added opportunities. It may also be possible to use the waste material as value-added feedstock for the waste company itself. One example is the installation of a waste-to-energy technology at the location where the waste is generated. This could be at a Material Recovery Facility (MRF) or even a wastewater treatment facility. There is a unique technology that takes waste material like corrugated cardboard which has heat value and combusts it to transfer the energy to an air stream through a heat exchanger. The heated air increases in pressure and drives a turbine generator that provides electricity for the waste company.

An excellent example of a waste operation for this technology is a clean MRF. Even though the input to a clean MRF is all recyclable material, a certain percentage becomes a residue and must be landfilled. Even single-stream recycling facilities generate residues of four to ten percent. With this on-site waste-to-energy (WTE) system, the company saves the transportation and landfilling costs of the residue while generating its own electrical power as an offset to what it purchases from the local utility. In addition, this system generates two other energy streams; that of the exhaust gases from the combustion system and the exit gases from the turbine-generator set. Each of these two streams can be used for heating, hot water, air conditioning, or even drying of some other wet waste streams. Municipalities and paper mills each generate a sludge that is very wet but must be disposed, preferably by incinerating. The hot air from this system can dry the sludge and then combust it to produce more hot air for drying.

The waste companies should consider this technology to increase the value of its service proposition. The technology has many benefits including its exceptional efficiency, low maintenance, small size, transportable and very economical.