

# New Business Models in Waste Management

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In our previous [posts](#), we talked about how waste—which has long represented a cost center—is nowadays being transformed into a profit center. From this emerging circular economy, a multitude of new business models are arising. Each of them demonstrate how there are many profitable ways to turn trash into cash and simultaneously be kind to our planet.

In this post we'll dive into a few of these business models, using Regreen machines as an example of how new "smart" waste management technologies fit into the profit picture.

Typically, when businesses talk about corporate sustainability, they are talking about meeting regulatory, marketing, or public awareness goals while trying to minimize impacts on cost. They then use indirect increases in revenue, market value, or corresponding complexity reduction to justify the cost. The idea is to do all of this while benefiting the environment. For businesses that hope to achieve zero waste goals, this means figuring out how to divert waste from landfills by converting it into marketable products. If the revenue to be made from waste can exceed the cost of conversion, then the waste stream can become a profit center. This becomes possible through the use of today's "smart" waste technologies, which allow businesses to profit threefold by 1) selling the materials they 2) used to pay to dispose of, while 3) saving the planet's resources from being wasted.

All along the waste management chain lie costs which can be avoided through the implementation of new and versatile on-site solutions for processing solid waste. Let's paint a picture of what these cost-savings look like using the Regreen Total Waste Processing System as an example...

## 1) Brick-and-mortar businesses pay for waste collection and recycling services

Solution: The Total Waste Processing System allows businesses to process their own waste on-site into marketable products like animal feed, fertilizer, or fuel pellets, thereby freeing them from dependence on waste collection services. Taken one step further, businesses can even use the fuel pellets they create to produce steam, hot water, or air conditioning for their buildings!

## 2) Waste haulers incur transportation costs and fees for dumping waste (aka "tipping fees") at centrally-located Material Recovery Facilities (MRFs), where waste is sorted. These costs are partially transferred onto businesses, who pay haulers for waste collection and recycling services.

Solution: In one example, Material Recovery Facilities who utilize the Total Waste Processing System to produce and sell their own compost on-site (rather than paying other businesses to handle this) can offer discounts on tipping fees to haulers that provide them with a steady supply of organic waste.

## 3) Material Recovery Facilities:

### a) Must pay for labor and other costs involved in the separation and sorting of waste materials for recycling or landfill disposal

Solution: The Total Waste Processing System can handle mixed municipal solid waste (MSW), requiring very little to no sorting of incoming material. It will process over 90% of incoming waste (excluding metals which can be recovered for recycling) into an energy-generating fuel pellet product, such as Refuse-Derived Fuel (RDF). The machine will also recover and filter the liquids from waste to produce gray water for irrigation. This simplifies operations and keeps expenses down while creating a lucrative end-product.

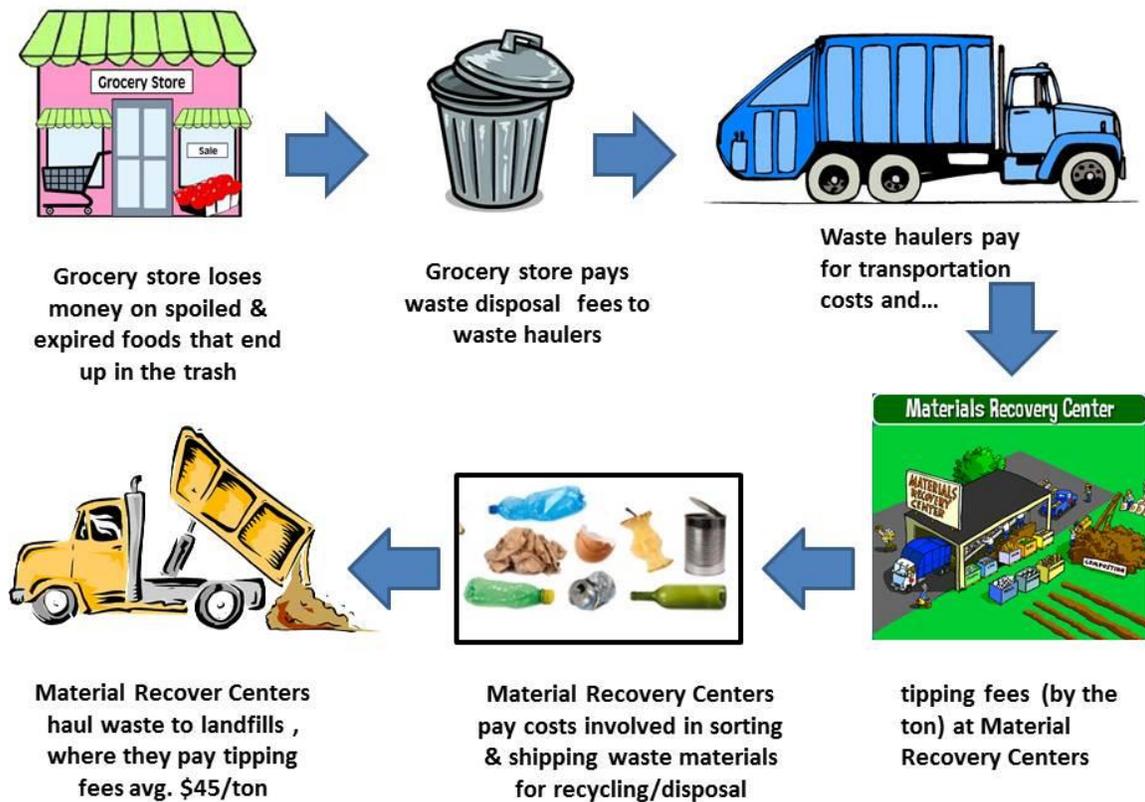
### b) Because they don't have the land capacity required for traditional composting, most

**MRFs pay for composting companies to convert their organic waste into compost**

Solution: The Total Waste Processing System boasts a small footprint and allows MRFs to rapidly process (in 23 minutes!) large quantities of organic waste on-site. This allows MRFs to avoid the cost of paying composting companies to convert this waste. In addition to compost and fertilizer, the machine can also be used to convert organic waste into bacteria- and pathogen-free animal feed products.

Solution: Once MRFs have sorted and processed waste, whatever materials they cannot recover must be transported to landfills which are often located far away. In addition to high transportation costs, landfills will charge a tipping fee that averages \$45 per ton of waste but can be as high as \$100+/ton. The Total Waste Processing System can help MRFs save on these costs by pressing out liquids, which reduces the volume and weight of waste being sent to landfills.

**c) Must pay for waste transportation costs & landfill tipping fees**



By expanding the possibilities and ease of waste recovery, “smart” waste management technologies like the Regreen Total Waste Processing System are disrupting the traditional journey of waste from dumpster to landfill. At every turn, these machines are more efficiently recycling waste, allowing businesses to save on operational costs and generate new cash flow streams at the same time. Now any business has the

power to convert waste into fuel, feed, and fertilizer— commodities that have the potential to sell at more than \$100/ton! When combined with either earnings or savings on tipping fees, the revenues produced by the sale of these end-products and recovered materials (metals, etc.) easily exceed conversion costs and machine installation fees. This is how Regreen’s 3 ton

per hour Total Waste Processor System is able to pay for itself in only 18-24 months.

Let's say a Total Waste Processor is running 15 hours per day at a Material Recovery Facility for one business year (roughly 330 days), processing 75 tons of organic waste per day. Each day it will produce 30 tons of water and 41 tons of pellets that can be used for either fuel or animal feed. With animal feed pellets selling at \$180/ton, the machine will generate roughly \$2.4 million per year. With fuel pellets selling at \$130/ton, the machine will generate roughly \$1.7 million per year.

After factoring in operating costs, payback for the \$3.6 million Total Waste Processor would occur in approximately 2 years or less! This time span could be shortened if income from tipping fees is included in the analysis. Averaging \$45/ton, a plant that processes 75 tons of organic waste per day would generate \$1.1 million per year in fees, which could be used to offset the cost of new equipment.

3 TPH ORGANICS MACHINE (ALL ORGANIC)			
<b>Hourly Output</b>		<b>Revenue/ Year</b>	
<b>Tons/Hour</b>		330 Days of operation	
167%	5.00	Tipped Input	
40%	2.00	Liquid Out in Separator	\$ 1,113,750
60%	3.00	Sent to RG-TWS-03 [nominal capacity of machine]	\$ 2,405,700
10%	0.30	Evap losses in Cooker/Processor	\$ 1,737,450
90%	2.70	Pellets Produced	54%
<b>Daily Output</b>		<b>Payback Analysis</b>	
15 Hours per day		Typical List Price of Machine	
75 Organic only waste handled (tons)		Typical Operating Expenses /Ton	
41 Pellets produced (tons)		Maximum Revenue	
30 Water produced (tons)		Minimum Revenue	
5 Evap losses (tons)		Operating Expenses	
<b>Revenue/Day</b>		Machine Payment (max, 36 month lease)	
<b>Price \$/Ton</b>	<b>From</b>		
\$ 45	Tipping Fees	\$ (618,750)	
\$ 180	Pellets as Animal Feed	\$ (1,368,000)	
\$ 130	Pellets as Fuel	Minimum Net Income	
	Total Rev	Maximum Net Income	
	\$ 3,375	\$ 864,450	
	\$ 7,290	\$ 1,532,700	
	\$ 5,265		

A number of different business models are made possible when "smart" waste management technologies change the game by allowing companies to profit from materials they previously lost money on. For businesses that are hesitant to invest in new equipment, a number of alternatives exist to buying outright. Here are a few we offer at Regreen:

### 1) Leasing

If you are a business that has the space for one of our machines, has existing waste management contracts, or is able to receive tipping fees on organic waste, Regreen can provide you with a system at no up-front cost. And payback doesn't have to be restricted to cash payments. It can come from a percentage of your tipping fee earnings, a portion of new end-product sales, or from

savings on conversion costs that come from using our machines. There are many possibilities. You can even provide us with the end-products you create as payment! Say you are a hotel with a large restaurant and you're looking to process your own food waste on-site but you don't want to handle the hassle of finding a market for the compost you create. We can arrange to pick up your end-products and sell them. The profits from their sales will go towards paying off your loan.

This model also works well for community organizations and nonprofits who want to become self-sustaining and rely less on external contributions to achieve their missions. These organizations can make money while they pay off a machine and after 36 months, they can put all their profit towards having a positive impact on both people and the planet.

## 2) Join-Venture

The joint venture route is another option. This model works best for developing waste-to-energy, recycling, and landfill restoration solutions. A 50:50 joint venture between any local waste management company and Regreen can allow for joint operation of Regreen equipment and revenue-sharing. In this model, Regreen retains ownership of the machine and the waste management company provides the land, waste and operators required to run it. Regreen will deliver machines to the joint venture on an EPC basis. In this business model, revenues from tipping fees and end-product sales are split.

A joint venture is the preferred option if a company possesses local expertise and well-developed relationships in the waste industry. They may already have contracts for waste hauling and are stuck dealing with the high costs of transportation or landfill tipping fees.

The newly-formed joint venture entity will benefit from combining the technological expertise of ReGreen with the domestic expertise of companies located outside of the United States. The international market for small-scale, waste-to-energy plants is strong & expected to grow in developing countries such as India, which is currently exploring possibilities for sustained urbanization via smart city initiatives.

Funding for joint venture projects can be provided by any investment entity that is building a portfolio of clean technology and waste-to-energy assets. Regreen is currently in discussion with several such entities.

## 3) Renting

If you're not in a position to make a longer-term decision about your requirements, have a temporary increase in the volume of waste you are processing, or aren't looking to make a capital investment in equipment, Regreen offers short-term rental option. This model is best-suited for situations where a business is expecting to grow. Monthly rental payments are much lower than lease payments and are designed to help you spread out the cost involved in using the equipment you need. This helps reduce cash flow pressures.

All rental programs include on-site maintenance and assistance with end-product sales. There are additional charges for delivery and installation depending on the model of machine and the delivery location. Regreen offers some "mobile" machines which are mounted on trailers. These come in small capacity sizes and can be rented for as short as 4-6 months at a time. To ensure that you get the best performance from your machine, if you decide to keep the equipment for more than six months, we will arrange to service the machine for you for a small additional fee.

### Conclusion:

The realm of waste management is undergoing big changes. More flexible business models are being made possible by new technologies that make it easier for businesses to extract value from waste.

### References:

[www.calrecycle.ca.gov](http://www.calrecycle.ca.gov)

[Regreen manufactures various machines to convert waste (food, organic, medical, and dirty municipal waste) into dry odorless and germ-free products. This can be further pelletized for fuel, or used for animal feed, compost or fertilizer. These patented and patent-pending machines are available for purchase or lease. The manufacturer is willing to place machines and share the tipping fees and revenue from pellets etc. Please contact [Robin@Regreenus.com](mailto:Robin@Regreenus.com) for details]