



**grind 2 energy**  
An InSinkErator® solution

# FOOD WASTE RECYCLING

Creating Sustainable Energy  
from Food Waste

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# Creating Sustainable Energy from Food Waste

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# WM At-A-Glance



- Formerly known as Waste Management, WM is a Fortune 500 company with services in US and Canada
- Always working for a sustainable tomorrow
- Leading provider in sustainability and integrated environmental solutions
- Committed to constantly improving and innovating with a growth mindset

# InSinkErator At-A-Glance

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- World's leading provider of food waste disposers for home and commercial use
- 1927: John Hammes invents the first food disposer in Racine, WI. 1938: Founded InSinkErator brand.
- For more than 80 years, InSinkErator has been committed to responsible, efficient management of wasted food



in sink erator

Cleaning up since 1938.

Quiet Series | Power Series | Standard Series  
Food Waste Disposers

MADE IN USA

# Grind2Energy Overview

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- InSinkErator Technology
- Designed as an alternative solution to help businesses divert food scraps from landfill
- Grind2Energy has been implemented across the United States

# Synergies As Food Waste Recycling Partners

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- WM and G2E partnered in 2018
- Jointly promote food waste recycling through InSinkerator's Grind2Energy System and WM's CORE<sup>®</sup> facility
- Together we provide a local closed loop solution
- Helping customers achieve their sustainability goals



# Why Recycle Food Waste?

- 35% of all food in the United States went unsold or uneaten in 2019
- The EPA reports that wasted food continues to be the highest single stream material heading to landfills
  - Rotting food in landfills generates  $\text{CH}_4$ , a GHG known to be 25x more potent than  $\text{CO}_2$ , over a 100 yr. period.
- States and cities throughout the country are making efforts to address this challenge including California, Connecticut, Massachusetts, Rhode Island, Vermont, New York, and New Jersey
- NJ Mandate A2371 signed into effect April 2020, requires large food waste generators to separate and recycle food waste

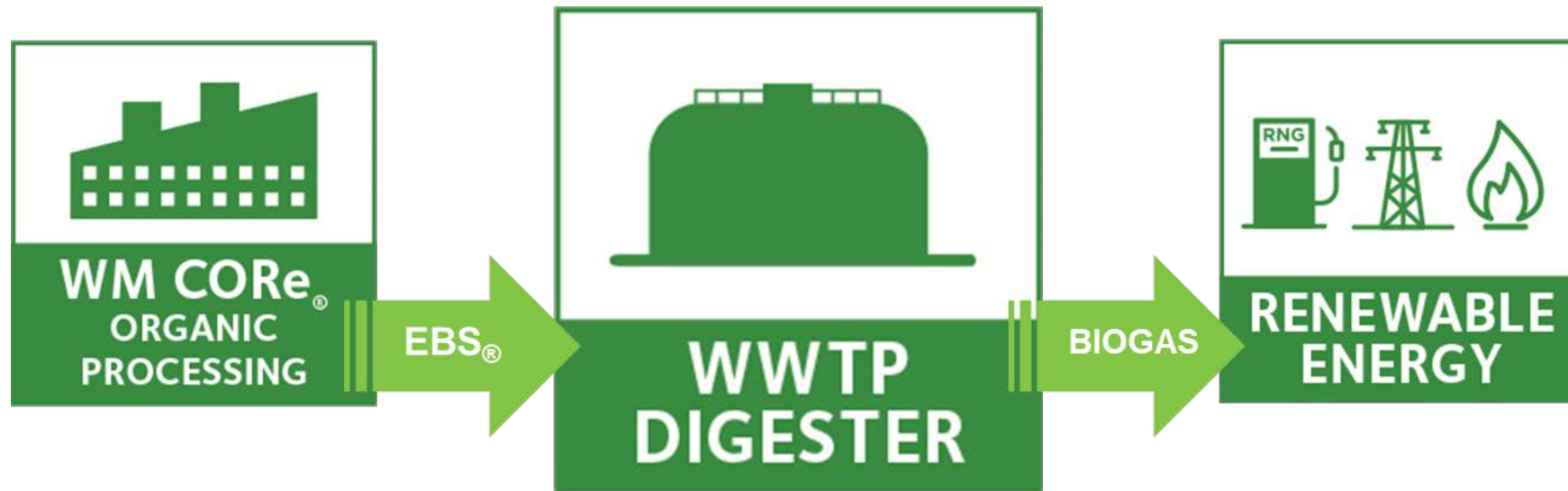


## Food Recovery Hierarchy



# EPA Food Waste Recovery





## Co-Digestion

- “Co-digestion is a process whereby energy-rich organic waste materials (food scraps) are added to dairy or wastewater (WWTP) digesters with excess capacity.
- In addition to diverting food waste and FOG from landfills and the public sewer lines, these high-energy materials have at least three times the methane production potential (e.g. biogas) of biosolids and manure.”

# CORe<sup>®</sup> Overview

- Stands for Centralized Organic Recycling
- WM's approach to food waste recycling through the use of co-digestion at a WWTP
- Local solution for densely populated metropolitan cities
- Depackages, processes and recycles food waste into EBS<sup>®</sup>, an engineered bioslurry most suitable for co-digestion



CORe – Wasted Food is Wasted Energy<sup>®</sup>

# North Jersey CORe<sup>®</sup> and RVSA

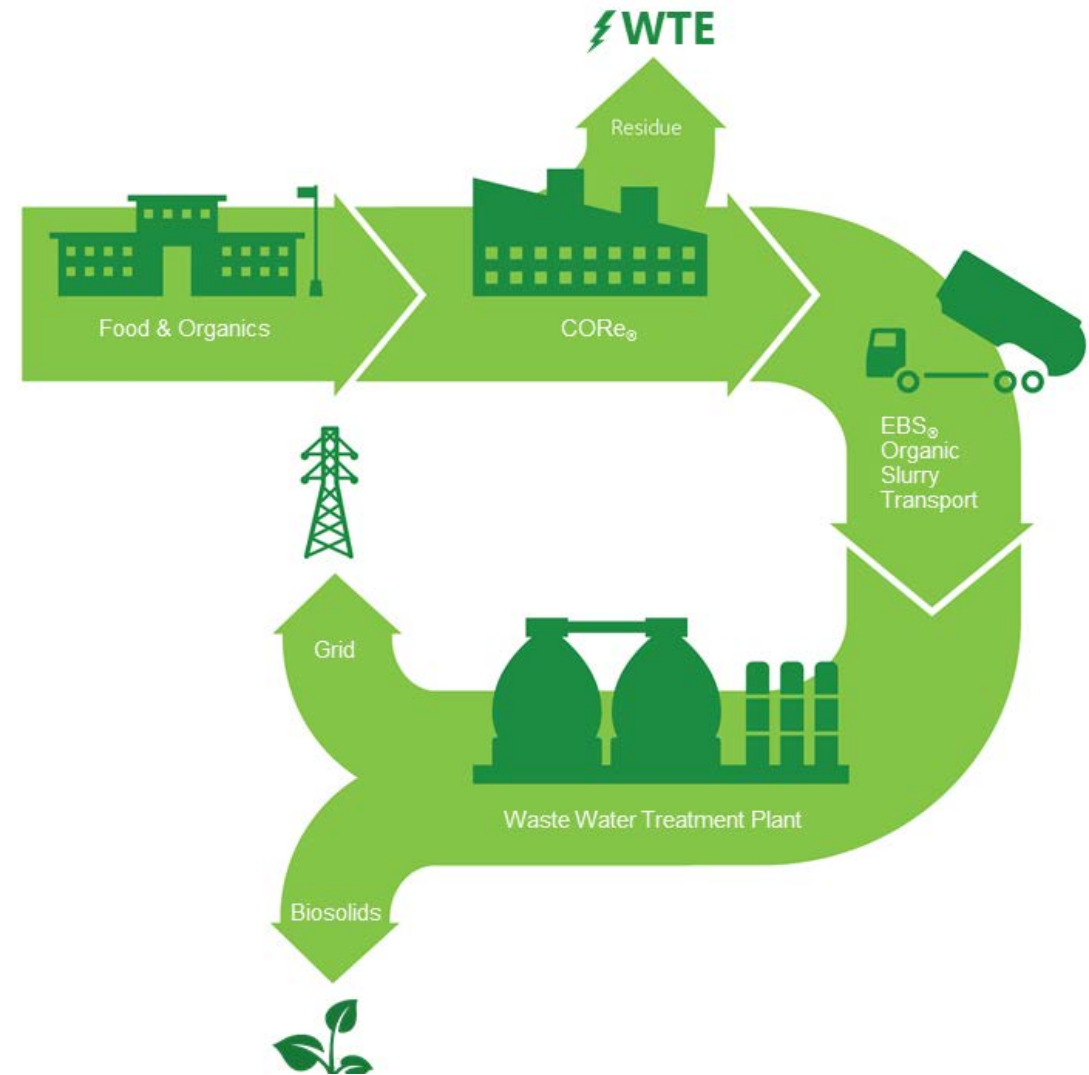
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- Centrally located in North Jersey - 847 Flora Street, Elizabeth, NJ 07201
- Permitted to receive 500 tons of food waste per day and 60,000gal of liquids tons per day
- Long-term partnership with Rahway Valley Sewerage Authority (RVSA) to receive and process our EBS slurry product



# WM's CORE<sup>®</sup> Process

- Food waste and liquid organic waste is brought to WM's CORE<sup>®</sup> facility.
- Proprietary process is able to depackage and convert material into our EBS<sup>®</sup> product.
- EBS<sup>®</sup> is a high quality, consistent product that removes >95% of the physical contaminants found in urban food waste.
- EBS<sup>®</sup> product is transported to the local WWTP and co-digested to create renewable



# CORe<sup>®</sup> Acceptable Streams

- Clean, source separated food waste and organics
  - Fruits
  - Vegetables
  - Pre-consumer organic waste
  - Kitchen prep



# CORe® Acceptable Streams

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- Post-consumer food waste
  - Cafeterias
  - Dining halls
  - Corporate cafes
  - Stadiums
- Up to 20% contamination
- Liners (do not need to be compostable or biodegradable)





# CORe<sup>®</sup> Acceptable Streams

- Packaged food material (PFM)
  - Pallets of expired product
  - Recalls
  - Excess product
  - Discards
  - Failed inspection

# CORe<sup>®</sup> Acceptable Streams

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- BulkBins
- Metal Cage Toters
- Gaylords
- Drums (plastic or metal)



3x 65-Gallon 2-Wheel Carts = 1x 200 Gallon WM BulkBin

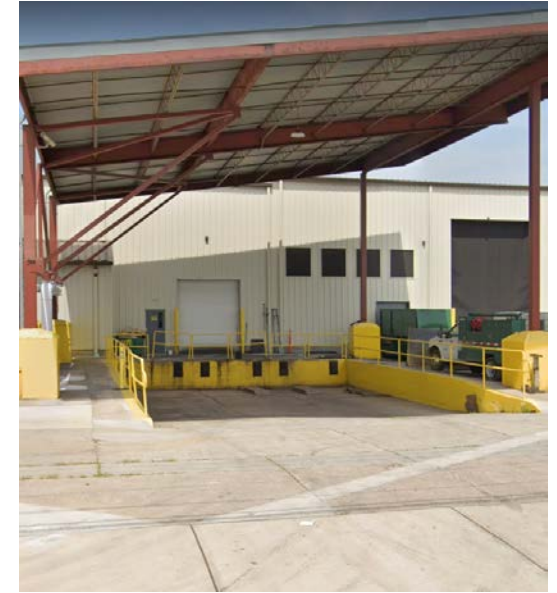




# CORe<sup>®</sup> Acceptable Streams

- Complimentary Liquids
- Fats, oils, & greases
- Alcohol
- Sodas & Juices
- Mouthwash
- Manufacturing liquids
- Rinse of product tanks and washing lines
- Grind2Energy Slurry





# CORe<sup>®</sup> Collection & Offload Capabilities

- Several modes of managing and receiving food waste
- Trailer trucks - 2 loading docks
  - Tanker trucks
  - Rolloff trucks
  - Compactors
  - Toter truck (suspended)

# CORe® in Operation

From food waste to EBS®



CORe® SSO  
Receipt Hopper  
& Bioseparator



EBS® Mixing  
& Storage  
Tank



EBS® Final  
Product

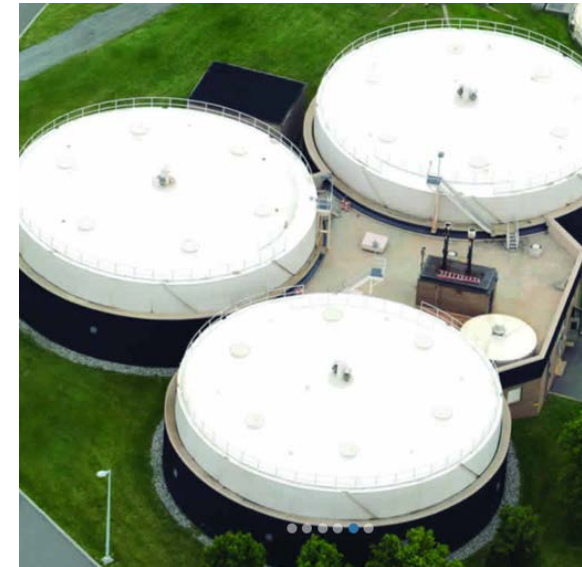
# EBS<sup>®</sup> Transported to RVSA



EBS<sup>®</sup> is transported to the WWTP via sealed vac truck



RVSA feeds EBS<sup>®</sup> into their digestors



Methane is captured and converted into renewable energy used to power the plant

# CORe<sup>®</sup> Contamination Levels

- Contaminants screened and separated out, treated as residual
- Up to 20% contamination levels are accepted and residuals are separated out during the process



# Success Story – Town of Westfield

Collecting residential food waste from designated drop off site





<https://www.youtube.com/watch?v=TP1B3f9FRGw> [youtube.com]

# Grind2Energy Overview

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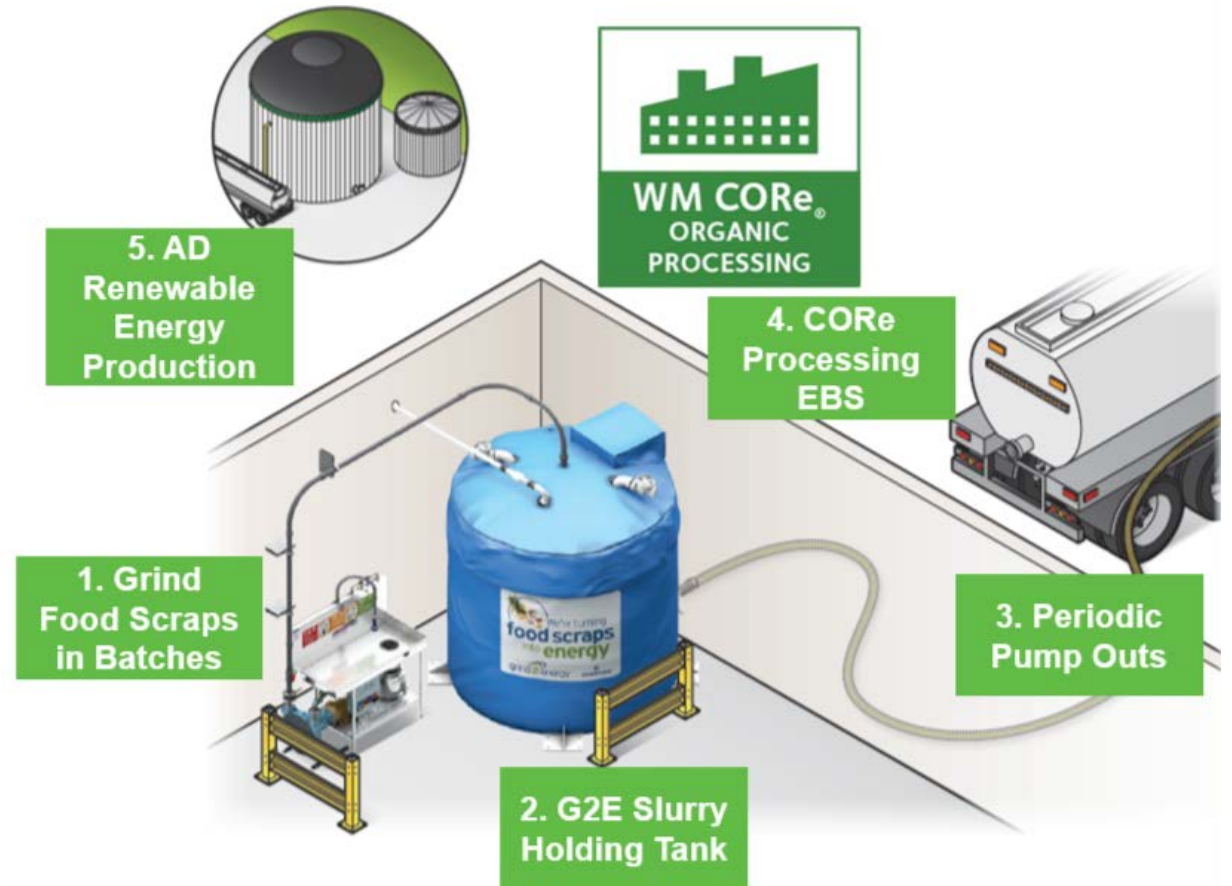
- Non-Sewer Based System
- Accepts all types of pre- and post-consumer food scraps
- Streamlines multiple programs into one efficient solution
- Eliminates odors and pest concerns





# Closed Loop Solution

- Scraps are processed through the system and pumped to the holding tank
- Monitor tank levels remotely
- WM delivers G2E slurry to one of their CORE<sup>®</sup> facilities and it is blended in with their EBS<sup>®</sup>
- Transported to RVSA or another digester depending on area for renewable energy production
- National database to identify capable anaerobic digestion facilities



# Safe & Easy to Operate



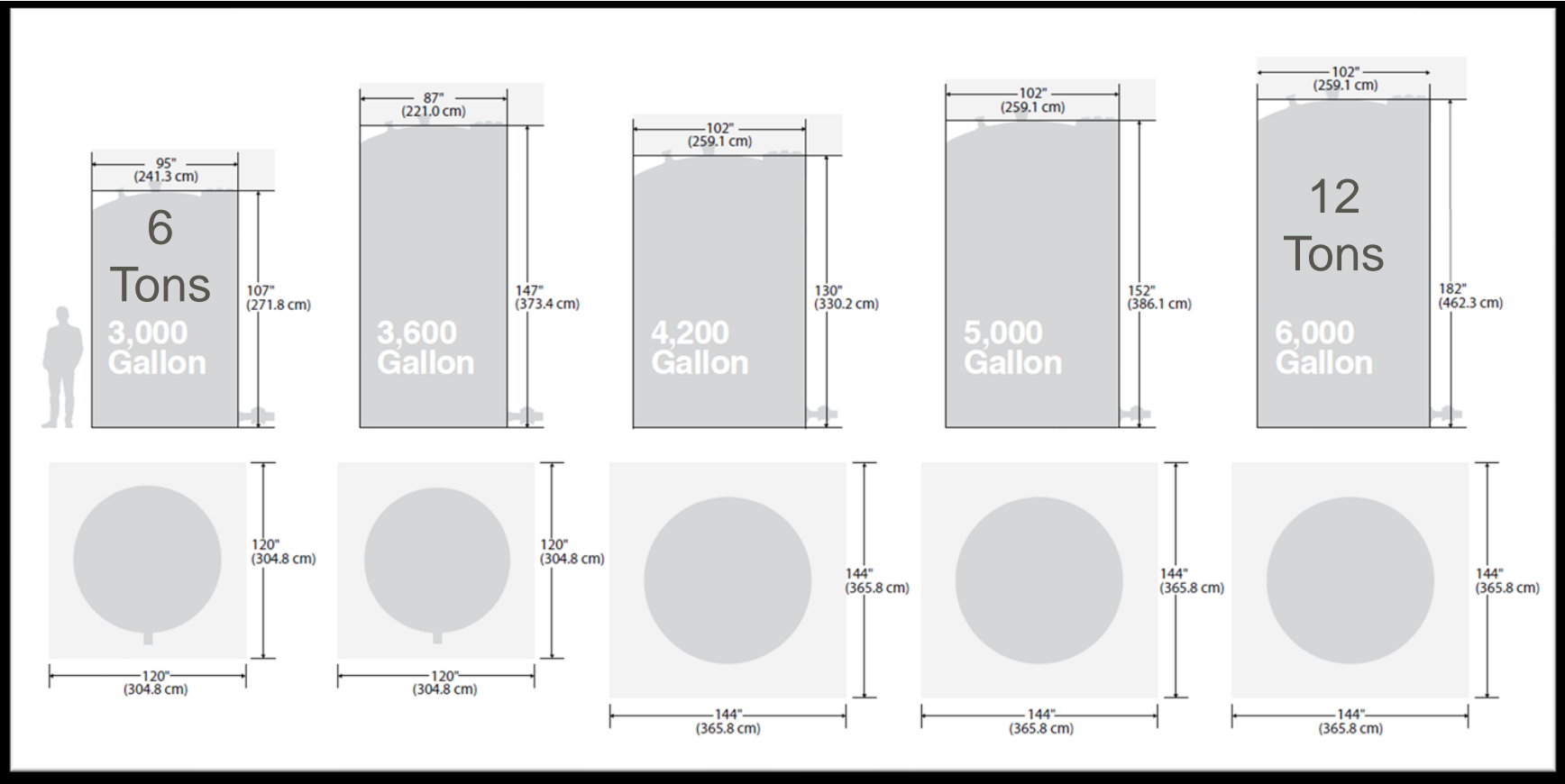
- InSinkErator grinding technology, no blades
- Average customer throughput is ~ 2-4 tons per week
- Improves BOH security; keeps team members indoors

# Efficient Process



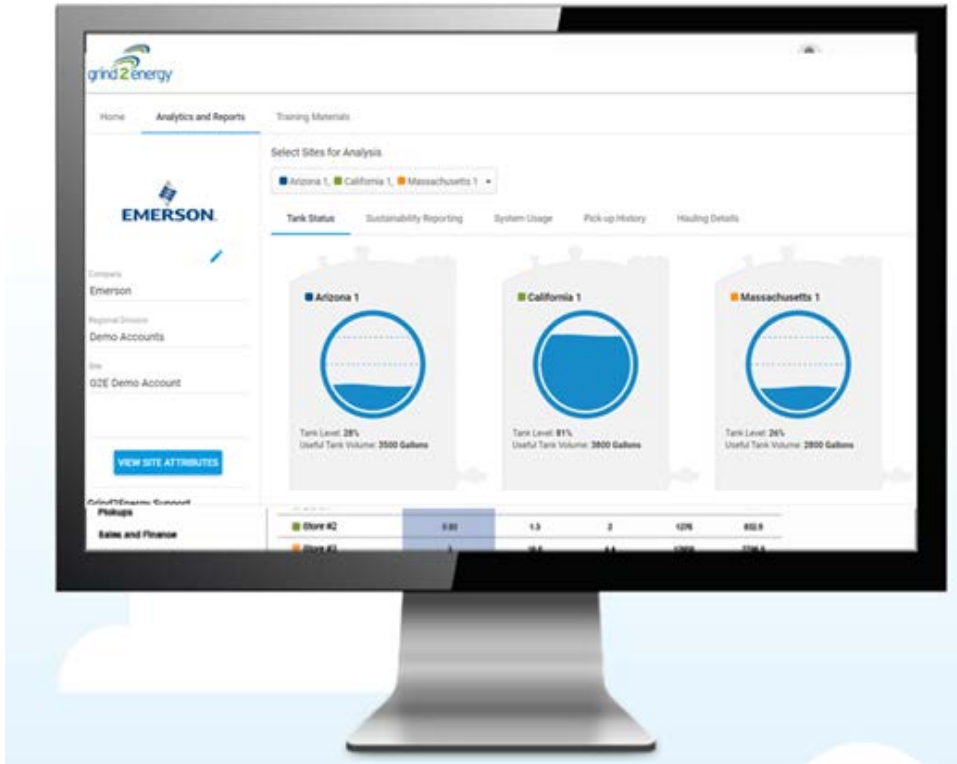
4 tons of food scraps per week – systems runs ~1 hour per day

# Reduced Hauling



# Cloud Based Dashboard

## Internet of Things (IoT) Technology



- Real-time data reporting
- Tank level monitoring optimizes full tank pump-outs
- Tonnage Tracking
- System usage and labor tracking
- Sustainability reports to promote environmental stewardship



Powering **10,100**  
homes for one month

### Energy

Your slurry was used to generate 9.1 million kWh of additional electrical power

### CO2 Reduction

By diverting your waste from landfills, you reduced carbon emissions by 34,350 tCO<sub>2</sub>e



**83.0 million**  
fewer miles driven



**2,850**  
tons of fertilizer

### Bio-solids for Fertilizer

The remainder of the slurry after extracting the energy yielded 2,850 tons of fertilizer

# Grind2Energy Customers Reached Major Milestone

100,000,000 Lbs. diverted  
for renewable energy  
production

# Grind2Energy Customers Include

Hotels & Resorts

Higher Education

Corporate Dining

OMNI  HOTELS®

- Omni Boston Hotel at the Seaport
- First luxury hotel to launch Grind2Energy
- Zero-Waste Events
- Higher Education driving ESG initiatives on campuses
- Collectively, more than 3,500,000 lbs. of wasted food diverted



THE OHIO STATE  
UNIVERSITY



THE J. M. SMUCKER COMPANY

- First Corporate Dining
- Grind2Energy helped The Company exceed their goals of 95% diversion rate.

  
KENT STATE  
UNIVERSITY

  
PATRIOTS

  
AT&T

# Leadership in Action



*“The Grind2Energy system allows us to be on the forefront of environmental sustainability practices in Massachusetts.”*

Karen Franczyk  
Former Green Missions  
Coordinator

Source: The Andover Townsman - 2014



# Leadership in Action



grind<sup>2</sup>energy

2016 Ridgewood store launched G2E

G2E slurry delivered to CORE<sup>®</sup>

RVSA generates electricity to power their facility

*“ Since adopting Grind2Energy in 2014, we’ve been able to further accelerate our commitment to minimizing food waste in our stores and promoting environmental stewardship across the life cycle of food,” said Caitlin Leibert, vice president of sustainability at Whole Foods Market.*



# Community Engagement



UNIVERSITY OF  
NOTRE DAME

- Student led initiative
- Generating 1 ton day of food scraps across campus
- Three G2E systems on campus
- Food slurry going to Homestead Dairy, 4 generation family farm

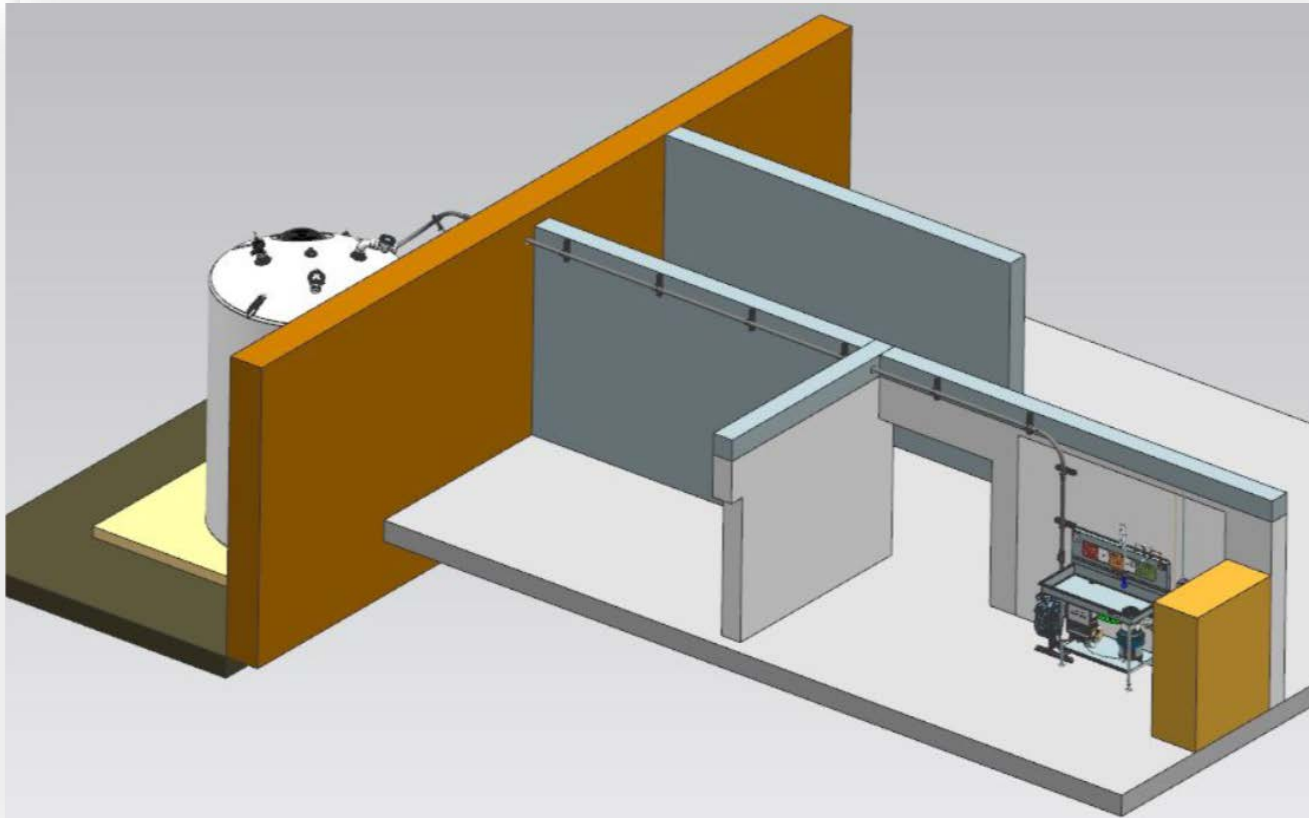
# Campus Climate Action Plan

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UNIVERSITY OF  
**ILLINOIS**  
URBANA-CHAMPAIGN

- Selected Grind2Energy as food diversion solution
- Four systems across campus
- Compliance with iCAP





UNIVERSITY OF  
**ILLINOIS**  
URBANA-CHAMPAIGN

# System Placement



# Media Engagement



ENERGY & ENVIRONMENT

## *Cleveland Indians Have Home-Field Advantage on Recycling*

By DIANE CARDWELL MAY 1, 2015



Source: New York Times: Energy & Environment  
May 1, 2015

# Business Case



- Prescheduled compactor pick-ups 2x per week – 104 pulls annually

Implemented Grind2Energy and compactor pick ups went to an as need-based schedule.

- Reduced compactor pulls down to 1x every other week – 26 pulls annually
  - Total annual reduction of 78 compactor pick-ups
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# Sendik's Food Market Testimonial



<https://www.youtube.com/watch?v=-YzKB0szfhI>



Next Steps?





# How can you start your own food waste recycling program?

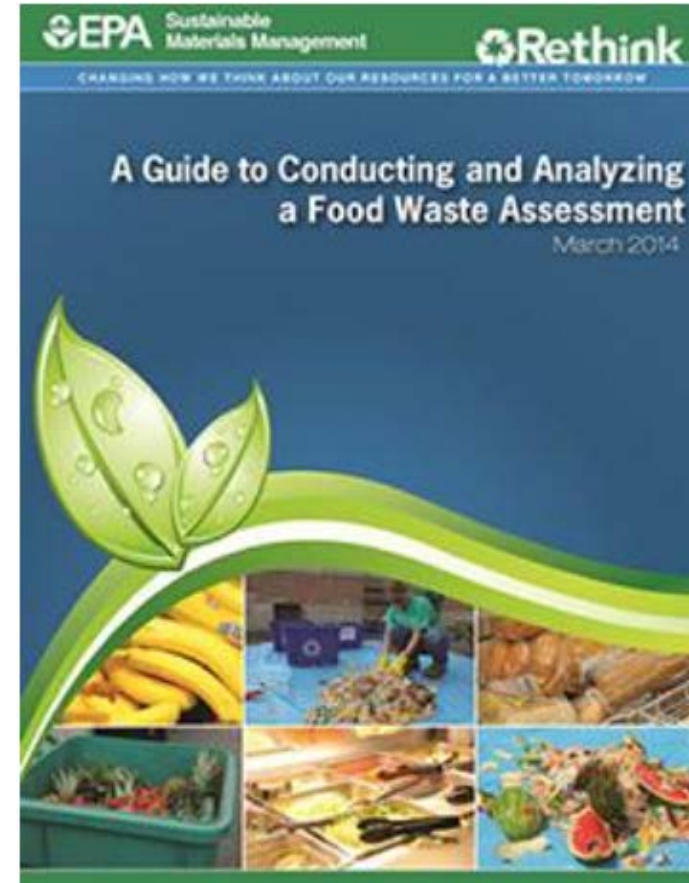
- The best first step to efficiently managing an operations food stream is to measure what's being discarded.

Source: EPA Sustainable Materials Management  
<https://www.epa.gov/sustainable-management-food/resources-assessing-wasted-food>

# Additional Resources

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- **EPA Food Waste Assessment Guidebook.** How to complete a baseline audit
- **CET.** Center for EcoTechnology helps people and businesses save energy and reduce waste.



# Free Waste Assistance

Evaluate existing waste streams

Identify opportunities to prevent, recover, and divert waste

Create customized waste bin signage

Conduct cost analysis

[Wastedfood.cetonline.org](https://wastedfood.cetonline.org)



Questions?



**FOOD IS ENERGY,** LET'S NOT WASTE IT.  
THANK YOU

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