

Sustainable Solutions from Emerson

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Technology Fostering Sustainable Uses of Food Waste
10:45 AM – 12:00 PM, Thursday, September 7th

Convergence of Environmental Megatrends

FOOD WASTE REDUCTION



FEDERAL GOAL
50% by 2030



ROADMAP
20% for \$18B



LANDFILL DIVERSION OF ORGANICS



STATUTORY BANS | CA • MA • RI • VT • CT

Soon in FL • MD • MN • NJ

MUNICIPAL ZERO WASTE PLANS

Austin • NYC • Portland • San Francisco • Seattle

RESOURCE RECOVERY



CLEAN WATER



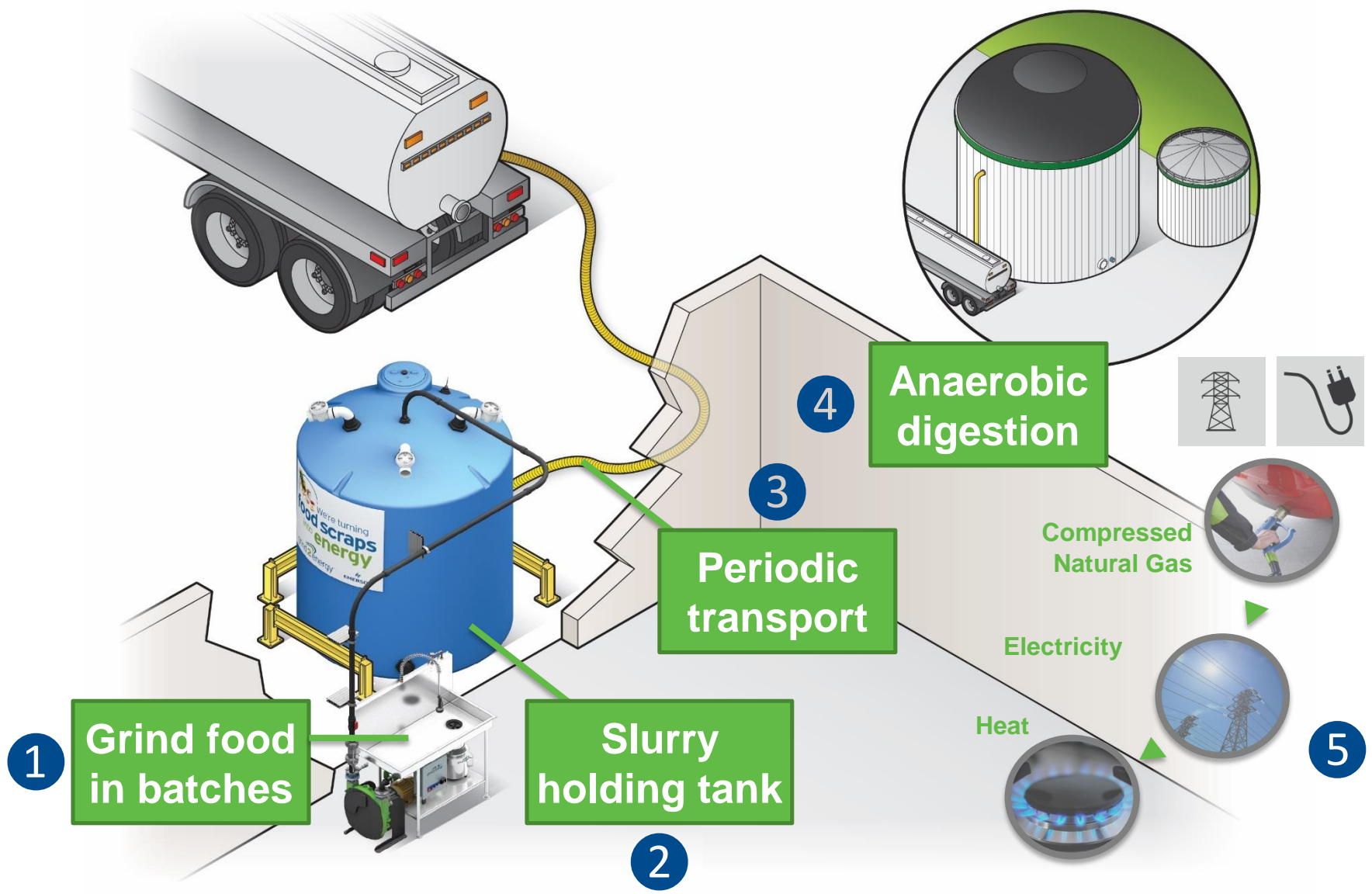
ENERGY



FERTILIZER

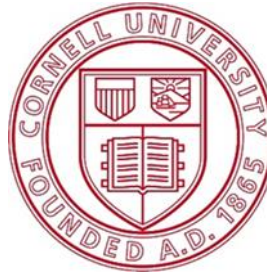


grind²energy™ : A more efficient and sustainable way to manage food waste

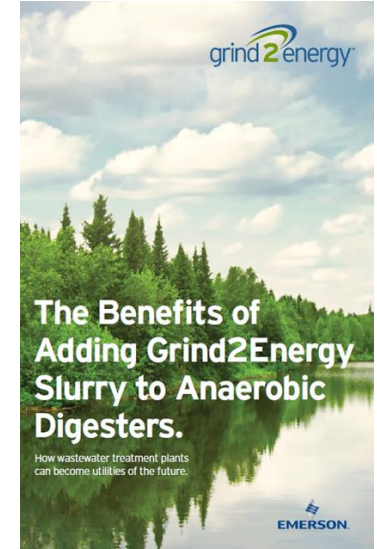


- **Characteristics**

- Total Solids 10-12%
- Volatile Solids >90%
- pH ~4
- Density of 1 g/ml
- Chemical Oxygen Demand ~150,000 mg/L
- Biochemical Methane Potential 400-600 L CH₄/kg VS
- Low Heavy Metals



Western
UNIVERSITY · CANADA



- **Quality**

- Pumpable
- Low Contamination
- High Energy Value
- Readily Biodegradable
- Synergistic Effects on Methane Production & Volatile Solids Destruction
- Very Low Impact on Biosolids Production



Consistent Characteristics and Quality of Grind2Energy Slurry
Equates to High Value for Anaerobic Digesters

Disposers - “More than Appliance of Convenience”

AMERICAN HOUSING SURVEY

All Occupied Units

115,852,000

Disposal in Sink

60,126,000

60 million homes

52%



Environmental Tool for Preserving Public Health and Promoting Sustainability

Research Confirms Sustainability of Disposers

Life-Cycle Assessment (2011)

Sustainable Food Waste Evaluation (2012)

Impacts to Wastewater Treatment (2013)

↓ CO₂

↓ \$



Myths & Misconceptions of Disposers

- Water & Electricity Usage
- Food Waste Clogs Plumbing & Sewers



Municipal Projects to Demonstrate Efficacy of Disposers

Philadelphia*, Tacoma, Milwaukee, Boston and Chicago



THE CHALLENGE IN THE FUTURE IS HOW TO EXTRACT ENERGY FROM WASTEWATER MOST EFFICIENTLY... FOOD WASTE COULD BE GRIND UP IN KITCHEN FOOD WASTE GRINDERS AND TRANSPORTED TO WASTEWATER TREATMENT FACILITIES... ” .

GEORGE TCHOBANOGLOUS



"WasteFull Thoughts is a discussion of environmental topics related to food scraps and recycling, resource recovery, infrastructure, climate change, sustainability and other contemporary points of interest."

- Michael Keleman



Reflections on waste & resource recovery



WATER & WASTEWATER



ENERGY



COLLECTION SYSTEMS



FOOD SCRAPS



RESOURCE RECOVERY



BIOSOLIDS

Questions?

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