


How will the Diversion of Organics Impact Landfill Gas to Energy Projects



Presented by

John G. Carlton, P.E., BCEE, Senior Vice President
Gershman, Brickner & Bratton, Inc.

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Presentation Objectives


- Present the link between food waste and landfill gas
- Present the state of landfill gas to energy
- Present modelling research on organics diversion and impacts
- Create discussion on what we should and can do regarding food waste/organics

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Quality – Value – Ethics - Results

Established in 1980

Solid Waste Management and Technology Consultants

Helping Clients Turn Problems into Opportunities



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Economic, technical and environmental reviews

Procurements

Due diligence

Waste characterization and sourcing

Independent feasibility consultant



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THE NATURE OF FOOD WASTE



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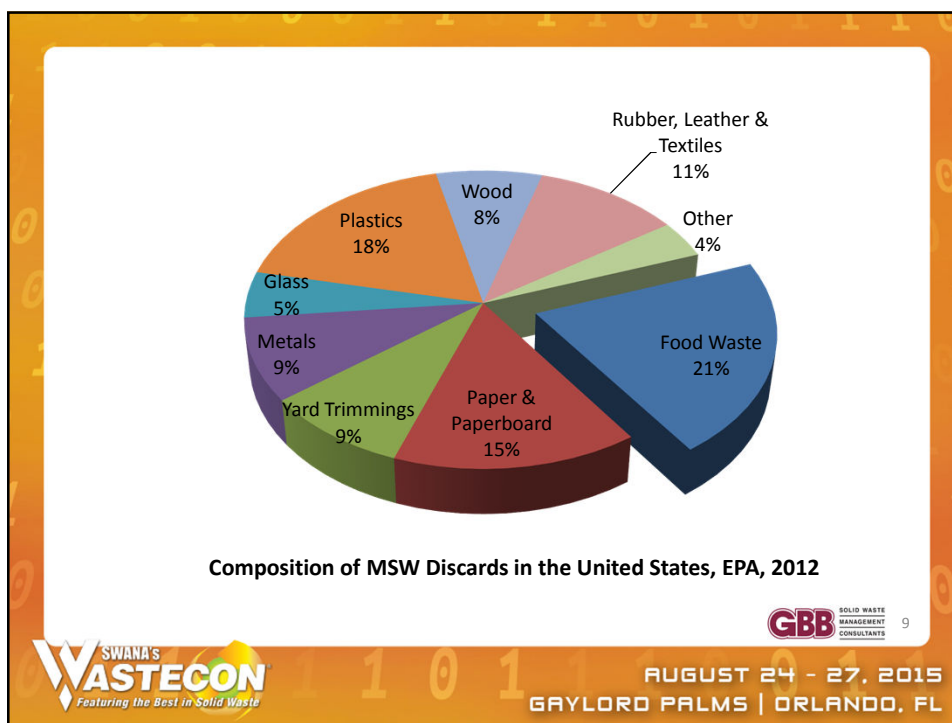
EPA Definition

"...uneaten food and food preparation wastes from residences and commercial establishments such as grocery stores, restaurants, and produce stands, institutional cafeterias and kitchens, and industrial sources like employee lunchrooms."



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Material	1992	2012	Difference 1990-2012
Food Waste	8.4%	21.1%	+12.7%
Wood	7.4%	8.2%	+0.8%
Yard Trimmings	18.4%	8.7%	-9.7%
Total Organics	34.2%	38.0%	+3.8%

Composition of Organics in MSW Discards in the United States, 1992 and 2012, USEPA

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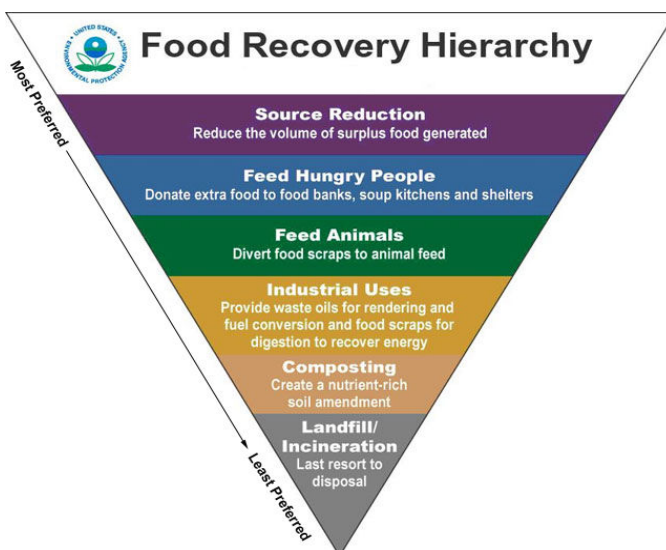
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EFFORTS TO DIVERT FOOD WASTE FROM LANDFILLS



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USDA/USEPA Food Waste Challenge

- Improving product development to reduce food waste
- Recover food for hunger relief organizations
- Recycle food waste (animal feed, compost)

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Organics Disposal Bans

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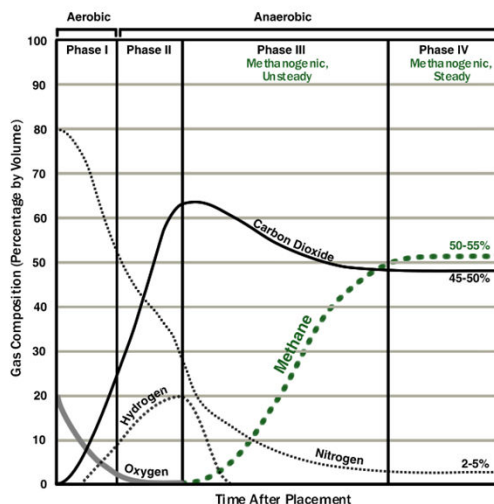
THE IMPACT ON LANDFILL GAS FROM ORGANICS DIVERSION



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Landfill Gas Generation



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EPA Landfill Methane Outreach Program (LMOP)

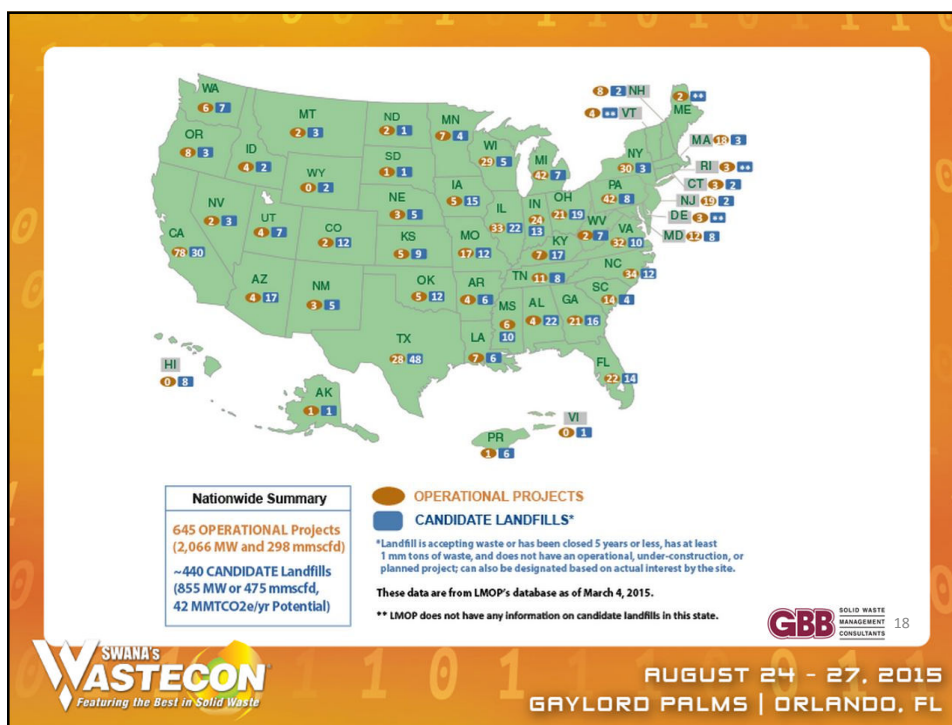






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A diagram consisting of two chevron-shaped arrows pointing to the right. The first arrow is red and contains the text "Less Organics". The second arrow is green and contains the text "Less Landfill Gas". The arrows are connected at their tips, suggesting a causal link.

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Burlington County, NJ

A map of New Jersey with Burlington County highlighted in red. Surrounding states are labeled: New York, Connecticut, Pennsylvania, and Maryland. A watermark "emapsworld" is visible across the map.

The seal of Burlington County, New Jersey, featuring a circular design with the text "BURLINGTON COUNTY, N.J. 1694" and "BOARD OF CHOSEN FREEHOLDERS". The center of the seal depicts a landscape with a bridge and water.

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Burlington County LFGTE



5 Jenbacher model JGS
420 engine-gen sets
DCO Energy, LLC (DBO)
7.1 MW



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Burlington County Study

2008 desktop
study

Modelled 15-yr
organics ban

43,000 tons
(14.3%) organics
diversion

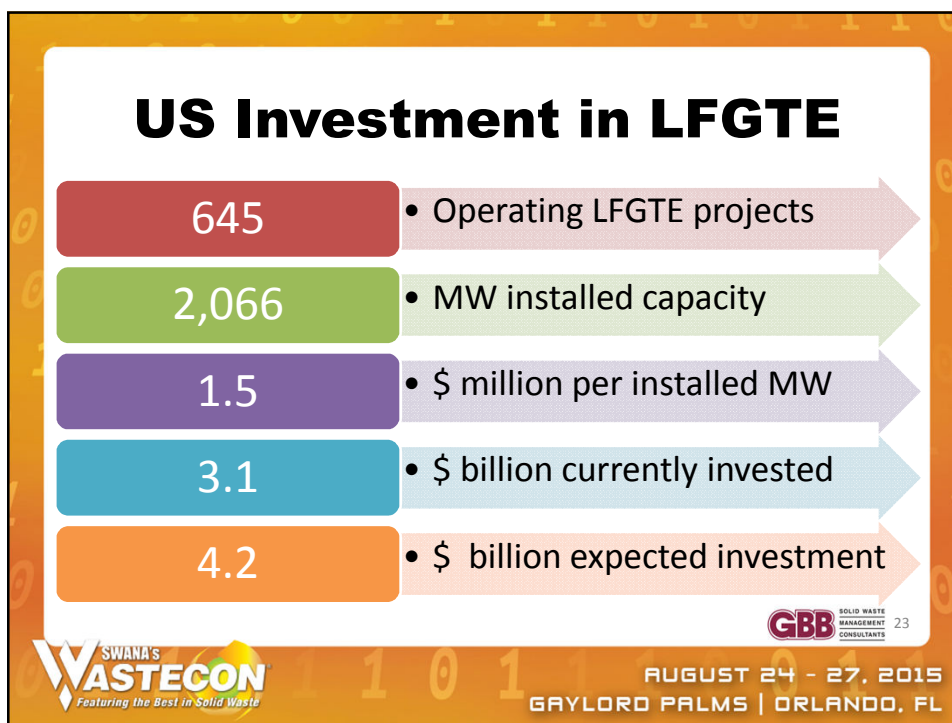
147 scfm to 550
scfm LFG loss

\$450,000 loss in
electricity

\$3.3 million tip
fee loss



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The promotion of LFG energy is not in conflict with promotion of waste diversion and does not compete with waste reduction, recycling, and composting. LFG energy projects use methane that is generated from waste that has not been successfully diverted from landfills. The goal of LFG energy projects is to promote beneficial utilization of LFG collected from MSW landfills that have already disposed waste. It is possible to support the diversion of the organic fraction of discards from landfills so that uncontrolled methane is not generated and also support LFG energy projects that utilize methane generated from organic waste already disposed in landfills.

- USEPA

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ORGANICS DIVERSION AT WHAT COST?



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What Would You Pay for Organics Diversion

- ✓ Less Cost
- ✓ Same Cost
- ✓ 10% More
- ✓ 50% More
- ✓ 100% More
- ✓ 200% More



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WHAT SHOULD WE DO?

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Closing Thoughts

Landfills currently contain millions of tons of organic waste

The organic wastes currently in landfills will degrade over many years in anaerobic, methanogenic, steady state

Organics diversion programs will likely take time to develop and mature

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Thank You!



John G. Carlton, P.E., BCEE
Senior Vice President, GBB

908-319-5992

jcarlton@gbbinc.com

www.gbbinc.com



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