




Why are we here?

- * Last landfill expansion cost \$96,000,000 (2005)
- * Cherry Island due to fill between 2020 and 2052
- * Let's avoid another expansion...






“If we do not change our direction, we are likely to end up where we are headed.”

- Ancient Chinese Proverb

Facts

- * About 50% of landfill content is Organic
- * Organics = Energy
- * Energy = 
- * Recycling = 10x the jobs of landfilling



All the Pieces

Legislation / Strategy



Education

Stakeholders

Rules / Enforcement / Measurement



Legislative Strategy

- * New England – Connecticut, Vermont, Massachusetts
 - * Clear measurements
 - * Tiered system
 - * Accountability
- * New York City
- * California





Organic Recycling Process/Technology

- * Depend on type of organic waste
 - * Large cardboard or paper waste producer
 - * Enforce existing channels for recycling
 - * Ban of these items in landfill
 - * Food waste – high energy potential
 - * Education and awareness of possibilities
 - * Each waste producer can pick what works best for them...



Organic Recycling Process/Technology

- * Large Central Facility
 - * Needs – about \$100 million; waste travels; 100,000 tons of feedstock
 - * Benefits– high diversion from landfill, more jobs, \$13 - \$30 million revenue, attracts investors
- * Several Smaller Facilities – one per county
 - * Needs – smaller initial investments/ larger total investment, state support, less profit
 - * Benefits - waste travels less, local access, same revenue



Organic Recycling Process/Technology

- * Business Facilities
 - * Larger businesses creating own energy
 - * Perdue, Casinos, DuPont
 - * Benefits – energy source, lowered expenses, free feedstock, haulers less travel, quick payback
 - * Needs – continuous flow of feedstock, \$6 to \$8 million
- * Research Facilities
 - * Through educational institutions used as teaching, research and production facilities



Product & Investment

- * Capital investment varies
 - * Smaller facilities: \$6-8 million; \$40 to \$60 million
 - * Larger facilities: \$100 million +
- * Profit threshold – 100,000 tons where companies will come in and build facility
- * Grants
 - * Federal Renewable Energy Grants
 - * Research Grants
 - * Compliance to Law Grants



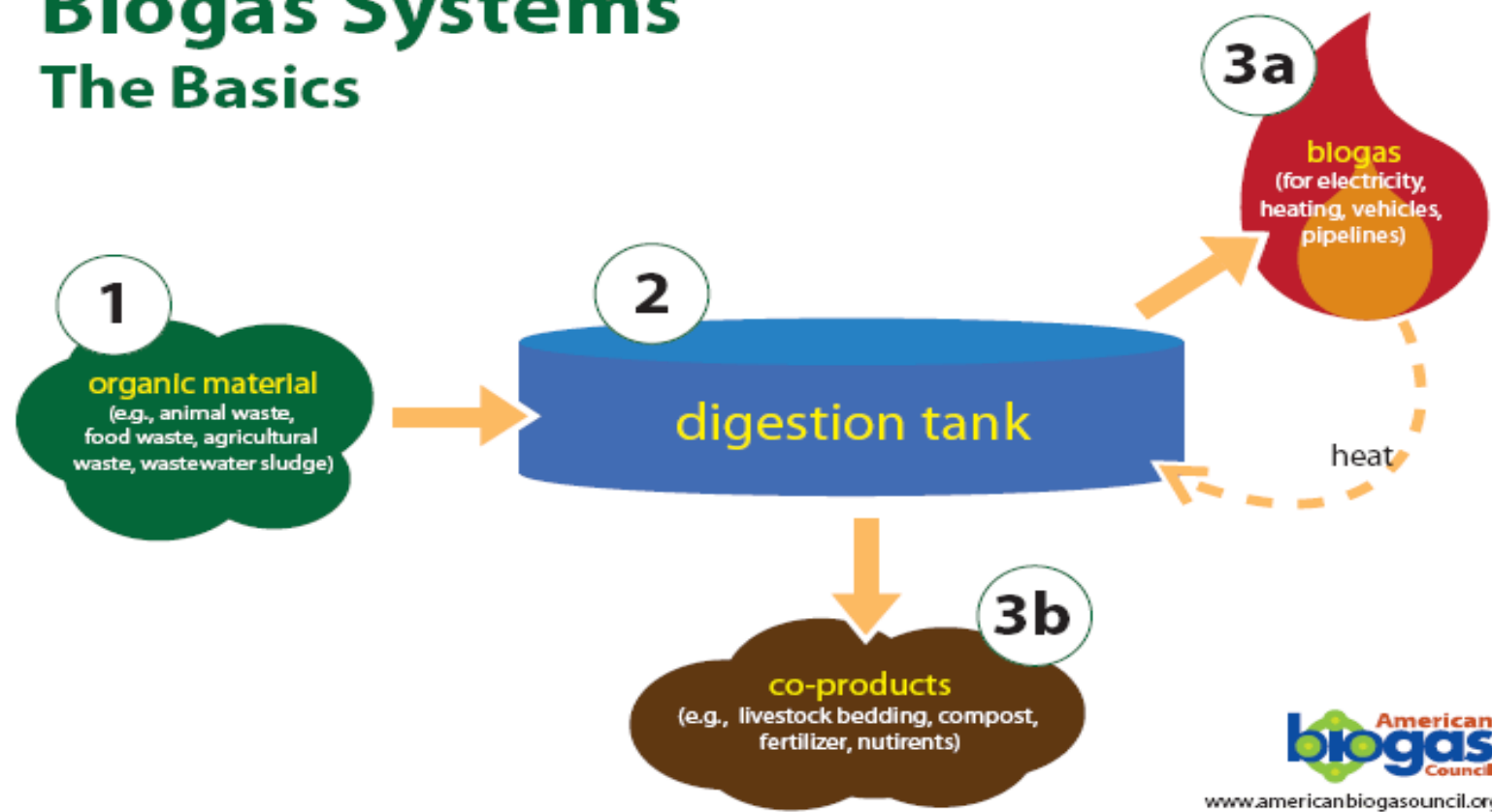
Anaerobic Digestion Technology

- * Digestion of organic material with microorganisms
- * NO OXYGEN = NO AIR FLOW = NO SMELL
- * Generating methane (biogas)
- * Methane converted to electricity / biofuel / heat
- * Waste product is digestate (fertilizer or fill)
- * 10 time the number of facilities now then in 2000
- * Advances in research



Anaerobic Digestion At-a-glance

Biogas Systems The Basics





Reno, Nevada

Surrey, British Columbia
Best Practices

Edmonton, Alberta

Monterey, California

Pontotoc, Mississippi

San Jose, California

London, Ontario

Orlando, Florida

Vermont Technical University

Montpellier, France

Fawdon, UK





Goals

- * Energy from organic waste
- * Infrastructure for Organic Energy
- * Zero Waste Strategy
- * Waste used as a resource and not a liability



Next Steps

- * Phase in
 - * Food waste, paper, cardboard ban
 - * 2 to 1 ton/week
 - * Etc.

