



# **BTS BioEnergy**

**Global Leaders in Anaerobic Digestion**

# A 20 Year History



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- 200 + modular biogas plants in Europe, the UK and Japan rated energy capacity 250 kW to 3 mW +
- “Owned & Operated” or “Build to Suit”
- Organic Feed stocks: food waste (pre- or post-consumer), manure, fats, grease, and oil, DAF waste and other bio-degradable by-products
- Guaranteed energy performance: Refine biogas into bio-methane, grid injection, use by fleet, CHP, and thermal.



# Food Waste for Anaerobic Digestion



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Wide range of food waste accepted:

- Fruits and vegetables
- Meats and dairy
- Cooked foods
- Fats, greases, and oils
- Packaged food



Industries Served:

- Food processing and distribution
- Foodservice / Hospitality
- Agriculture
- Public institutions
- Municipalities
- Academic Institutions



# Our Products



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RGY  
ergy.com

## Renewable Energy

- Renewable Natural Gas
- Direct to Grid / Fleet Vehicle
- Electricity - Power Purchase Agreements
- Surplus Thermal Energy - Refrigeration

## Class A Soil Amendment

- Liquid
- Dewatered
- Dried, Granulated
- Pelletized
- N and / or P stripped



# Why the United States ... Maryland



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- No more incineration - - no more landfills
- Focus on GHG reduction: trucks off the road, land fill gas use, even “nimby” compost challenges
- Sustainability as a public/private focus
- The move to “Zero Waste”
- Lots of promises, little “proven” Innovation





# I'll go this way – You go some other way



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- Permitting: where go and how to proceed
- The County Vs. State requirements
- Lack of definition
- “I’ve heard that before” syndrome
- Landfills as a financial asset



(5) **identify the infrastructure needs**

(6) **identify means to encourage investment** and provide economic incentives to expand capacity

(10) subject to the approval of the affected local governments, **recommend a pilot program for the region in which Elkridge and Jessup** are located to prioritize infrastructure development and food waste recovery from large food waste generators.

# HB 171: Tasks 5 and 6

## Infrastructure Challenges

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### In plain English:

- Identify infrastructure challenges related to **organic diversion** that are unique to geographic regions of the State, and
- Identify means of **encouraging investment** in new infrastructure.

### Main revenue challenges to the organics diversion industry:

- Securing enough **feedstock** with an appropriate **tipping** fee,
- Developing markets for **finished products** at appropriate prices.

# Tasks 5 and 6: Infrastructure Challenges

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**When entrepreneurs in the the organics diversion industry solve these challenges, financing for real estate and capital expenses follow.**

## **Our Suggestions:**

- 1) Provide **funding incentives** for counties to implement programs to collect and transfer organics to a nearby processing facility.
- 2) Require state and county-operated organics diversion and processing operations to insure tipping fees and sale of finished product, are aligned to the market rate.



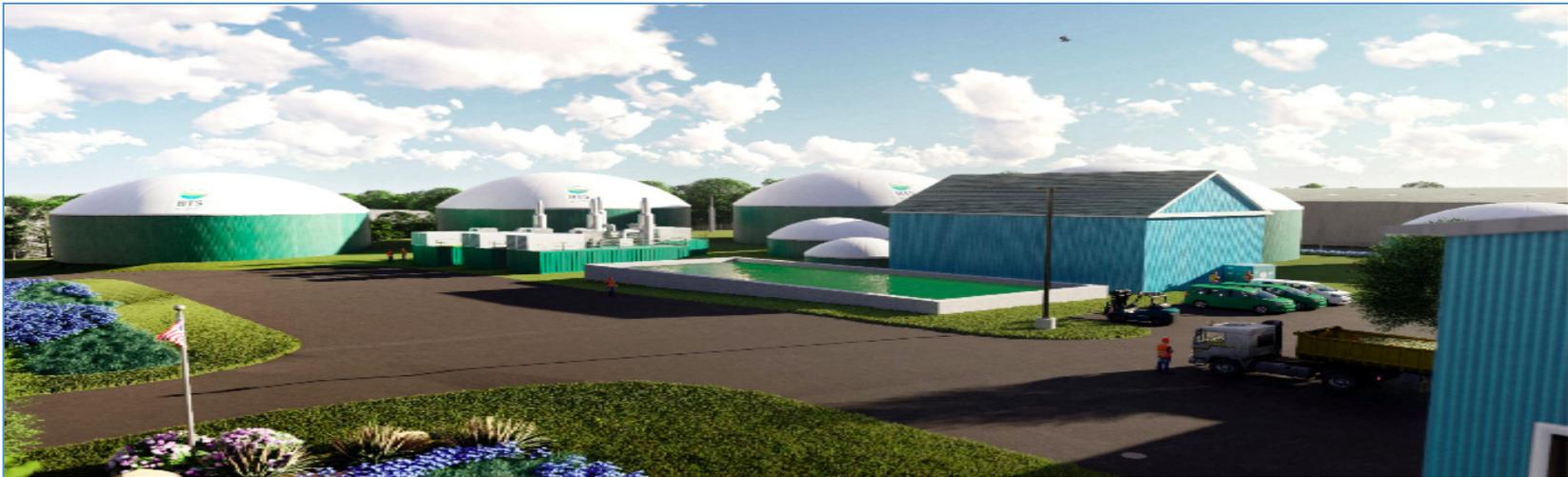
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# Tasks 10: A Recommended Pilot

**In plain English: Right time, Right Place**



**BTS BioEnergy at the Maryland Food Center Authority**  
**Urban industrial campus of food processors and distributors**  
**100,000 TPY, primarily food waste**  
**3 mW power**  
**Schedule to open 4th Quarter, 2019**



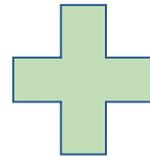
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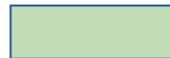
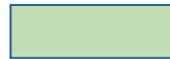
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# Why the United States ... Maryland

Concentrations of digestible waste  
& demand for renewable energy



Our history, experience, and technology



A customized solution that reduces  
wastes disposal costs and carbon footprint



# A Global Leader in Anaerobic Digestion



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## How It Works: The BTS Process



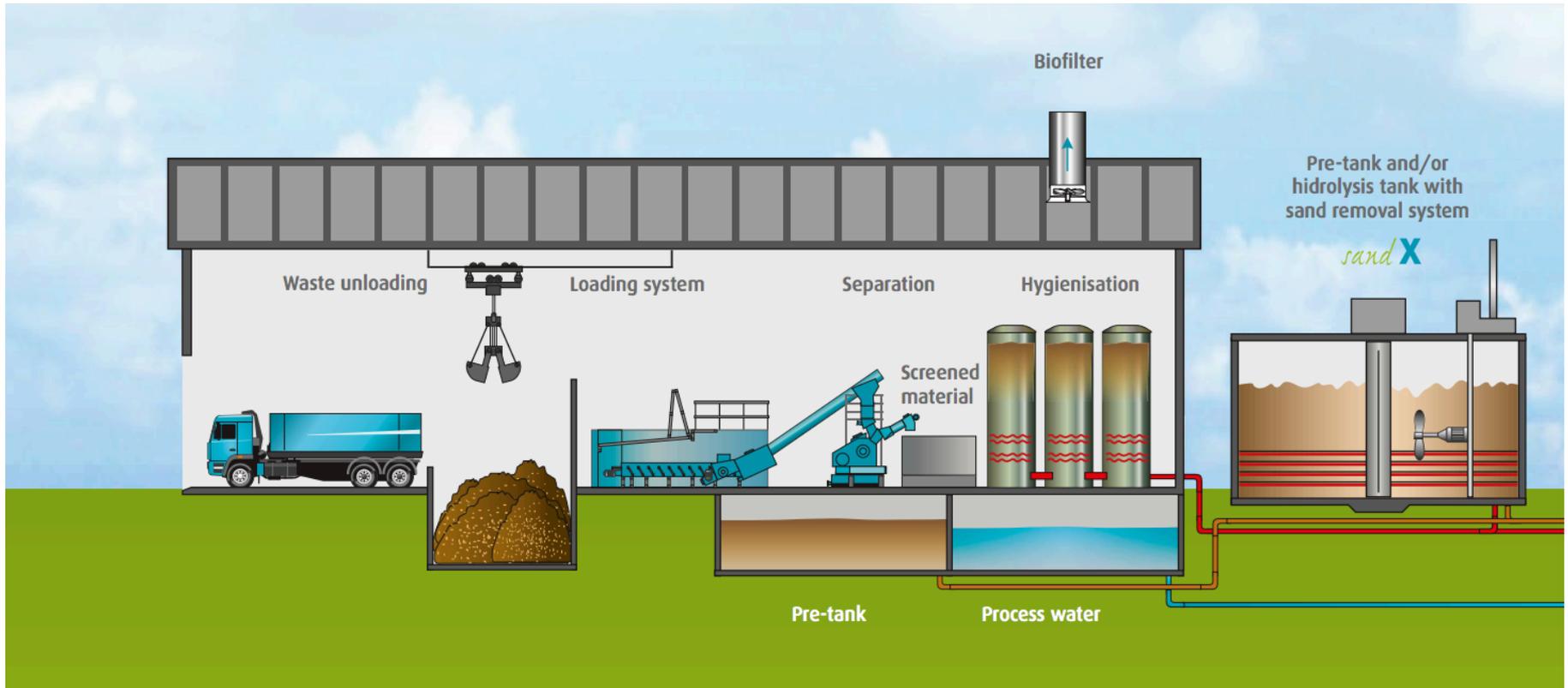
# Feedstock Receipt and Pre-treatment



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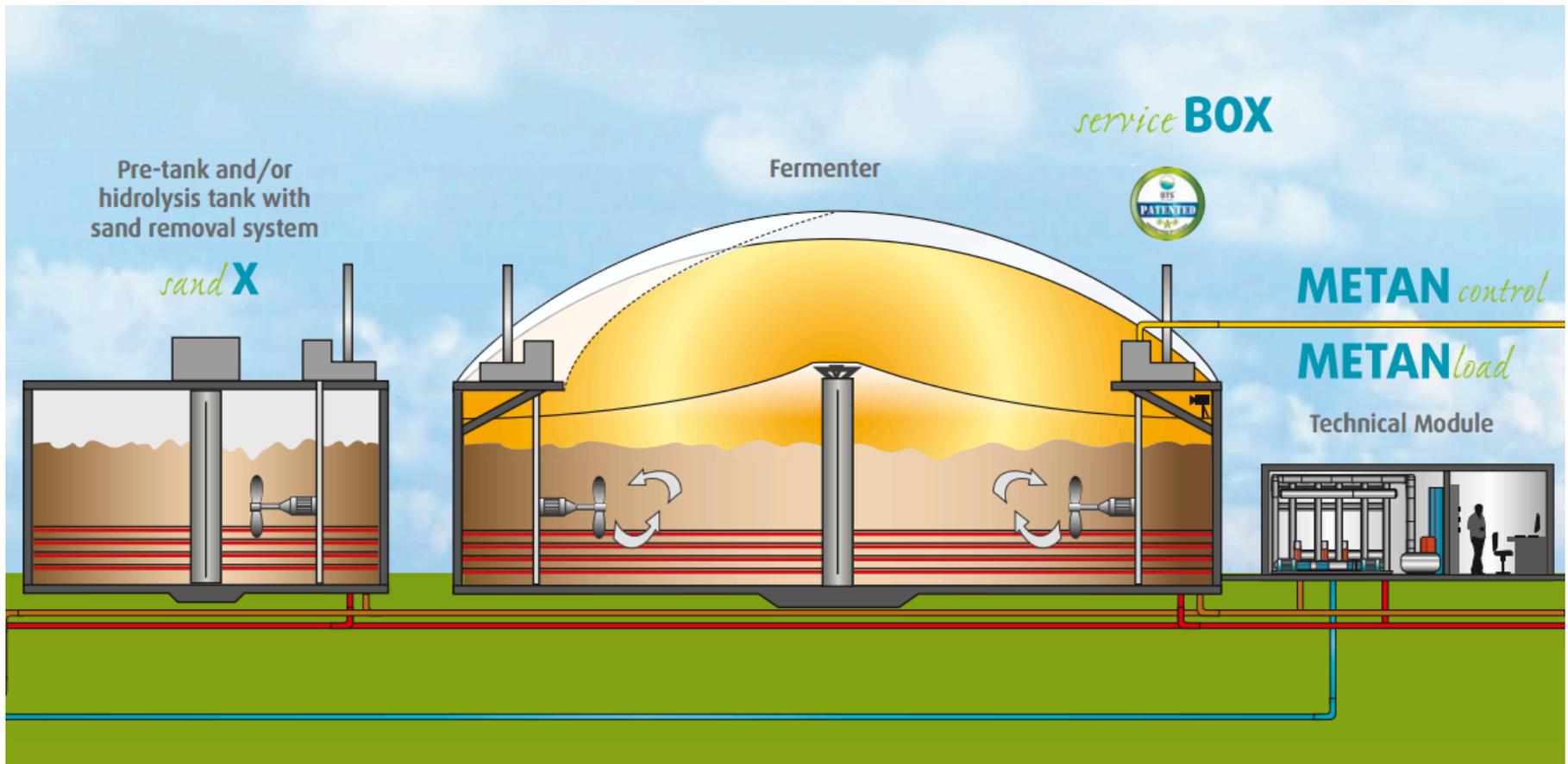
# Primary Fermentation



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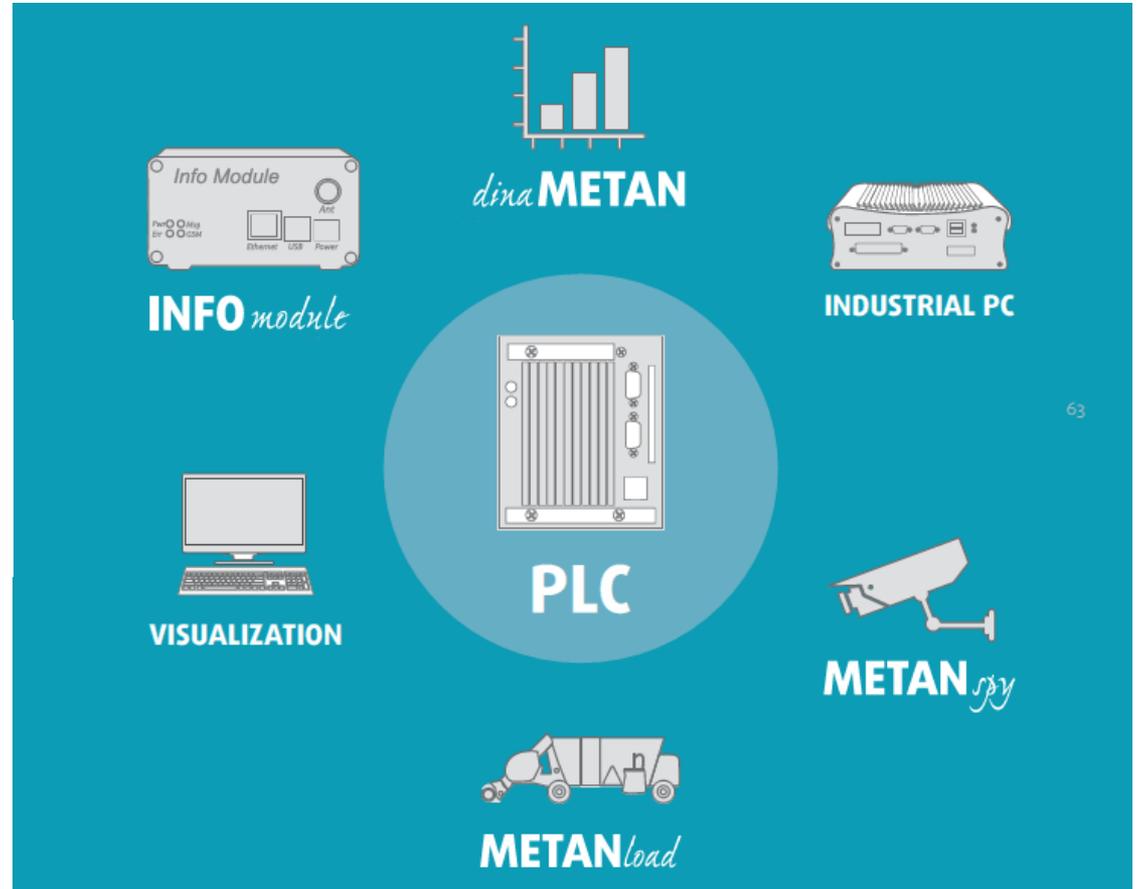
# Our Proprietary Control System



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**METAN** *control*





# Upgrading and Digestate Refinement



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