Creating Energy & Protecting the Environment

Division Director of Programs, Chris Rice
Maryland Energy Administration
The mission of the Maryland Energy Administration is to promote affordable, reliable, cleaner energy for the benefit of all Marylanders.
ANIMAL WASTE TO ENERGY
Why Pursue Animal Waste to Energy Technology in Maryland?
The impact of agriculture on Maryland’s economy amounts to $8.25 billion annually. Approximately half of this amount is due to livestock production.
The Potential for Nutrient Runoff From Animal Operations Can be Curtailed While Providing an Alternate Revenue Source for the Farmer
TOTAL MAXIMUM DAILY LOAD
TMDL
The Phosphorus Management Tool
PMT
The Renewable Energy Portfolio Standard

RPS
The Energy Administration Works with the Department of Agriculture to Help Accomplish This Goal
The MEA Animal Waste to Energy Program
In Fiscal Year 2019 MEA has Made up to $6M dollars Available to Assist in the Development of New On-Farm and Community Facilities
MEA has Currently Funded Five Projects in the State
Case Study

Planet Found Energy Development, LLC
The Host Farm – Millennium Farm Worcester County, MD
The AD + NCS Facility
PFED’s Patent-Pending Combined AD + NCS Process

Introduction of Material

PFED’s Combined AD + NCS fundamentally alters traditional manure management practices after poultry litter is delivered to covered storage. As opposed to allowing a slow composting process, PFED’s system undertakes daily removal, energy production, and nutrient capture on the stockpiled litter.
Automation & Verification
Biogas

Biogas is captured as part of the anaerobic digestion process. It is the result of microbial processes and is primarily composed of methane, the chief constituent of natural gas. Like natural gas, it can be used to produce electricity, heat and refrigeration, or it can be upgraded to serve as a renewable fuel equivalent to compressed natural gas (CNG).
Products

High N:P Field Amendment

PFED's Field Amendment is a stable, peat-like mulch with a 4:1 – 6:1 nitrogen to phosphorus ratio. It is designed for application onto farm fields, and can be broadcast in exactly the same way (and with the same equipment) as poultry litter.

Advantages
High N:P Ratio compared to poultry litter (5:1 instead of 1:1)
Very low odor (comparable to finished compost)
Minimal nitrogen loss due to volatilization
Low pathogenicity
Products

High N:P Potting Soil

PFED's potting soil is a stable, ultra-absorbent organic mix with an 8:1 – 10:1 nitrogen to phosphorus ratio. It can be used as a standalone media or mixed into mulch or existing soils to provide additional nutrients and water holding capacity.

Advantages

Water retention
Earthy odor
High levels of micronutrients important to plants such as sulphur and calcium
Products

Phosphorus Fertilizer

PFED's phosphorus fertilizer was designed to be competitive with traditional P-based products on the market. It is 6% total phosphorus by dry weight, which is complemented by lower levels of plant-available nitrogen, potassium and other essential micronutrients.

Advantages
Low moisture content
Equals or exceeds other P-based fertilizer products