

Maryland Animal Waste Technology Fund

MARYLAND DEPT. AGRICULTURE

MAY 2021

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AWTF guiding authority

- Established in 2013, to provide grants to companies that demonstrate new technologies on farms and provide alternative strategies for managing animal waste.
- [MD Agricultural Code §8-7A-02](#)
 - *The goal of the Fund is to encourage the development and implementation of economically feasible technologies that help protect the public health and the environment by reducing the amount of nutrients from animal waste to enable farmers to meet nutrient management requirements and provide alternative animal waste management strategies to farmers*
- Funding support is provided by the Maryland Energy Administration and by the Chesapeake and Atlantic Coastal Bays Trust Fund.



Evaluation Process

- Annual competitive funding cycle @ \$1-3 million available
- Animal waste is “any waste stream generated by an on-farm animal, or waste generated through an animal production process involving Maryland livestock.” (Updated for FY21 cycle)
- MDA is served by a 7-member Technical Evaluation Committee
 - Readiness and demonstrated use for technology’s intended purpose
 - Site considerations and need
 - **Nutrient mass balance - technologies must address nitrogen & phosphorus reduction or improve manure management on MD animal operations**
 - Qualifications and experience of applicant
 - Economics and transferability of technology
- Stakeholder Advisory Committee with final approval by Secretary



Project Summary

Project Name	Animal Type & Location	State Funding	Technology	Status
Biomass Heating Solutions, Inc. (BHSL)	Poultry Double Trouble Farm Dorchester County	\$970,000	Fluidized bed combustion (Thermochemical)	Project complete/final reported submitted
Green Mountain Technologies, Inc. (GMT)	Horse Days End Farm Howard County	\$150,790	In vessel composter/turnkey	Project complete/final report issued
Green Mountain Technologies, Inc.	Dairy Cattle Glamour View Farm Frederick County	\$237,520	In vessel composter/turnkey	Project complete/final report issued
Veteran Compost	Livestock Anne Arundel County	\$350,302	Aerated Static Pile Composting	Prelim construction and securing permits from county



Project Summary (cont'd)

Project Name	Animal Type & Location	State Funding	Technology	Status
Planet Found Energy Development (PFED)	Poultry Millennium Farms Worcester County	\$676,144 (MDA) \$900,232 (MEA)	Anaerobic digestion with nutrient separating system	Project complete / final report submitted
Planet Found Energy Development (PFED)	Poultry Millennium Farms Worcester County	\$222,000	Nutrient recovery and bagging system	Production and sales underway
CleanBay Renewables	Poultry Litter Somerset County	\$1,400,000	Thermophilic Anaerobic Digester with Nutrient Capture System	Product studies underway. Nearing financial closing (proceed to construction)
Kilby Farms, LLC	Dairy Kilby Farms Cecil County	\$1,850,412 (MDA) \$115,500 (MEA)	Anaerobic digestion	Digester operational
International BioRefineries, LLC	Poultry Litter Wicomico County	\$1,947,490	Fast pyrolysis (rapid thermal decomposition)	Design and site prep complete. Component fabrication in progress

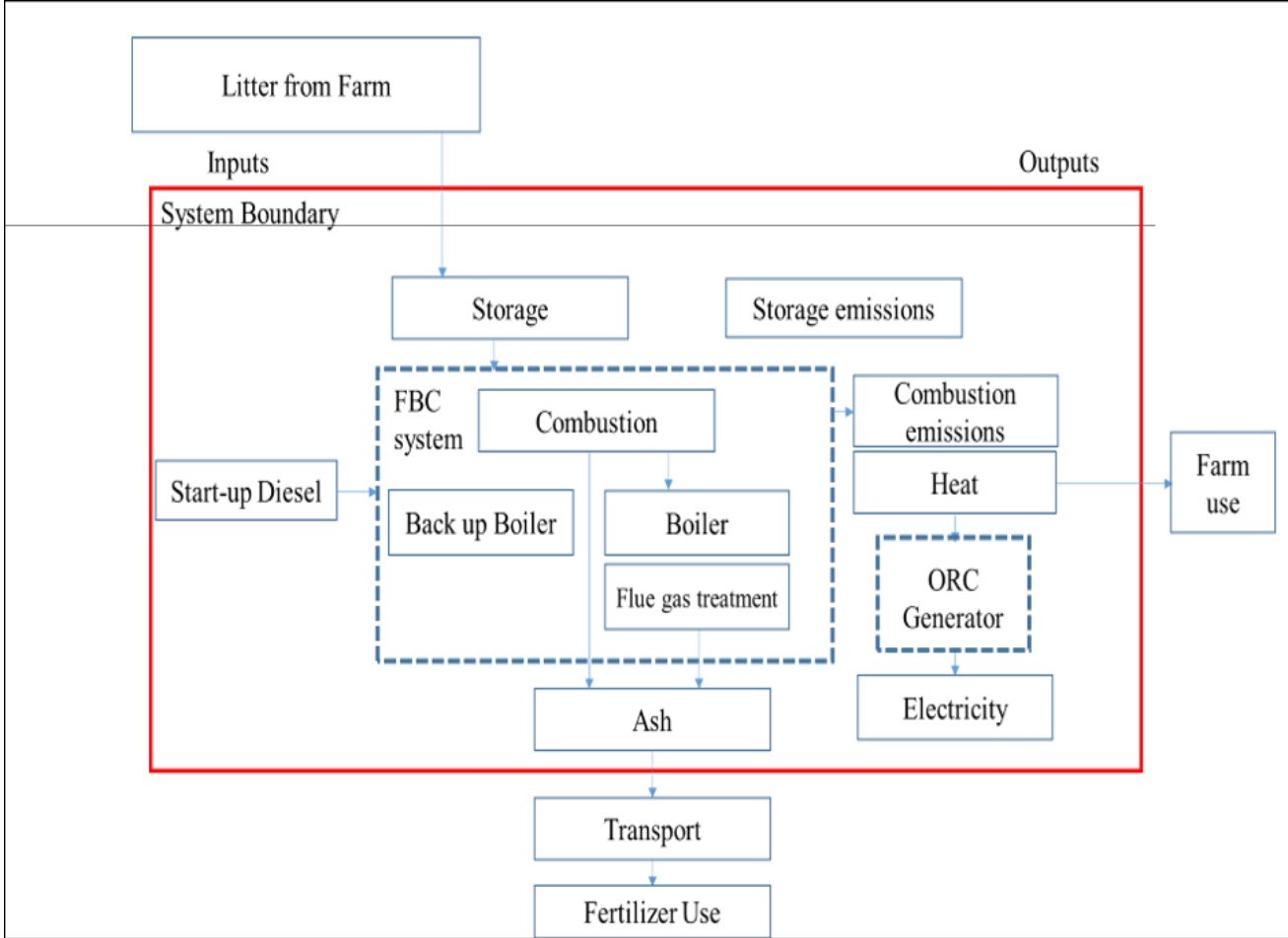


Third party monitoring

- Foster innovative technology solutions that address nutrient management needs at the farm scale. **The success of such technologies will benefit producers, local and state economies, and public well-being** → third party monitoring
- Academic institution for environmental and economic analysis
- Monitoring and Lifecycle Assessment
 - Nutrient and energy analysis
 - Manure to energy conversion
 - Environmental Impact

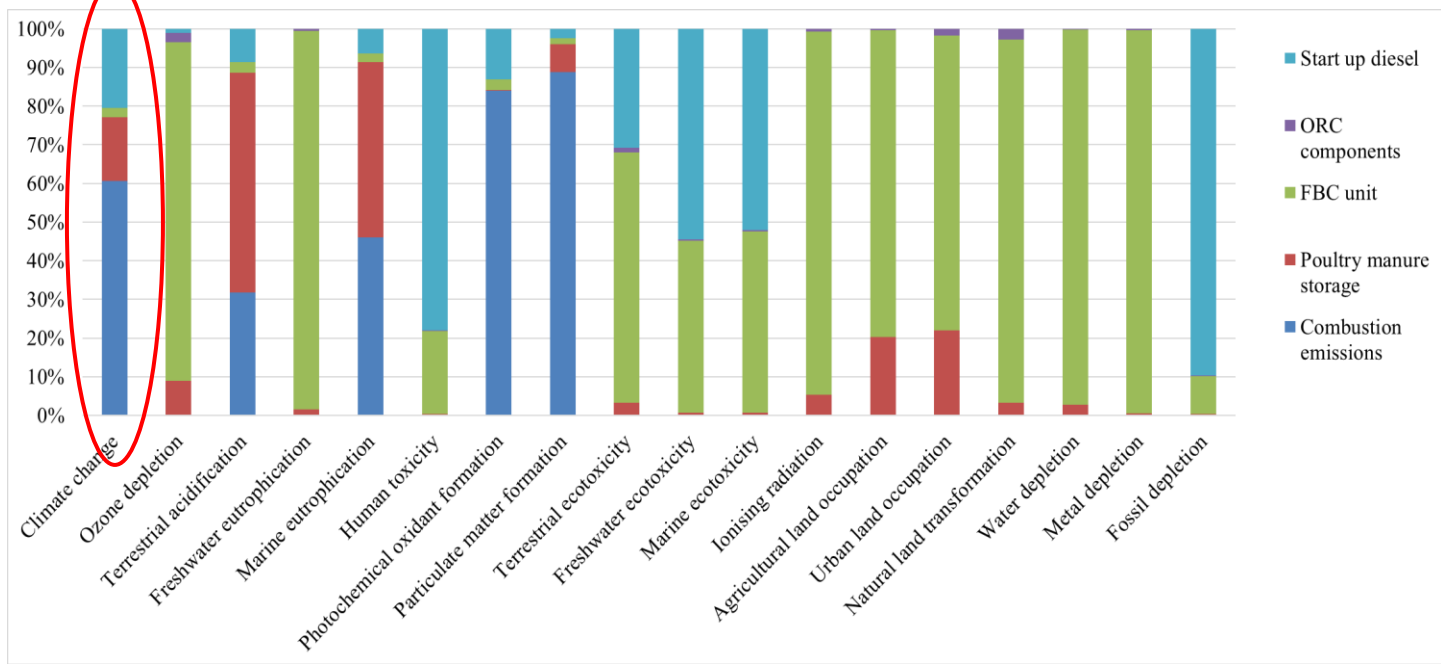
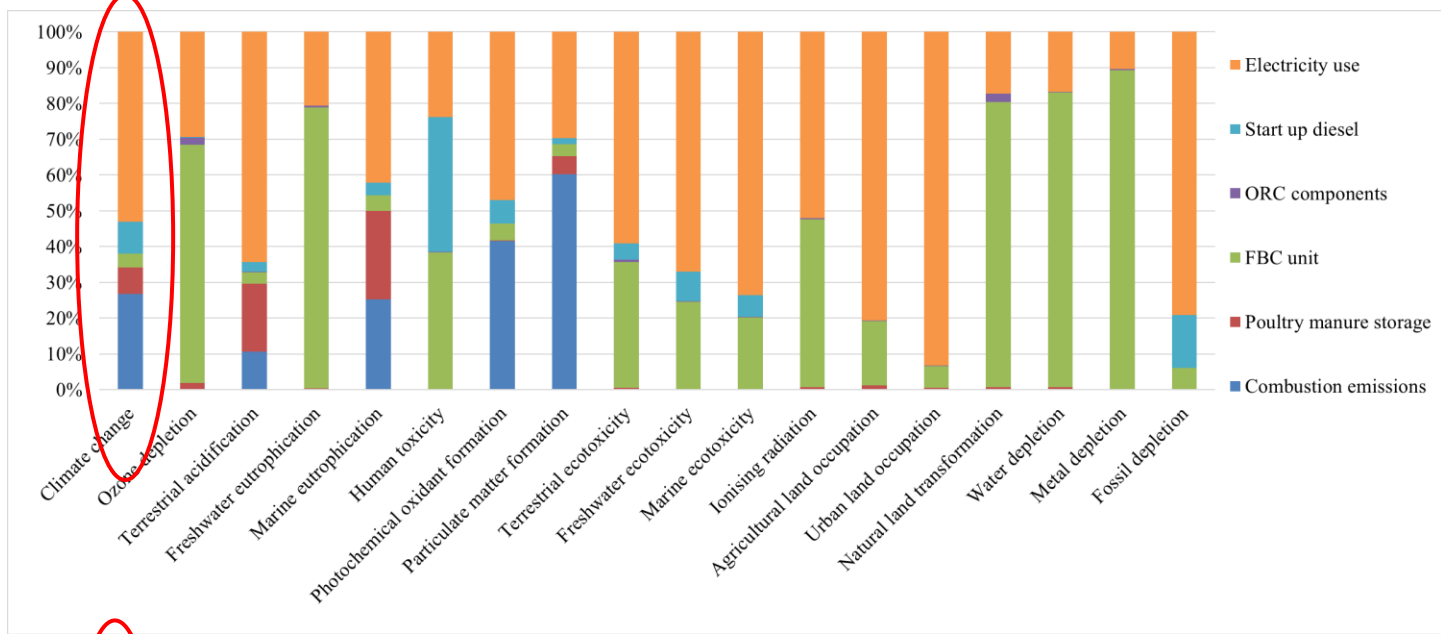


- Life cycle assessment (LCA) is an evaluation of environmental impacts of a product or service.
- LCA is often used to compare the environmental impacts of a product or service with a comparable alternative in order to determine how products differ in environmental impacts.



Example: System boundary of the combustion of poultry litter for heat and electricity production. Source: UMD





Example: actual data compared to best case scenario Emissions associated with the storage of poultry litter, start-up diesel use, and electricity required for daily operation

Reductions largely due to increased electricity generation, i.e. less electrical energy from the grid



Conclusions

All projects and FY21 announcement soon at :

https://mda.maryland.gov/resource_conservation/Pages/innovative_technology.aspx

Final thoughts:

- Farm sustainability, environmentally and economically, is positive for all
- Public funding to demonstrate and evaluate technology is critical
- Climate change impacts are project specific, but case studies to date show that operating technology at full potential can have net environmental gains when compared to baseline scenarios



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