



Farm Manure to Energy Initiative

Using Excess Manure to Generate Farm Income in the Chesapeake's Phosphorus Hotspots

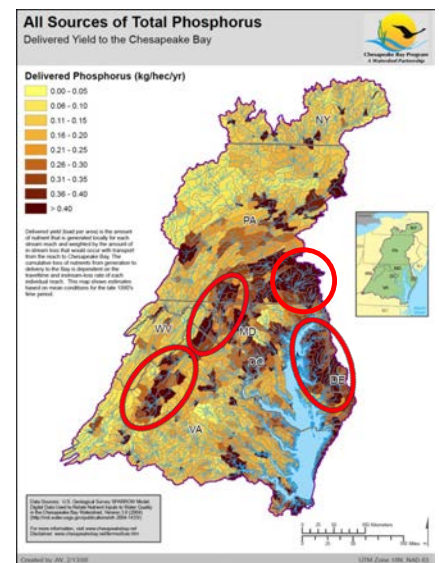
Organization: National Fish and Wildlife Foundation

Project Partners: Chesapeake Bay Funders Network, Farm Pilot Project, Inc., University of Maryland Center for Environmental Science, University of Maryland Finance Center, Virginia Cooperative Extension, Lancaster County Conservation District, and Sustainable Chesapeake.

Grant Award: \$848,000 (USDA Conservation Innovation Grant) and \$650,000 (National Fish and Wildlife Foundation and EPA)

Matching Funds: \$625,000 (Chesapeake Bay Funders Network) and \$873,000 (participating farmers and vendors)

Project Description. Giving farmers choices – choices for handling excess dairy and poultry manure, choices for reducing energy costs, and choices for new revenue streams, all while lowering pollution to local waters and the Chesapeake Bay – is the goal of the Farm Manure to Energy Initiative. To achieve this goal, project partners will work to identify, demonstrate and evaluate innovative technologies capable of converting excess manure and poultry litter to energy, while also providing alternatives to land application and additional revenue streams for farms. Technologies will be demonstrated on farms located in manure “hotspots” in the Chesapeake Bay region including: the Delmarva Peninsula, the Shenandoah Valley (VA), the Western Potomac River (WVA), and Lancaster County (PA). Partners will also work to increase technical assistance, information, and financing options available to farmers. Specific project objectives are to:



- Demonstrate showcase manure-to-energy technologies on working farms in nutrient hotspots in the Bay watershed. These projects will be monitored to document technical, environmental and economic performance.
- Create a network of local independent manure to energy experts as well as a web-based clearinghouse of data and resources that can help farmers and technical service providers compare differing technologies.
- Stimulate the development of markets for byproducts from energy production that generate additional revenue for farmers.
- Improve access to both public and private funding by developing state-specific financing templates that identify existing funding options as well as innovative approaches for private financing.

Goals and Outcomes. The overarching goals of the Farm Manure to Energy Initiative are five-fold: 1) reduce the land application of manure in the Chesapeake Bay's nutrient hotspots, 2) displace imported fertilizer products with products derived from locally grown manure, 3) reduce phosphorus and nitrogen runoff to the Chesapeake Bay and its tributaries, 4) strengthen the viability of animal agriculture in the region by supporting the development of new revenue streams for excess manure and poultry litter, and 5) expand financing options for manure-to-energy technology deployment in the region. Anticipated outcomes include: an annual reduction of 3,280 tons of land-applied manure, an annual reduction of 100,800 pounds of phosphorus runoff, and an annual reduction of 200,000 pounds of nitrogen runoff.

Status. The project is in the initial start-up phase. The partnership is focusing early efforts on identifying technologies that can convert poultry and other livestock manure to energy (and other valuable products), and reduce fertilizer loss to surface waters, that are suitable for demonstration on farms in the region. In addition, project partners are in the process of identifying appropriate demonstration farm sites where these technologies may fit best. Two technologies have already been selected for demonstration on two poultry farms – one on the Eastern Shore and the other in the Shenandoah Valley of Virginia (see figures 1 and 2 below). Additional vendors will be extended an opportunity to submit information in 2012.

Next Steps. Manure to energy technologies that will be demonstrated by this project are ready for farm scale operation, but they need to be demonstrated on working farms in the Chesapeake Bay watershed before widespread adoption is likely to occur. Field days where farmers can see the technologies operational in familiar settings, as well as objective, third-party economic analysis, environmental monitoring and performance evaluation will provide farmers, conservation professionals, and funders with information necessary to identify technologies that are appropriate for widespread deployment. In addition to on-farm demonstration and technology evaluation, development of information resources, including a network of experts that can meet one-on-one with farmers and a web-based information clearinghouse, will help farmers select appropriate technologies for their operations. Efforts to identify and expand options for financing resources will increase the likelihood that farmers interested in adopting these technologies will have the financial resources necessary to proceed with implementation.



Figure 1. Davel Lovell farm in Melfa, VA. Eleven poultry houses producing 1.8 million birds and 2,200 tons of litter annually.



Figure 2. Oren Heatwole farm in Dayton, VA. Two broiler houses producing 422,000 broilers and 814 tons of litter annually.

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