

HARBORVIEW FARMS

A Grain Farm Case Study

Mathias Ag Program

Harborview Farms is one of the larger agricultural operations in Maryland, growing 475,000 bushels of corn, 140,000 bushels of wheat, and 60,000 bushels of soybeans annually. Sustainability has always been a big part of the farm's philosophy. In 2012, the farm installed a 200 kW solar array to reduce fossil fuel usage, and the farm received recognition for its efforts to protect the Chesapeake Bay.

The Hill Family (Trey and Cheryl Hill and Trey's parents Herman and Christy Hill) spends approximately \$27,000 annually on electricity and nearly \$250,000 on propane. Much of that propane fuels the farm's 35-year-old inefficient grain dryer. When the Hills learned of financial assistance available through the Kathleen A.P. Mathias Agriculture Energy Efficiency Program, they decided to move forward with replacing their aging dryer.

Grain dryers use a lot of energy, typically propane or natural gas, to dry harvested grain. The energy used can depend on the variety of crop, the original moisture level, and the final moisture level. Many farms have old grain dryers; newer models are considerably more energy efficient, typically saving between 15-40% of the energy used.



The model the Hills chose will reduce the farm's propane use by 23% and pay for itself in 6.5 years—not bad for equipment that generally lasts between 20 and 30 years (see Table 1).

Table 1: Implemented Efficiency Measures and Associated Savings

Recommended Measure	Electric Savings (kWh)	Propane Savings (gal)	Estimated Annual Energy Cost Savings	Installed Cost	Estimated Payback in Years
Grain Dryer Replace (1) Redex RT-2000 grain dryer from 1977 with a tower-style grain dryer. The new dryer has a Btu/lb of water removed rating of approximately 1,556 Btu/lb or less. Both the existing and proposed grain dryer use electricity and propane.	3,207	32,306	\$57,540	\$374,505	6.5
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The Hill family installed the equipment in April 2013 and is glad to have the new dryer up and running for the fall harvest season. “Because our farm is so well known in the area, we know others will be looking to us to take the lead with upgrading our equipment,” said Trey. “This new grain dryer is the latest step in our path to energy independence.”

The Hills are continuing their tradition of environmental stewardship through this installation. Saving nearly a quarter of their propane usage helps the farm financially while serving the farm’s goal of minimizing its fossil fuel use. The grain grown on Harborview Farms is turned into chicken feed and milled into flour, so energy efficiencies achieved on the farm help make these end products more sustainable, too.