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## Good planning helps combat high energy prices

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MOUNT JOY, Pa. – Last December, Brubaker Farms in Mount Joy, Lancaster County, embarked on an innovative way to combat not only increasing energy prices, but also the inflation that has hit the bedding market now that wood shavings have value to consumers who burn them for energy.

After two years of planning and lots of support from local and state government officials, PPL Electric, the local conservation district and the surrounding community, Brubaker Farms creates 4,000 kilowatt hours of electricity per day from their new manure digester. That's enough for the farm operations – including the 750-cow dairy and poultry houses – plus 150 to 200 homes.

“People in the community are excited about this,” said Luke Brubaker, who operates the 1500-acre farm in partnership with his sons Mike and Tony. “We’re essentially making something out of nothing – making electricity out of something that would otherwise just go into the air.”

The digester breaks down manure collected from the cows. This process creates methane that is captured and used to run a special engine designed in Spain. The engine generates the electricity for the PPL grid.

The net metering arrangement values the energy they use and sell to and from this grid at retail price; however, they are paid for their excess electricity only once per year instead of monthly.

Instead of purchasing energy to heat the digester to its optimum temperature of 100 degrees, all of the heat from the generator engine is captured and used for this purpose. The entire system is computerized.

After being used in the digester process, the manure is pumped to the separation facility. From there, the liquid portion goes to a holding pit, which includes an overflow lagoon, and the solids are re-used for stall bedding.

The excitement of “cow power” has “energized” everyone involved at the farm.

It takes the manure from about four cows to generate electricity for one home for a year. Brubaker Farms uses about five percent of the energy it creates from 750 cows, selling the rest back to the grid.

“The process also reduces the odor by about 90%, and it allows us to move the waste nutrient around to where it is needed,” said Luke, noting they produce enough bedding solids to cover all of their needs at the farm, plus sell to other farms for additional income.

State and federal grants, along with low-interest loans, paid for the digester, which cost more than \$1 million to install.

Being an active member of the Professional Dairy Managers of Pennsylvania (PDMP) has helped the farm to succeed, he added. “It keeps you on the cutting edge. With a larger herd you can’t really afford to make mistakes.”

Luke has found that exchanging ideas with other dairy farmers with all sizes of herds is helpful. “Plus PDMP gives us a voice in policy-making that affects our industry,” he emphasized. “I wouldn’t have time for that by myself.”

Visiting farms in other countries has also given him a different perspective. He’s toured dairy farms in Russia, Ukraine, Germany and Bolivia, among others. “It makes me realize how good we have it here.”

Luke has been a full time farmer for 30 years, having taken over the family farm established in 1929. He has seen many ups and downs over those years

“Historically this is just another level of costs,” he said. “When fuel was just a dollar a gallon we didn’t get as much for our product. Our profit margins haven’t really changed. We’re just here to give it our best.”

No matter what the costs are, Luke enjoys many aspects of dairy farming. “I get real satisfaction when I give a school tour and they get excited about how the farm works,” he said.

Ron Kline of Y-Run Farms in Bradford County has also seen highs and lows during his 40 years as a dairy farmer. He has been trying to buy fuel oil in larger quantities in order to secure discounts, and buys feed ahead when he can.

“That’s worked out okay, but then I have to store it,” Kline said. He stores the extra fuel in a fuel truck on his property.

Y-Run Farms has about 500 cows, and farms 700 acres including corn and hay. Using a no-till method has also helped in conserving resources, including energy. “We went through this in the 1970s when soybean and corn prices were way up,” said Ron. “It forced us to look for alternatives, and we’re doing that again.”

Still, he admits that with prices higher on both input and sales, his farm is holding on for now. “It’s not as bad as in 2006 when milk prices were low and feed prices were high,” he said. “We’re okay for now, but I don’t know about six months from now.”

Milk prices in 2006 hit a 20-year low and some farmers are still trying to recover, according to the Pennsylvania Farm Bureau. The PFB in March asked the Pennsylvania Milk Marketing Board to increase the Class I over-order premium, saying an increase was justified due to higher costs of production.

In his testimony, PFB Vice President Richard Ebert, a Westmoreland County dairy farmer, said that dairy farmers have incurred average cost increases of 50% for feed and fertilizer, 30% increases in seed costs, and fuel prices of nearly 50%.