

Energy Audit – GDW Turkey Farms, West Olive, Michigan

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Farm overview

GDW Turkey Farms in Ottawa County, Michigan finishes approximately 600,000 turkeys at four different sites in Ottawa County, Michigan. Turkeys are sold to Michigan Turkey Producers, LLC in Grand Rapids, Michigan when they reach market weight.

Project overview

The farm purchases electricity from Consumers Energy and natural gas from SEMCO. In 2013 a certified Type 2 agricultural energy audit was conducted by Schrauben & Associates. The audit recommended making lighting improvements, upgrading to infrared tube heaters, adding insulation, installing insulated doors, and planting a windbreak. The farm was chosen as an Energy Pilot Farm and received a \$25,000 grant from the Michigan Farm Energy Program through the Michigan Agency for Energy to implement energy conservation measures recommended by the audit.



Energy savings

If all the energy conservation measures recommended by the audit were implemented, it would cost the farm \$231,688. The resulting savings in reduced electricity and natural gas consumption would be \$57,115 per year for a payback of 4.1 years. To date, the farm has implemented several projects. The following are two examples of these projects:

Example 1.

In one brooder house, 100 T-12 lights were replaced with LED lights. The cost to replace the lights was \$21,000. The farm received a \$4,900 rebate from Consumers Energy to offset the replacement costs. Annual savings from replacing the lights was \$4,000 in reduced electric expense and \$2,000 in maintenance associated with ladders and lift equipment plus labor. The payback period for this project was 2.7 years.

Example 2.

Improvements to four finishing barns included the installation of double ply energy efficient curtains to replace 15 year old single ply curtains, tightening up the ends of the barns to reduce heat loss, installing eight destratification fans, replacing existing lighting with LED lights, and replacing standard forced air heaters with infrared heaters. This last improvement reduced BTU usage from 1,800,000 to 1,400,000

BTUs. The cost for these improvements was approximately \$100,000. The farm received a Michigan Farm Energy Program grant for \$25,000 and received rebates from Consumers Energy for \$6,000. The total cost to the farm was \$69,000. Cost savings are estimated to be \$12,000 per year and are being measured at this time. It is worth noting that part of what is being measured is the frequency of replacing lights. Most LED bulbs are rated at 60,000 to 100,000 hours compared to T8 bulbs rated at 20,000 hours.

Additional benefits

Besides saving the farm money, changing the lights in the brooder house improved animal welfare (cleaner birds, less cannibalism, and calmer dispositions), increased the weight of the turkeys leaving the brooder, lowered the brooder mortality rate, and created safer working conditions for employees. Implementing energy conservation measures in the finishing barns has resulted in better litter conditions, lower condemnations on birds shipped to slaughter, and increased bird comfort. Labor and bulb costs were also reduced due to less frequent bulb replacement.

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Information source

Audit report for GDW Turkey Farms prepared by Schrauben & Associates, LLC, Certified Farm Energy Auditors. schraub@chartermi.net

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