

Farm Energy IQ



Dairy Farm Energy Efficiency ASP Activity Sheet

Use the USDA Energy Estimator to estimate the energy savings resulting from installing a variable frequency drive on a milk harvesting vacuum pump in the following example.

Enter the necessary data in the estimator:

1. State: PA
2. Operation: Dairy
3. Annual Milk Production: 3,600,000 lb
4. Air circulation: Barn – yes; Parlor – No
5. Water Heating: Electricity
6. Town: Greensburg
7. Number of confined cows: 100
8. Lighting: Incandescent
9. Milk cooling: None
10. Milk harvesting: VFD No
11. Electricity cost: \$0.10 per kWh

What is the estimated energy savings due to the installation of a variable frequency drive on the milk harvesting pump?

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Dairy Farm Energy Efficiency ASP Activity Sheet-Solution

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Town: Greensburg

Number of confined cows: 100

Lighting: Incandescent

Milk cooling: None

Milk harvesting: VFD No

Electricity cost: \$0.10 per kWh

What is the estimated energy savings due to the installation of a variable frequency drive (VFD) on the milk harvesting pump?

On the 'Annual Dairy Cow Housing System Analysis' sheet, at the bottom, 'Your Milk Harvest' is estimated to consume 28,800 kWh per year (before VFD installation). If a VFD is installed, the energy consumption is reduced to 15,800 kWh per year. Hence, estimated energy savings is 13,000 kWh or 45%. This energy savings equate to approximately \$1,300 per year at \$0.10 per kWh.