

ENERGY SAVINGS TIPS

Energy efficiency is often an inexpensive way for dairies to reduce costs, enhance environmental quality and increase productivity and profitability.

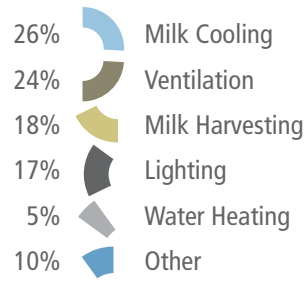
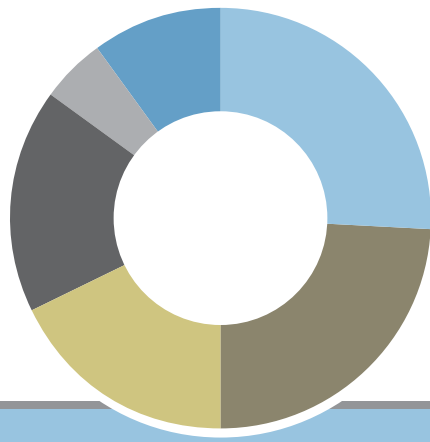
Most energy efficiency upgrades also improve:

- Comfort
- Safety
- Indoor air quality
- Equipment life

DAIRIES



Electricity Use in U.S. Dairies



Source: National Center for Appropriate Technology, Dairy Farm Energy Efficiency

MILK PROCESSING

- Install a variable frequency drive (VFD) on your vacuum pump system. The VFD measures how much vacuum is required and regulates the speed of the pump motor to match demand. You may see savings up to 60 percent with this upgrade.
- Well-water heat exchangers or pre-coolers can be installed to reduce milk temperatures 40 degrees or more saving up to 60 percent on the primary milk cooling system. The resulting warm water can also be used to perform tasks such as washing and cleaning or can be provided as drinking water for cows.
- Milk transfer pumps are commonly run at fixed speed. Installing a VFD slows down the milk through the heat exchanger pre-cooler to reduce the milk temperature by up to 15 to 20 degrees.
- Primary milk cooling is provided by a refrigeration system. Refrigeration heat recovery can capture waste refrigeration heat from the condenser to preheat water before it is transferred to a water heater. This can save 20 to 60 percent of the energy required to cool milk for storage.

VENTILATION

- Ensure adequate ventilation. Heat and moisture in confined areas can adversely affect the health and productivity of animals and humans. Research has shown that inadequate barn ventilation can reduce milk production by 6 to 14 pounds per cow per day.
- VFDs installed on ventilation fans can be tied to a thermostat to change the airflow based on ambient temperature. These ventilation fans help optimize cow comfort and the VFDs save over 50 percent of the energy used by fixed speed fans.
- High-volume, low-speed fans are circulation fans with diameters ranging from 4 feet to 24 feet. They can replace six 48-inch fans and save substantial energy. These fans are quiet, reduce moisture in buildings and reduce fly and bird populations in barns.



The U.S. dairy processing industry spends over **\$1.5 billion** annually on energy.

Dairies account for around **15%** of the entire U.S. food industry's output.

Milk processing consumes over **44%** of a dairy's energy use.

Idaho is the **4th highest** milk producing state in the country.

Over the past three years, Idaho Power provided over **\$300,000** in incentives to dairies that participated in energy-savings programs.

LIGHTING

- LEDs can last up to 25 years and reduce energy use by over 90 percent. If you haven't upgraded to LEDs, get a quote from a lighting vendor or contractor. Idaho Power has incentives available and projects can lead to paybacks of one to three years.
- Switch exterior lighting to LEDs to reduce energy use, direct the light precisely and minimize light pollution. Consider controls that dim or shut off exterior lighting that is not needed during certain times of night.
- Install occupancy sensors in areas with low traffic such as bathrooms and storage areas.
- Daylighting uses natural ambient light to reduce electric lighting needs. Automatic photosensor controls that sense daylight help ensure electric lighting is reduced when enough daylight is available.



Other Opportunities

- Electricity used to run irrigation pumps is often a large contributor to energy use on farms. Ensuring your irrigation system is operating efficiently may reduce energy costs and can result in water savings and better uniformity. Idaho Power has incentives available for irrigation efficiency projects. Visit idahopower.com/irrigation to learn more.
- Stock tanks typically use electric heaters to keep from freezing during the winter. Consider installing a thermostatically-controlled de-icer that will only use as much energy as needed to keep the water from freezing.

Additional Resources

Register for **My Account** at idahopower.com/myaccount to pay your bill, get account information, understand your use and find more ways to save.

ENERGY STAR has a guide available to help dairies save energy:

Energy Efficiency Improvement and Cost Saving Opportunities for the Dairy Processing Industry.

Idaho Power has programs available to help customers just like you save energy and money. To learn more, visit idahopower.com/business.



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