

SAVING ENERGY ON YOUR FARM



Climate Action Initiative
BC AGRICULTURE & FOOD

BC DAIRY FARMS

Reducing energy consumption is an excellent way to reduce operating costs, as well as minimize environmental impacts. Below are some of the key energy saving opportunities applicable to dairy operations in BC. Consider these opportunities and work towards implementing those applicable to your operation.



photo by Walter Goerzen

Low or No Cost Opportunities for Dairy Farms

Quick ways you can reduce your energy costs right now:

- Ensure hot water heating set-points are as low as possible.
- Repair dripping hot water faucets.
- Ensure air-cooled condensers are clean and free of obstructions.
- Check vacuum levels and reduce if possible.
- Repair compressed air leaks.
- Turn out lights when not needed.
- Livestock waterer – do not heat above 5 to 8 °C.
- Check for loose or worn pump/fan belts and tighten or replace.
- Clean dirty fan blades.

What are the next steps?

1. Implement low cost/no cost energy saving opportunities immediately.
2. Contact the **LiveSmart BC Agriculture Energy Advisor** to evaluate additional energy saving opportunities for your operation.
3. Use the LiveSmart BC Agriculture Energy Advisor to help you access incentive funding.
4. Implement projects and benefit from energy cost savings!

LiveSmart BC Agriculture Energy Advisor

The BC Agriculture Energy Advisor is a **FREE** resource available to assist producers with the following:

- Provide direction and guidance to reduce on-farm energy consumption;
- Visit farms to identify and quantify energy saving opportunities;
- Help to access financial incentives for energy upgrades where possible;
- Support with implementing energy efficiency measures;
- Monitor and verify energy savings;
- Provide technical information and fact sheets.

Agricultural producers are encouraged to contact the Energy Advisor at any time.

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Additional Opportunities for Dairy Farms

Opportunity	Savings Potential*	Incentives**	Capital Cost	Payback
Add time-clock or isolation valves on air compressors: Air compressors often run unnecessarily outside of milking sessions, especially if there are leaks.	5-25% savings on air compressor energy. This equates to around \$500/yr in savings for a 130 cow operation.	None available	Low cost. Between \$20 and \$50 for a low-voltage time-clock from a hardware store.	Quick. Around 5 weeks for this example.
Replace diesel or tractor driven irrigation pumps with electric pumps. Electric pumps require considerably less maintenance, further reducing operating costs.	Around \$1,400/yr for replacing a 50hp tractor driven pump with a 20hp electric pump, assuming 2 weeks of pumping per year. Also CO ₂ emissions reduced by 4.8 tons/yr.	None available	Approximately \$4,000 to \$5,000 installed (excluding any power line extensions that may be required).	2.8 to 3.5 yrs
Lighting upgrades: Replace incandescent lamps with compact fluorescents or LED. Replace T12 fluorescent lamps with T8 or T5 lamps.	Variable, but as an example, for 2 x 110 watt T12 lamps (magnetic ballast), replacement with 4 x 32 watt T8 lamps will save approximately \$40/yr if turned on 12 hrs/day.	BC Hydro PIP / LiveSmart BC – varies depending on lamp type – \$30 per fixture for this example.	Approximately \$200 per fixture installed for this example.	4.8 yrs for this example.
Add milk pre-cooler: Use well water to cool milk via a heat exchanger prior to milk arriving at the cooling tank. Well water is warmed and can be used for watering troughs. Cows will drink more water if warmed, which increases milk production.	20-25% savings on compressor energy. Approximately \$600/yr savings for a 130 cow operation would be typical.	None available	Variable. Around \$5,000 could be expected.	Approximately 8 years for this example.
Heat recovery of refrigeration condenser line: Recover heat from condenser side of milk refrigeration system and use to pre-heat washing water.	Up to 40-50% savings on hot water heating. Approximately \$1,000/yr savings for a 130 cow operation.	None available	The cost of this system will vary for each site depending on size, distance between heat sources, and other factors.	Variable. <i>Contact the BC Ag Energy Advisor to evaluate this opportunity for your site.</i>

* Savings are estimates only. Savings are based on the following energy costs: Electricity \$0.08/kWh, Gas: \$8/GJ, Diesel: \$1.10/litre

** Incentives may change without notice. Check with the BC Agriculture Energy Advisor for current incentive amounts.

Other Resources

- BC Agriculture Energy Advisor: www.bcagclimateaction.ca/energy
- LiveSmart BC Incentive Program: www.livesmartbc.ca/incentives
- Fortis BC Incentive Program: www.fortisbc.com/NaturalGas/Business/Offers
- BC Hydro PIP: www.bchydro.com/rebates_savings/product_incentive_program.html



DISCLAIMER: All savings, capital costs, and incentive amounts shown in this fact sheet are estimates only and are not guaranteed.

It is recommended that the producer contacts the BC Agriculture Energy Advisor to better quantify these for their own site before proceeding with a project.