

Electricity conservation on Ontario farms



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Financial incentives to boost energy efficiency

Hydro One is offering financial incentives to help farmers increase their energy efficiency and improve their bottom line. Under its PowerSaver Business Incentive Program, Hydro One will reimburse customers for a portion of the cost of purchasing energy efficiency technology to a maximum of \$50,000 per farm operation.

hydroOne The incentives level starts at \$150 per KW saved for pre-approved projects that result in measurable reduction in electrical peak demand. The financial incentives apply to farm operations installing technologies that increase energy efficiencies of lighting systems, motors and transformers.

“Hydro One’s Business Incentive Program is aimed at initiating energy conservation and load management projects that will reduce peak demand and contribute to the increased reliability of electricity supply. By offering financial incentives to Ontario’s farming community along with other commercial, industrial and institutional sectors in the province, Hydro One is encouraging broader participation

in its conservation programs,” explains Giuliana Rossini, Hydro One’s Director Strategy and Conservation Officer.

The benefit to the farm operation includes decreased electricity use, lower electricity cost, higher profit margins, financial incentives for technology improvements, improved facility operations and reduced maintenance costs. Technologies eligible for the financial rebate include fluorescent lighting systems (T8, T5 and CFLs), metal halide lighting systems, LED exit signs, occupancy sensors, motors, cooling equipment, transformers, temperature controls and energy saving water bowls. The technologies eligible for the financial incentives have been

successfully used in other farming operations in Ontario and other jurisdictions. By fall 2007, similar programs will be in place for farms across Ontario.

Hydro One Networks must receive applications for projects by May 31, 2007, and the project must be completed by August 15, 2007. The program is also available to initiate conservation and load management projects within the commercial, industrial and institutional sectors. Full details on eligibility, qualifying technologies, a fact sheet and application forms and guidelines are available at www.PowerSaver.ca.

Apply today as funds are limited.

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Ontario farmers are major consumers of electrical energy, spending over \$224 million annually to run their businesses – about 2 billion kWh of electricity a year. They are also among the most energy efficient farmers in the world, continuing to produce more agricultural products and use less energy every year.

But, like other sectors in Ontario’s economy, Ontario agriculture faces rising energy prices, increasing operating costs and fierce worldwide competition. All these pressures underscore the importance of ensuring Ontario farms control their energy costs to return to economic stability. Energy efficiency and conservation is still the best response to increasing energy costs.

A recent pilot project, sponsored by the Ontario Power Authority, audited the energy efficiency of nearly 100 Ontario farms in swine, poultry, dairy and greenhouse operations. The audit found that while farms are generally energy efficient, there are still opportunities on Ontario farms for electricity costs to be further reduced and help make farming operations more competitive. The audit identified average potential savings of \$2,100 annually per farm.

Selling farm-generated power

Ontario farming operations can get into the business of generating and selling renewable energy under a new initiative called the Standard Offer Program.

Growing the Margins conference April 12-13, 2007

The challenges and opportunities in energy conservation and efficiency facing Ontario farms, food processing operations and rural industries will be explored at the April 12-13, 2007, conference *Growing the Margins: Energy Conservation and Generation for Farms and Food Processors in London, Ontario*.

Agricultural energy conservation and generation experts from Canada, U.S. and other countries will be discussing existing and emerging technologies, energy conservation and demand management, regulatory environment, financing, mixed waste diversion and utilization, applications and best practices.

The conference will offer a special one-day, pre-conference tour of several renewable energy and energy conservation projects.

The conference supporters include Farms.com, Pioneer, AG Energy Co-operative, Firefly Energy, the Government of Ontario and the Ontario Power Authority.

Conference details are available at www.gtmconf.ca.

The program supports greater use of renewable energy sources such as wind, solar photovoltaic (PV), renewable biomass, bio-gas, bio-fuel, landfill gas or waterpower for generating electricity. Renewable electricity generation projects must have an installed capacity of not more than 10 megawatts and be connected to an eligible electricity distribution system in Ontario at a voltage of 50 kilovolts or less. Generators must enter into a contract with the Ontario Power Authority for a term of 20 years.

Initially, all generators with wind, biomass or waterpower projects will be paid a base rate of 11.0 cents per kilowatt (kWh) for electricity delivered to the local electricity distribution company. Projects that demonstrate they can operate reliably during peak hours will be paid an additional 3.52 cents per kWh for electricity delivered during peak hours. Solar PV generators will be paid a fixed price of 42.0 cents per kWh for the full 20-year term of the contract.

More information is available in the Ontario Power Authority's website at www.powerauthority.on.ca/SOP.

Lighting efficiency in the dairy sector

Fluorescent lighting is the recommended main lighting source in dairy production. It is very energy efficient compared to incandescent lighting, has long life cycles and provides good light quality for livestock. Fluorescent tube lights last 20,000 hours and cost \$2.00 each. Conversion from incandescent to fluorescent will reduce energy usage by up to 75 percent. Incandescent lamps may be economical where lights are turned on only occasionally and for short periods, such as in storage rooms.

An easy way to switch to a more energy efficient lighting system is to replace incandescent bulbs with compact fluorescent (CF) lamps of equivalent light output. The compact fluorescent system can be screwed into the existing socket. No rewiring is required. The cost of CF – which has a rated life of 10,000 hours – ranges from \$4 to \$15 depending on the wattage. Installing fluorescent tubes or HID systems requires rewiring and a lighting design to ensure the production area is evenly lit at the correct light intensity.

It is estimated that over a two-year period, switching to a T8 fluorescent lighting system from an incandescent one could save more than \$800 in a typical dairy operation. The cost to install and operate an incandescent system in a dairy barn with 30 100 W long life incandescent lamps was compared to the cost of a fluorescent single tube system. The calculations assume an energy cost of \$0.0953/kWh (March 2005 rate) and that the lights are typically operating 18 hours per day. The incandescent system would cost about \$450 to install and \$1,918 annually to operate. Installing twenty 4-ft single tubes, T8 fluorescent fixtures would provide an increased light level. This T8 system would cost \$2,400 to install and only \$511/yr to operate. Installed costs are approximate only and can vary depending on job complexity, size and a number of other factors.

Over the long run, lighting in most farm operations has the potential to save energy for the farmer. Using dimmers can also reduce energy costs. By making these changes, along with other improvements, farm lighting systems will be more energy efficient, leading to improved farm productivity, increased revenue and lower energy costs.

More information about how efficient lighting can save energy and reduce energy costs is available at www.omafra.gov.on.ca.

Electricity conservation on Ontario farms is produced by the Ontario Power Authority to provide information about energy conservation and efficiency and innovative applications to help Ontario farmers better manage their electricity costs. This publication, available online at www.powerauthority.on.ca, examines a variety of technologies and best practices that improve farming operations and reduce energy costs. Your comments and suggestions are welcome. To have your name added to the mailing list, send an e-mail note to info@powerauthority.on.ca.