

## **ACA Cooperative Limited**

New Minas, Nova Scotia, Canada

## 2005 Case Study

This ACA primary poultry processing plant is part of Eden Valley Farms, a major producer of chickens, turkeys and eggs. The plant operates on a staggered shift basis normally spanning 18 hours per day. In the spring of 2004, the company decided to proceed with an Opportunity Assessment as part of the Eco-Efficiency Program for Manufacturers, and based on the results, undertook an Implementation Plan/Feasibility Assessment. The assessments were conducted by Wentzell Engineering in association with Janis Rod Environmental Consulting.

ACA environmental management policy states that the company is “committed to responsibility for the environment through training, conservation and compliance with environmental legislation”. They have demonstrated this commitment through ongoing efforts in recycling wastes, improvements to their wastewater treatment system and most recently, utilization of the Eco-Efficiency Program for Manufacturers identify opportunities for further improvement.

### **The Process**

The plant receives live birds and it processes them into fresh whole birds and components. The process includes killing, bleeding, scalding, de-feathering, washing, evisceration, chilling and packaging. Although it has a high degree of mechanization, some operations are labour intensive.



### **The Assessment**

The Opportunity Assessment identified 30 potential opportunities for improvement involving water and wastewater, energy, solid wastes and recycling, raw materials, monitoring and control as well as policy and management. Several of the opportunities were deemed to be actionable by company personnel and several others appeared not to be practical or would not generate an acceptable return on investment. The following seven opportunities became the subjects of detailed analysis in the Implementation Plan/Feasibility Assessment:

1. improve quality of wastewater by separation of solids on evisceration line
2. reduce water consumption and improve wastewater quality by improving cleaning procedures
3. use re-circulated water in the scalding process
4. use re-circulated water in the crate washer
5. reduce water content of offal skim from dissolved air flotation unit
6. improve efficiency of chiller tank cooling
7. improve lighting utilization and control

## Assessment Results

Potential energy savings	462 GJ/yr	\$5797/yr
Potential water savings	7500 cubic meters/yr	\$4875/yr
Improved wastewater BOD loading	22800 Kg/yr	\$12000/yr
Reduced moisture in offal		\$6600/yr

The assessment estimated \$29000 per year in potential savings for the various opportunities assessed with paybacks ranging from 2 months to just under 4 years. It also showed that the plant is already in the bottom quartile for water consumption per unit of production in the industry.

Frank Ford, ACA's program coordinator said, "We were happy to have the opportunity to be involved in the Eco-Efficiency Program for Manufacturers. Our primary concern going in was the reduction of water and energy used in our processes. The program resources were very helpful in identifying and quantifying waste reduction opportunities in the plant. The report will be utilized where possible as we continue to make changes to our process. It was a very beneficial exercise and I would recommend it to any company looking at reducing waste in their facility."



The Eco-Efficiency Program for Manufacturers is working for ACA Cooperative Ltd. It is demonstrating that there are significant opportunities for improving environmental performance and at the same time improving the bottom line for the company.

The Eco-Efficiency Program for Manufacturers is aimed at small and medium sized manufacturers (SMEs) in Nova Scotia and is designed to increase awareness for pollution prevention and eco-efficiency and to stimulate implementation of cost-efficient opportunities. The cost of hiring a qualified consultant to identify eco-efficiency and pollution prevention opportunities is offset by the program. There is a cost shared arrangement with the program contributing 75% and the participating company contributing the 25% balance. The program is also intended to help build capacity in the consulting community throughout the province.

Cooperating agencies and program sponsors for the program have been Environment Canada (Atlantic Region), Atlantic Canada Opportunities Agency, Natural Resources Canada, Nova Scotia Department of Environment, Nova Scotia Economic Development, Nova Scotia Department of Energy and Nova Scotia Power Inc. The program is delivered by Dalhousie University's Eco-Efficiency Centre - a university - based extension service established to enhance the efficiency of individual businesses while encouraging the cooperative and collective efforts of groups of companies.

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