

## **Reinforced Plastic Systems Inc.**

2008 Case Study

Mahone Bay, Nova Scotia, Canada

The Reinforced Plastics Plant in Mahone Bay, one of six RPS plants in North America, was founded in 1956. It is the major business in the community employing 115 at the plant. It produces custom fiberglass reinforced plastic piping systems used in the power, energy, mining, chemical, and pulp & paper industries. The plant operates 24 hours a day, 5 days a week.

The company recognized that there was potential to improve the plant environment while at the same time improving energy efficiency. An Opportunity Assessment was conducted and based on the results, the company also undertook an Implementation Assessment. The assessments were conducted by Stantec Consultants Limited. The two-step incentive program is designed to stimulate implementation of cost efficient opportunities within small and medium sized manufacturers (SMEs) and to demonstrate the benefits of “greening” our industry.



### **The Process**

The company manufactures a wide range of FRP products in sizes from 1 to 120 inches in diameter suitable for many industries with varying temperatures and operating conditions. The production process varies with the size, shape and service requirements of the specific part. Some use customized moulds and hand lay-up while more standard products are produced on various types of winding equipment. The company is enjoying a strong demand for their products due to increasing demand for environmental improvements in the power industry.

### **The Assessments**

Plant management felt there was a significant opportunity to recover waste heat from exhaust air to pre-heat makeup air and at the same time reduce styrene levels in the plant. They undertook the Opportunity Assessment to examine the operation and to identify and quantify the opportunities. The assessment identified six areas/opportunities which the consultant estimated could produce savings of more than \$20k/yr for fuel. The Implementation Assessment studied the major opportunity and provided a conceptual design as well as an economic analysis of the proposed heat recovery system. The company has already completed upgrades to its boiler and has virtually eliminated sending waste wood to landfill. The major heat recovery ventilation system is scheduled for implementation prior to the 2008/09 heating season.

## Assessment Results

The in depth assessment revealed that the potential annual savings for the major opportunity studied would be just over \$20k/yr with implementation costs of \$200k. Although the payback on this project is longer than would normally be attractive, it also enables the company to decrease styrene levels and improve plant air quality at the same time.

In summary, the potential savings for the major opportunity is estimated at:



Potential energy savings:	1,275 GJ/yr	\$20,000/yr
Reduction in GHG Emissions :	92 T/yr	

**Sandy Marshall, P.Eng., Manager of R&D** at RPS said, "The Eco-Efficiency Program for Manufacturers provided us with independent technical expertise which helped us move forward with our in-plant air quality improvement project and achieve significant operating cost reduction. The fact that the program covered 75% of the cost leaving only \$2000 (25%) as the company share was an important factor in moving the project forward."

The Eco-Efficiency Program for Manufacturers is working for Reinforced Plastic Systems Inc. It has identified significant opportunities for improving energy efficiency, 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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