

Leading the List of Energy Innovators in the Ottawa Valley

04 September 2005 Lynn Jones

With this article the Ottawa River Institute begins a series on energy innovators in the Ottawa Valley. As everyone knows, oil and gas are finite resources. The supply of both is expected to begin to decline soon and prices to rise sharply as a result. Burning of fossil fuels also contributes to climate change. Therefore it behooves us all to learn more about conservation and alternatives. Fortunately here in the Ottawa Valley there are many pioneers that are leading the way.

It may surprise some readers to learn that one of the most inspiring energy innovators in the Ottawa Valley is a large institution that is central to the lives of many Valley families. In the past couple of years, the Renfrew County District School Board (RCDSB) has made a series of breath-taking innovations that have saved large amounts of energy and placed it on the leading edge of energy innovation, not just in the Ottawa Valley, but in the province and country as well.

Two years ago, in the fall of 2003, the RCDSB embarked upon a program called "Destination Conservation" in most of its 26 elementary schools. The DC program, which began in Alberta, involves students, teachers, custodians, parents and principals in conserving energy in their schools. Grade five teachers and students receive extensive training and then take a leadership role in their schools, conducting energy audits and behaviour change programs. DC was sponsored initially by the Ottawa River Institute through a grant from the Ontario Trillium Foundation.

The RCDSB's success with the DC program has far surpassed results obtained elsewhere in the province. The trainers have been very impressed by the attendance and enthusiasm of the participants. And the results speak for themselves. James Brose, energy management coordinator for the Board so far estimates that annual utility savings on the order of 175 thousand dollars have been achieved from behaviour changes such as turning off lights and computers when not in use, turning down the heat, keeping radiators clear and making sure that exhaust fans don't run unnecessarily. The Board is set to begin the third and final year of DC in its elementary schools and would like to extend the program to include high schools this year.

Last summer, with funding from Natural Resources Canada, the RCDSB conducted energy efficiency retrofits on five of its elementary schools. Changes included upgrading of insulation, installation of new windows, new lighting and installation of new heating systems including new modular boilers that are much more efficient and adjustable to varying demands for heat throughout the building and the school-year. A particularly innovative addition at three of the schools was a heat wheel ventilation unit, a big wheel covered by a fine synthetic membrane that mixes cold incoming with warm outgoing air. The warm air preheats the cold incoming air to 65 degrees Fahrenheit resulting in considerable energy savings and a great improvement to comfort. This summer retrofits were completed at Mackenzie High School, Fellowes High School, Westmeath Public School and McNab Public school. The majority of this work was performed by the School Boards' in-house trades-people, with assistance from contractors and student apprentices. This approach provides the Board's employees with the opportunity to stay current with new technology.

To keep track of its energy savings (a requirement of its NRCan grant) the RCDSB has developed an energy monitoring and tracking system that is very impressive in its sophistication and simplicity of use. All energy-using devices in every school down to the last light-bulb are tracked and data are accessible to staff and students through a web interface. The system is called Energy Investigator and provides

staff and students with immediate feedback on the impact of their programs to reduce energy consumption. The system was fully operational for the start of the current school year.

Also new for the current school year is a solar heating system at McNab Public School. The system is based on a series of 33 units called Power Spars, an innovative device for capturing solar energy and using it to heat water or generate electricity. These devices are designed and manufactured in Kanata by a company named Menova Energy Inc. The system is expected to provide 66% of total heating for the school, with the balance coming from propane boilers. NRCan staff are very interested in this project and will be using data from McNab school to verify some of their projections about solar heating systems. There is also a high level of interest from other school boards and municipalities.

The RCDSB has an ambitious goal: to reduce energy consumption by one third, for a saving of one million dollars annually! With these innovations they are well on their way to achieving it. Congratulations to RCDSB Director of Education Eleanor Newman, Energy Management Coordinator James Brose, Curriculum Coordinator Sherri Wylie, Board members, staff and students, for outstanding examples of energy innovation. We applaud your leadership!

Lynn Jones is a member of the Ottawa River Institute, a non-profit charitable organization supported by volunteers, local donors and a grant from the Ontario Trillium Foundation.