

# Hydro One Remote Communities

## Bringing Energy Efficiency and

Keeping the lights on and the electricity flowing in communities that live off the grid in Ontario's far North is a unique challenge. Beyond the reach of power lines and off the path of gas pipelines, 18 communities in northern Ontario depend on Hydro One Remote Communities to meet their needs. Remote Communities is an integrated generation and distribution company that serves approximately 4,000 customers.

The size and isolation of the service territory means transportation of staff, fuel, and equipment is a key delivery costs driver. Six communities are accessible by road year-round. Twelve communities are accessible only by aircraft, winter road or barge. The use and viability of winter roads to reach these communities is a major expense variable within Remote Communities' operations. If a winter road cannot be built, fuel prices are drastically higher.

Rick Rhodes, Director of Remote Communities, says: "Diesel generation is the prime source of electricity within these communities; the use of alternative renewable technologies is continually examined as their development evolves, but diesel is currently the most feasible option."

Remote Communities owns and operates two mini-hydro electric generating facilities and has four demonstration project windmills.

There are 55 diesel generators in service, ranging in capacity from 85 kW to 1000 kW. Most stations have three generators, sized to meet community load at different times of the day. Automated operation ensures the generation units are run to maximize efficiency, matching generator size to community load.

"Remote Communities has long understood that, in addition to the environmental and social benefits, energy efficiency and conservation have the potential to reduce short and long term operating costs for both Hydro One and our customers," said Rhodes.

Beginning in 2005, Remote Communities, together with the Department of Indian and Northern Affairs Canada, hired the Pembina Institute to conduct energy baseline studies in a number of its communities. The studies identified energy use patterns, and presented a range of possible energy conservation initiatives. With the Pembina findings and recommendations in hand, Remote

Communities set out to:

- Consult First Nation Band Councils to ensure that energy conservation activities and options were well understood and accepted within the community and that local and cultural sensitivities were respected,
- Educate customers about energy conservation, keeping oral traditions and local requirements in mind,
- Work with First Nation Technical Service Units when projects within communities were being planned,
- Develop community capacity and involvement by training local community members to deliver programs in selected communities,
- Dovetail with other programs being developed by Indian and Northern Affairs Canada, and with those developed provincially, such as the Ontario Power Authority (OPA) or by Natural Resources Canada to overcome the higher costs associated with goods and transportation in the remote north,

*Weagamow Power Cost Monitor Installers (photo courtesy of Hydro One Remote Communities).*



# Conservation to Northern Communities

- Examine and document the cost effectiveness of projects.

Under the team leadership of Bob Shine, Hydro One's Environment Health and Safety Program Management Coordinator, successful 2006 starter programs included holding Energy Conservation Days in the communities of Armstrong, Whitesands, Webequie, Deer Lake and Sandy Lake. Information booths were set up at local stores and evening sessions held in the local community hall where community members could exchange their Christmas lights for new LED versions and get free compact fluorescent lights bulbs and energy saving tips.

In 2007, Remote Communities teams worked with the communities of Kitchenuhmaykoosib Inninuwug (Big Trout Lake), Kasabonika Lake and Wapekeka First Nations. Local staff were hired as well as a Community Coordinator to promote energy conservation and install residential conservation products. Energy conservation ideas and energy efficient products were discussed at town hall meetings. The first visits to these communities focused on installing low-flow showerheads, faucet aerators, compact fluorescent lights and

collecting information about appliances in the homes. Phase two focused on installing outdoor motion detectors and block heater timers.

In the 2007 winter season in Sachio Lake, Bearskin Lake, and Weagamow Lake the teams raised energy conservation awareness through a Christmas light exchange, handing out free cloth shopping bags and promoting cold-water detergent at local stores and community gathering places.

Further work included installing Power Cost Monitors and implementing education sessions at local schools. The Power Cost Monitors display energy use in real time and in dollars per hour, bringing home the value of energy efficiency. In the schools, the Community Coordinators talked to students about where electricity comes from and how it gets to their homes. They reviewed the contents of 'Power Pak' giveaways and how to help their parents install energy-conserving products.

"The children became our energy detectives in the communities," said Shine.

In 2008, Remote Communities began investigating ways to offer an appliance rebate

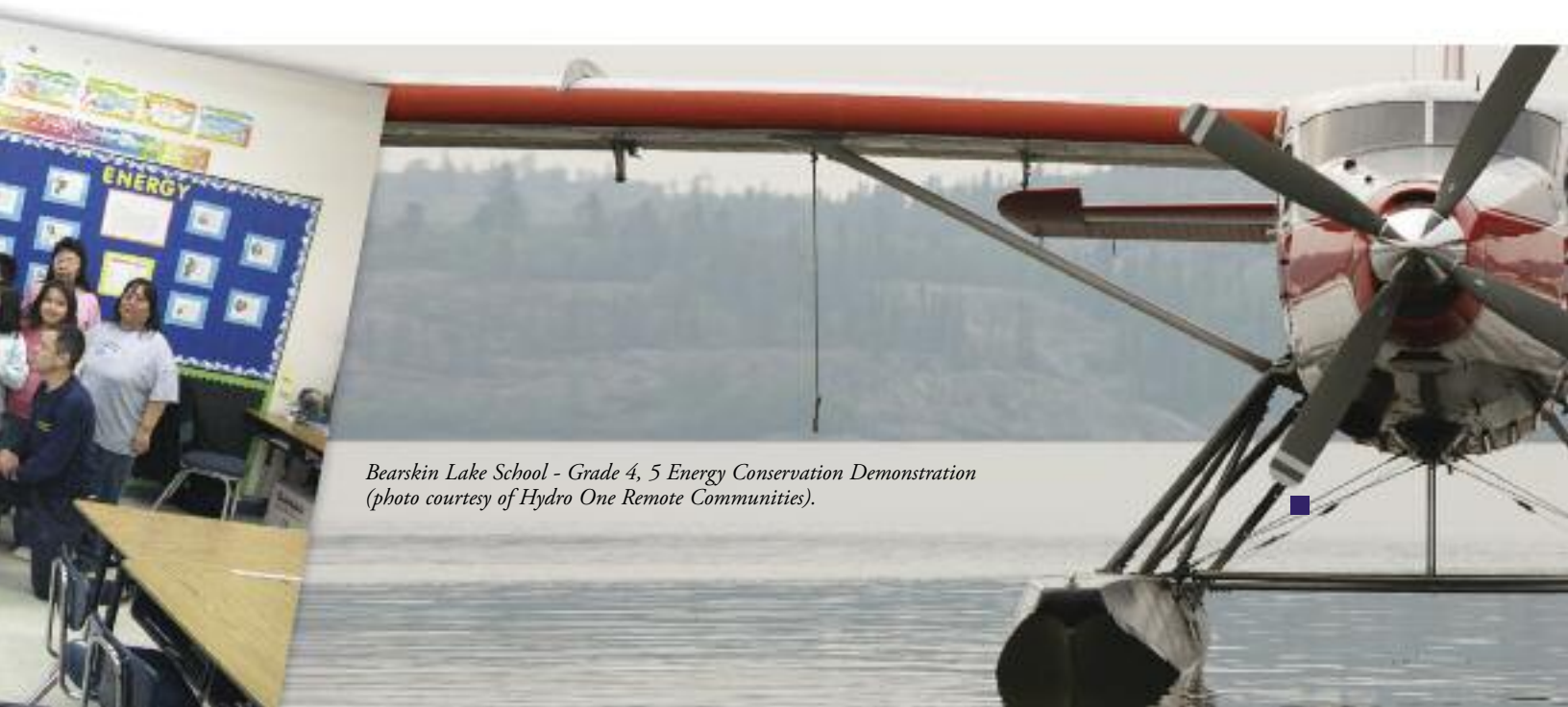
program to its northern-most First Nation customers, encouraging them to opt for newer energy-efficient models. One of the challenges is disposing of the Freon in the older appliances, as facilities for safe disposal do not exist in these communities.

In 2009, Shine says the popular Energy Conservation Awareness Days will continue as will the in-school programs. He adds that people in remote communities have been open and responsive to hearing about practical energy conservation tips.

"They are very aware of the higher cost of living in remote communities, and are receptive to energy conservation programs that result in tangible savings," he said.

Not to be undervalued, Remote Communities' positive contribution to the north through hiring local labour and offsetting some of the costs for adopting improved energy efficiency is a welcome benefit. ■

*Hydro One Remote Communities generates and delivers electricity to 18 communities across northern Ontario that are not connected to the provincial electricity grid.*



*Bearskin Lake School - Grade 4, 5 Energy Conservation Demonstration (photo courtesy of Hydro One Remote Communities).*