

Green is good for business

Halifax Regional Municipality introduces district energy

OVER THE LAST DECADE, the Halifax Regional Municipality (HRM) has been one of Canada's leading municipalities for its sustainable-environmental practices. For example, HRM was the first to reduce its solid waste by 50 percent and, in November, it became one of four municipalities to become an International Sustainable City.

"We're working toward a fundamental change in our approach to environmental management so that sustainability underpins all of our business decisions," says Stephen King, HRM's manager of environmental management services. This change is based on examining municipal operations and services as interactive subsystems, with the goal of increasing the environmental and economic efficiency of the entire municipality.

Recently, HRM's environmental strategy took a big step forward when it received funding from the Nova Scotia Department of Energy and Environment Canada to launch a community-energy system on the peninsula. The \$47-million system will have a co-generation plant (co-generation is 45 percent more efficient than traditional single-cycle power stations) that produces electricity using clean natural gas instead of traditional bunker coal oil. The system, which will provide steam and hot water to Dalhousie University, Saint Mary's University, and four Halifax hospitals, should be running by 2008 and will reduce annual greenhouse gas emissions by more than 125,000 tonnes. "This will be the most efficient district energy system in Canada," says Cathie O'Toole, HRM's manager of environmental performance. "Geographically, it will be one of the largest, and as far as its environmental impact, it will be in the top two or three."

The Halifax Port Authority, and the Department of National Defence and dockyard area, are two other potential community-energy opportunities. If developed, all of them will be connected. "Not only will one central system be more cost efficient and reduce greenhouse gas emissions, but there also is going to be a day in 20 or so years from now where all of our power stations will be tied to alternative energy sources," says O'Toole. "By centralizing our energy generation into district systems, it will be far more cost effective to convert just one centralized plant."

The system will recoup its operating and capital costs by selling the electricity produced to Nova Scotia Power and by charging the universities and hospitals for the sale of steam and hot water. A third revenue stream will come from selling the carbon credits themselves from the system's greenhouse gas emissions reductions (almost half of Canada's greenhouse gas emissions are under the direct or indirect control or influence of municipal governments).

HRM's green infrastructure leadership and initiative is co-ordinated through its Sustainable Environment Management Office, which focuses on environmental issues and projects such as solid waste, harbour cleanup, environmental engineering and pesticide use. To ensure long-term success, HRM has collaborated with the private sector and provincial and federal governments to produce a sustainable environment strategy, which will guide future develop-

ment in HRM. The goal: to make HRM one of the healthiest and most desirable places to live in Canada.

The strategy's energy initiative focuses on three streams: clean energy, energy efficiency, and renewable energy. In addition to the community-energy system, current projects include the use of LED traffic lights, which are 90 percent more efficient than traditional traffic lights; the Highland Energy project at the Sackville landfill, which will capture organic methane gas released from the landfill and convert it into electricity to power up to 800 homes; and HRM's transit system, which is using 1,550,000 litres of bio-diesel fuel in its buses (it already has cut tailpipe emissions by about 20 percent.)

HRM also is encouraging wind-energy development through its Wind Generation Master Plan. "If a wind-turbine developer came here tomorrow and wanted to build a wind turbine, because of legislation, there are few suitable areas where they'd be able to build," says O'Toole. "Our goal is to change our land-use bylaws, which were written before wind turbines were considered viable sources of energy." The first commercial wind turbine in HRM began producing power this past November in Goodwood. The \$1-million 600-kW turbine is expected to generate enough power for 200 homes.

By 2012 HRM plans to have cut its greenhouse gas emissions by 20 percent. Though ambitious, it should be feasible, according to the Federation of Canadian Municipalities, which believes that by implementing current and future sustainable practices, the municipality could achieve cost savings within five to 10 years, improve its energy efficiency by 35 percent to 50 percent while contributing to the region's economic growth and creating new employment opportunities. *///*

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