

The NewsRoom

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BACKGROUND

Drake Landing Solar Community

Solar-heating systems work well in Canada because of the significant amount of solar radiation that the country receives. As a "top-ten" Canadian location in terms of sunny days each year, the area of Okotoks receives almost as much solar energy as Italy and Greece — making it an ideal location for solar-energy collection.

However, due to Canada's geographic location and climatic conditions, the solar radiation is lower during the winter season — when energy demand for space heating is at a peak. Therefore, in order to make solar space-heating projects successful, there must be a storage system.

In such a system, thermal energy is collected through solar panels mounted on roofs and transferred to underground storage. The storage temperature increases over the summer months and then, during the winter season, the thermal energy is retrieved and distributed through a central district heating system to homes or businesses in a community.

Recent advances in solar seasonal-storage developments and cost reductions in solar collectors make such a project both economically and environmentally attractive. Although these projects are just beginning in North America, a number of solar seasonal-storage projects have been successfully demonstrated in Europe.

Benefits to residents of Drake Landing

Approximately 80 percent of residential GHG emissions in Canada come from home heating (space and domestic hot-water heating). By using solar energy, the Drake Landing Solar Community project is estimated to reduce GHG emissions for each house by five tonnes per year. That translates into 260 tonnes per year for the community.

The homeowners are charged a favourable long-term fixed monthly fee. Although the system's costs will not be competitive with today's price for fossil fuels such as natural gas, the demonstration project is competitive with higher-priced conventional heating sources such as electricity. The operating costs will be lower than those of a combustion furnace.

Project Partners

- **Natural Resources Canada** (NRCan) plays a pivotal role in helping shape the important contributions of the natural resources sector to the Canadian economy, society and environment. NRCan's CANMET Energy Technology Centre, one of the main research and development arms of the Government of Canada, initiated and leads this project.
- **Sustainable Development Technology Canada** (SDTC) is an arm's-length foundation that has received \$1.05 billion as part of the Government of Canada's commitment to create a healthy environment and a high quality of life for all Canadians. SDTC operates two funds aimed at the development and demonstration of innovative technological solutions. The \$550-million SD Tech Fund™ supports projects that address climate change, air quality, clean water and clean soil. The

\$500-million NextGen Biofuels Fund™ supports the establishment of first-of-kind, large, demonstration-scale facilities for the production of next-generation renewable fuels.

- **Technology Early Action Measures (TEAM)** is a Government of Canada technology investment program. TEAM supports projects that are designed to demonstrate technologies that mitigate greenhouse gas emissions nationally and internationally, and that sustain economic and social development.
- **Environment Canada's** Meteorological Services, Atlantic Region, represented Canada in the International Energy Agency's Implementing Agreement on Energy Conservation through Energy Storage and is Canada's authority on underground thermal storage technologies.
- **The Federation of Canadian Municipalities** has been endowed with \$550 million by the Government of Canada to establish and manage the Green Municipal Fund. The Fund supports partnerships and leveraging of both public and private sector funding to reach higher standards of air, water and soil quality, and climate protection.
- **The Government of Alberta's** \$33-million **Innovation Program** provides seed funding to accelerate the innovation process. Proposals are developed by Government of Alberta departments, agencies, boards, commissions, Crown corporations and their partners.
- **United Communities** is the Calgary-based real estate developer for this project. It is committed to building theme communities that are well-planned and architecturally controlled. It also operates in Edmonton and British Columbia.
- **Sterling Homes**, the builder for this project, designed each home to optimize both R-2000 and Built Green™ programs. Sterling Homes is a member of the Sterling Group of Companies, a division of Qualico Developments Canada Ltd., one of Canada's largest builder/developer groups.
- **ATCO Gas**, Alberta's largest natural gas distribution company, managed the construction and operates and maintains the system. Following a commissioning period, ATCO Gas will take ownership of the system. ATCO Gas is part of the Alberta-based ATCO Group of Companies.
- **The Town of Okotoks** is a vibrant community of 19,000 that is nestled along the Sheep River Valley only ten kilometres south of Calgary. Okotoks is one of the fastest-growing towns in Alberta and a recognized leader in sustainability initiatives.
- **Climate Change Central** is a unique public-private partnership that promotes the development of innovative responses to global climate change and its impacts. Climate Change Central builds links and relationships in Alberta between businesses, governments and other stakeholders interested in pursuing greenhouse gas reduction initiatives.
- **EnerWorks Inc.**, a leading solar thermal technology provider, supplied the solar technology for the project, including the 800 solar collectors and ancillary equipment which provide the solar heating to Drake Landing's 52 homes. EnerWorks' proven patented technology offers high-quality, reliable, cost-effective renewable energy solutions to the North American market, including EnerWorks' turn-key Solar Water Heating appliances.
- **Hurst Construction**, builder of the energy centre, managed the installation of the solar panels on the garages, as well as the construction of the Borehole Thermal Energy Storage (BTES) field and the collection and distribution system.

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