



Ontario Power Authority™

Ontario Power Authority Provides Funding of \$650,000 for New Technology Projects

Authority's Technology Development Fund supports 10 projects

(May 2008) The Ontario Power Authority is pleased to announce the list of projects that received financial support from its Technology Development Fund during three rounds of funding in 2007. The 10 contracts awarded equal over \$650,000, leveraging an additional \$11.4 million in outside funding.

These latest rounds bring the number of Technology Development Fund-supported projects to 20, for a total of \$1.2 million in OPA contributions.

The Technology Development Fund was established in 2006 to support the development of “pre-commercial” renewable energy, conservation or generation technologies that need testing or demonstration prior to going into the market. Reduced energy-related R & D, since Ontario’s electricity market was restructured, means technology progress is limited at a time when Ontario is embarking on an unprecedented system planning and reinvestment period.

“We have a situation in Ontario where we need technology innovation to help us meet our long range conservation, supply, and transmission objectives, at a time of increased awareness of climate change,” said Bryan Young, Manager of the Technology Development Fund. “All that adds up to a huge opportunity to support entrepreneurs to develop technologies that will help us generate and use electricity more efficiently.”

2007 funded programs include:

Nanowire-based Solar Cells – This project uses nanostructures to improve the performance of plastic solar cells while maintaining attractive cost advantages. If successful, such cells can be fabricated as low-cost, large-area, flexible cells for widespread use.

Residential Micro-Combined Heat and Power (CHP) – The project will focus on developing a micro-CHP system with domestic hot water, automatic back-up power and dispatch capabilities by the 2009/2010 winter season. The development will be validated in two stages – prototype testing and field performance monitoring.

Solar Canopy – The canopy assembly redirects incoming light rays so that they enter the light guide at the most efficient angle. The reduced weight of the interior components also results in a smaller support structure. The reduction in size and weight of the components in the canopy module will not only reduce the material cost, but it will also substantially reduce the embodied energy of the system, which is a key factor in the total life-cycle cost.

The Effects of Electromagnetic Interference (EMI) on Farm Stray Voltage (SV) – The project will research the issues that could affect farm performance that may be attributed to EMI and associated SV. Where applicable, it will note the appropriate measuring protocol for monitoring EMI and related SV levels, and suggest levels that could potentially be considered of “no concern” with respect to impact on farm herd health and productivity.

Infrared Solar Cells made by Solution Coating – The project will investigate scalable technologies to fabricate infrared solar cells; they will target the demonstration of a solar cell that exhibits one-percent power conversion efficiency. This efficiency will bring them into the regime where further final enhancements that can take the efficiency of a solar cell well above the five-percent threshold and make it commercially viable.

Lightsavers – The project will recruit municipal governments and agencies throughout the Greater Toronto Area (GTA), as well as other interested public institutions, private lighting end-users, lighting companies and utilities to test white LED technology and intelligent control systems in four specific outdoor application sectors, especially in municipal infrastructure: roadways, pedestrian pathways, parking areas and garages, and architectural decoration.

Energy-Efficient Mechanical Pulping –The University of British Columbia has developed a five-year, \$2-million, multidisciplinary research program to reduce electricity consumption in mechanical pulping by 20 percent. This will be achieved through scientific discovery and the development of new technology while maintaining or improving product quality and production.

Improving Technologies for Deployment of Energy Conservation and Demand Management Programs – Several industrial energy conservation and demand management programs have been launched recently. Given the potential financial benefits that the new conservation programs present, there is a need for the development and deployment of technologies and services provided by a performance contracting industry.

High-Pressure Prototype of Marnoch Thermal Power Apparatus – This project involves a thermal energy conversion technology, with a novel heat engine that operates over a broad range of environments. This project will design, analyze and optimize the proof-of-concept prototype and mathematical models of the Marnoch heat engine for various applications.

Variable Frequency Drive (VFD) Performance Testing – This project will perform a benchmark study to establish a common test protocol for determining the efficiency of VFDs. The proposed test procedure will form the basis of a new standard, CSA C838: Variable Frequency Drives. The project is part of a coordinated strategy on VFDs.

Application Schedule for 2008:

Expressions of Interest, Proposal Deadline, Approval

Round 2	May 28	June 25	July 30
Round 3	Sept. 24	Oct. 22	Nov. 26

For more information about the Technology Development Fund, the current list of funded projects, and how to apply for funding, please visit www.powerauthority.on.ca/tdfund. The maximum level of funding per project is up to \$250,000.

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The Technology Development Fund, with its managing institutions, the Ontario Centres for Excellence and the Centre for Energy Advancement through Technological Innovation, provides funding for the development and commercialization of innovative energy technologies that will improve the supply and conservation of electricity. They are “pre-commercial technologies that require funding to get into the marketplace.

The Conservation Fund provides funding for sector-specific electricity conservation pilot projects to test new or unique conservation program elements, and to use the results from pilot projects to help develop future conservation programs. The Fund helps fulfill the Ontario Power Authority’s mandate of ensuring an adequate, long-term supply of electricity.