Harnessing the POWER of the Sun

Toronto Hydro-Electric System's Solar Generating System Promotes Clean Energy Technology in Canada's Largest City

As part of Toronto Hydro-Electric System's continuing efforts to promote clean energy technologies and help reduce smog levels in Canada's largest city, the installation of an industrial solar photovoltaic (PV) generation system on the south side of its downtown service centre, is the second green energy generation system launched by the company in recent years. Unveiled eight months ago, the project is a living case study for other businesses, utilities and individuals, who are looking at alternative green energy technologies.

The Electricity Distributors Association (EDA) awarded Toronto Hydro-Electric System Limited its Environmental Excellence Award at the Association's Annual General Meeting this year. The distribution company was recognized for its outstanding efforts in striving to protect and improve the environment. Toronto Hydro's Richard Lu, Chief Conservation Officer and Environmental, Health and Safety Vice President accepted the award.

The solar project also garnered an award from the Canadian Solar Industries Association as Photovoltaic project of the year.

It is estimated that Toronto Hydro's industrial solar power generating system will eliminate 37.8 tonnes of carbon dioxide emissions annually - equivalent to planting or saving ten acres of trees per year. And for the City of Toronto, where air pollution levels have risen

In 1996, during the original construction of Toronto Hydro's 500 Commissioner Street work centre, solar shades were added above all the windows. The purpose was to cut down on the sunlight and heat entering th building. The solar shade system was a perfect fit to installing a solar power generating system.

David O'Brien (left, CEO and President, Toronto Hydro Corporation and Mr. Tsuyoshi Shinokubo, Executive Managing Director Sales & Marketing of Sanyo International, make the final connection to Toronto Hydro Corporation's second green generation pilot project.

All Photos courtesy of Toronto Hydro

significantly in recent years, the project is setting an example of how 'greener' alternatives can make a difference.

The system can generate up to 36,000 kilowatts of renewable electricity, or enough to power approximately five residential homes.

With a lifespan of anywhere from 25 to 40 years, the system will feed directly into the service centre's headquarters and provide approximately 12 percent of the power needed for the building's lights. The 12-acre building is home to 800 employees and also houses the company's "green" fleet of 650 alternative fuel vehicles.

Each of the 189 solar panels, or 'modules,' can generate 190 watts of electricity. The panels contain no moving parts, require no maintenance to operate, and do not emit radiation, sound or waste.

The HIT 190 solar panel from Sanyo. 189 panels were installed, covering a total of 222 square metres with a combined weight of 2,646 kg. A single panel, operating at 16.1% efficiency, can deliver a maximum output of 190 Watts of clean, green energy.

"The cost of renewable energy is not competitive with traditional sources of energy from a monetary point of view, but it won't be long before we see more of these," said Toronto Hydro's President and CEO, David O'Brien. "And the more of these you make, the more competitive it becomes. The point of the matter is that eventually fossil fuels will no longer be able to sustain the electricity demands of this province or this country or this world. This is the future, so we have to be prepared to spend a little more to advance the future of this technology and that's what this is all about."

The pilot project is the result of a partnership between Sanyo Canada, which provided the system's solar panels; Toronto Hydro Energy Services, which provided the design engineering and general contractor services; Phantom Electron Corporation as the installing contractor; and Xantrex, a Canadian company that provided the inverters needed to transform the sun's rays into consumable power.

"We do hope to see some copycats," said Joyce McLean, Director of Environmental Affairs at Toronto Hydro Energy Services. "Our customer research has shown that our consumers really want to see this happen. They want to see companies embrace solar and wind energy, particularly in a city like ours where we have significant air quality issues. If we're able to demonstrate these work, it's the way to go."

Toronto Hydro is the first Ontario utility to showcase this technology for the public in a permanent way. At a cost to the company of approximately $300,000, the solar pilot project is Toronto Hydro's second major green initiative. In 2003, it installed North America's largest urban wind turbine at the city's Exhibition Place along the shore of Lake Ontario.