# Solar powered model may be future conservation method

An engineering consultant who wants to make his home a solar-powered model for northern climates says Ontario Hydro's rate structure discourages energy conservation.

Timo Tikka made his pitch for a home that would produce electricity in the daytime from solar panels and "turn the electrical meter backwards," feeding electricity into Hydro's grid. At night or in colder winter months, the model home would draw electricity back from Hydro. Tikka calculates that his net electricity bill would be $71.67 a year—nearly $800 less than without any solar generating capacity.

"What really surprised me when I did the calculations," Tikka said, "is Ontario Hydro's rural structure."

Tikka told a workshop on renewable energy projects at *Energy Expo '92* that Hydro's rural residential rate as of January 1, 1993, on the first 750 kilowatts per hour (kwh) of electricity used in a three-month period will be 22.39 cents per kwh.

"But the remainder (electricity used over 750 kwh per three months) is only 8.11 cents per kwh. In other words, if I try to save money a little bit, I'm not getting anything for it. The rate structure that Ontario Hydro has does not promote energy saving, does not promote trying to be energy conscious.

"If you go and buy yourself one of those compact fluorescent bulbs you might save yourself a little bit on power. However, your rate of return is only 8.11 cents per kwh. So that's a pitch for changing the rate structure to promote energy savings."

Tikka wants to modify a house he's already building by adding photovoltaic units to the roof. He told the workshop his family is willing to become guinea pigs for the latest technologies.

"If someone has a new inverter ( a device that converts direct current from solar units to alternating current used in homes and business) they'd like to test, we would be willing to be the guinea pigs and put it to the test in an uncontrolled environment," he said.

"Let my three year old, my five year old, my wife, and me, who are not photovoltaic experts, put the thing through the mill."

Tikka's vision is to build subdivisions of new homes, each with photovoltaic units, capable of feeding electricity to Ontario Hydro' s grid during the day, when offices and factories need the power. "At night, when everyone goes home, they would take power back from the grid. Everything would still be connected on line (Hydro's) generating stations but Hydro wouldn't have to develop more generating stations with photovoltaics on line."

Tikka told the workshop he's willing to put up $10,000 of the approximately $35,000 required to install the solar equipment.

"There are only a few grid-connected solar systems in all of Canada, and even fewer on a residential scale, " he said.

"This demonstration home would add significantly to the pool of information on grid-connected systems. It would be the first of its kind in Canada."

Other grid-connected solar systems are on institutions such as hospitals and buildings in parks.

Tikka's system differs from "stand-alone" solar homes, which require extensive investments in storage batteries and back-up generators. By connecting to Ontario Hydro's grid, the solar home would only have to be without power when Ontario Hydro's systems shut down. "That's a safety feature," Tikka points out, "so people working on Hydro lines wouldn't be injured by electricity fed into the grid from my house."

*The arrival of winter means the start of winter activities, such as sledding.*

## Thank You

A simple thank you seem so inadequate to our family and friends for sharing our retirement party. To those who were unable to attend but sent congratulations and contributed towards the gift, we missed you. To those who organized this emotional night it was truly appreciated. To granddaughter Paige in her OPP uniform, this overwhelmed me and I shall treasure this moment. Lastly to Tim, Corinne & dearest Hailey for enriching this evening, Karen for your thoughtfulness, Teddy for his humorous and loving words. We knew we were blessed with wonderful and caring children. Tonight you showed us why we are so proud & fortunate parents.
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Bill & Janet


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