

## Rooftop solar panels could present a new fire hazard

A provincial Green Energy program that's won widespread public and municipal favour has actually created a new firefighting hazard, according to firefighters in Dufferin and internationally.

The provincial FIT (Feed-in Tariff) program, now under review, has favoured rooftop solar panels over both wind turbines and ground-mounted panels, but firefighters in Dufferin and across North America have found that the rooftop panels are, as one newspaper describes them, "new enemies of firefighters."

The provincial preference is indicated by the per kwh price paid by the province for each. As of July, those were 11.5 for wind, 54.9 for small rooftop projects, and 44.5 for small ground-mounted. Larger solar projects were less money per kwh: 48.7 for rooftop; and 34.7 for ground-mounted.

The problem has long been recognized by Underwriters Labs and by the U.S. National Fire Protection Association, but it gained new prominence when a fire in a meat-packing plant that had 7,000 solar panels on the roof of a 266,000-square-foot warehouse in Delanco, New Jersey, took a reported 11 departments and 29 hours to extinguish and, even then, it kept smouldering.

There, reported Reuters News Agency, "Putrid air hung over a luncheon meats warehouse long after a blaze consumed the building where frustrated firefighters met their enemy: rooftop solar panels.

"Loved by the green movement, solar panels pose a growing threat to firefighters, who may suffer electrical shocks from panels that typically cannot be turned off," said John Drengenberg, consumer safety director for Underwriters Laboratories.

"Do I think we'd have had a different outcome if we could get on the roof? Sure," Delanco Deputy Fire Chief Robert Hubler is quoted by Reuters as having said.

Melancthon-Mulmur (Honeywood) Fire Chief Jim Clayton said, "There are all sorts of problems."

He emphasized that firefighters have no problem with solar arrays in the fields. But the rooftop ones present an electrical hazard and also prevent normal firefighting roof operations.

In Orangeville, Deputy Chief Ron Morden said the roof panels are forcing firefighters to change their approach. "When we roll up we don't know the panels are there.

"In a typical fire, we have crews shut off the (Hydro) circuits at the pole." He said there is no way to shut off the panels.

"Even at night, lights can generate the panels." He added that the department's floodlights are a major source of light.

Panels on the roof interfere with normal rooftop operations, from squirting water to cutting the roof open to ventilate gasses from within the burning building.

As well, the added weight of the panels could cause a collapse. The deputy chief said there is a possible environmental and personnel hazard if the panels collapse into the fire. "If the panels are burning it's another hazard." He said the panels aren't something you'd want to burn anywhere. There could be toxic fumes.

Deputy Morden provided an excerpt from an Underwriters Lab report that's used in Orangeville's training. "I have enclosed a link to the full article if you wish to see all of the test results. Take the time to at least read the summary it may save you're your life," reads the introduction for the firefighters.

The report is based on the findings of studies over an unspecified number of years. "Fortunately, the limited number of fire events

that have occurred and have not resulted in fire fighter fatalities. However, a limited body of knowledge and insufficient data exists for the fire service community to fully understand the risks to the extent that standard operational procedures have been developed and widely used amongst individual fire departments, the report says in part.

If the additional risks are known, how is home insurance affected? In Shelburne, insurance broker Ed Crewson said, so far, it has meant increasing the insurable value of the house to reflect the addition. He said he's had no incidents of a fire involving panels.

On the risk of collapse, the county's chief building official, Mike Giles, said they tell people to get a structural engineering report prior to contracting for the panels, and to report back to his department.

Most solar panel companies realize that. He said there has been good co-operation thus far.

The building code does not address the issues, but Mr. Giles said there are ongoing discussions about including regulations.

In Orangeville Vern Douglas, the director of the town's building department, said there's a Town requirement for a building permit.

To obtain the permit, one requires a structural engineering report and also verification that the installation could access the grid.

Residential and commercial buildings were not (generally) built to sustain the added weight of the panels. He said buildings would require structural changes if not able to bear the weight.

A problem might be that the engineering reports are done in the absence of a fire.

**By Wes Keller**