

LOF Enters Solar Energy Field In Experiment On TU Campus With Home Sun-Heating System

Libbey-Owens-Ford Co. today became a major competitor in the growing field of solar energy, introducing a solar collector to trap the sun's rays for use in a heating system.

The SunPanel collector was developed during three years of research at the Toledo Technical Center.

Although the collector is capable of capturing sufficient energy to heat an entire house or commercial or industrial building, its initial use is seen mainly as a supplemental heat source, according to Jerry Smith, project manager of LOF's solar energy program, who announced the firm's first commercial entry into the field.

Chemical Solution Heated

Mr. Smith said the company expects that the major initial use of the collector will be to provide hot water for homes or commercial-industrial buildings. He said he questions whether it would be economically feasible at this point to heat an entire building with the collector.

The company expects most of the collectors to be used in newly built structures because it would be more expensive to add them to an existing structure.

The LOF product is a flat-plate collector

into which solar rays enter through two panes of tempered glass and are absorbed by a special copper plate. The trapped solar energy heats a water-like chemical solution which is then conducted rapidly through copper tubing to a heat storage and distribution system.

The Toledo-based firm at present is providing only the solar collector, though it is working on a total solar heating system, to include the storage and distribution functions and equipment. Mr. Smith said that until it has a total system of its own, LOF will recommend compatible products and designs for use with its collector.

Announcement of the collector was made at the University of Toledo, where LOF is participating in an experimental project with TU and Toledo Edison Co.

Student Residence Benefits

The project involves heating of the Conrad House, a residence for 40 students on the west side of the campus. Forty-four of the LOF collectors are being used to provide 80 per cent of the building's heat and all of its hot water.

Mr. Smith said the cost of purchasing the SunPanel collector is about \$12 to \$15 a square foot. Providing the hot water used by an average family of four would

require 63 square feet of collectors, or 3 of the 21-square-foot units. At current prices they would cost \$756 to \$945, exclusive of the cost of installation and of the related heat retention and distribution equipment.

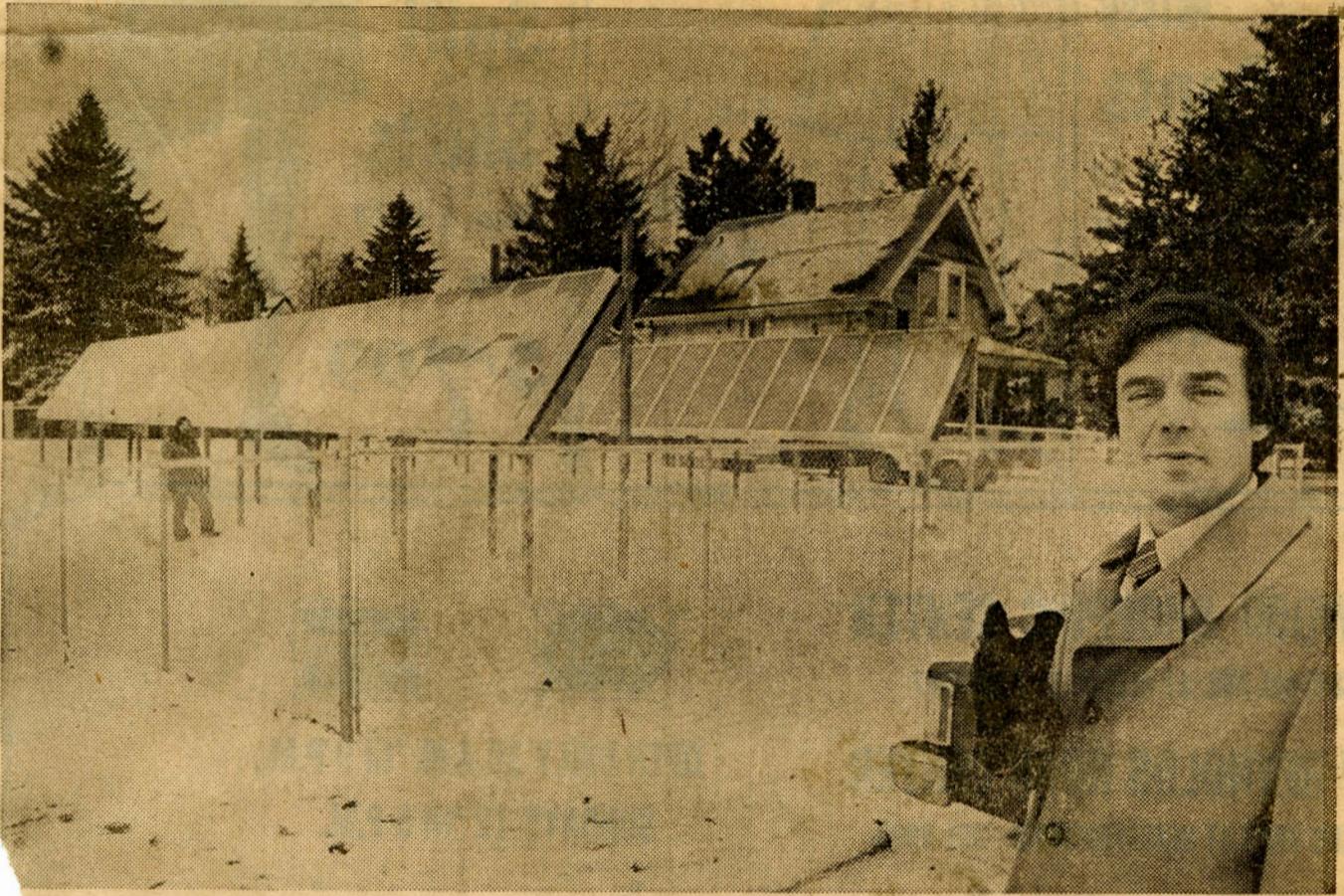
Once the system is installed, operational costs are minimal, he said, noting that determining whether a solar system would be feasible relates directly to the cost of energy. Determining feasibility for a family or business depends on initial cost and the financing terms.

The points at which solar energy becomes economical are 4.1 cents a kilowatt-hour on electricity, and \$5 per 1,000 cubic feet of natural gas, Mr. Smith said.

"The break-even point for the average Toledo area resident is about three or four years down the road," Mr. Smith said, explaining that the cost of residential electricity in this area still is less than 4 cents per kilowatt hour, and the cost of natural gas is about \$3.50 per 1,000 cubic feet.

In both cases, however, the costs have nearly doubled in the past few years and still are rising. "We're moving rapidly toward the break-even point," he commented.

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—Blade Photo

TU STUDENT RESIDENCE IS SITE OF EXPERIMENTAL SOLAR ENERGY PROJECT
Mr. Smith with banks of SunPanels, encircled by chain-link fence, with Conrad House in background

LOF Enters Solar Energy Field

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Another factor to be considered in determining feasibility of a solar system is the availability of gas and electricity, he said.

Utility Cost High In East

Mr. Smith said that utility costs in other areas — notably the east coast — have topped the break-even points. He said that such areas, therefore, are prime initial markets for LOF's new product.

East coast costs of electricity already are above 8 cents a kilowatt hour, a point at which the average family of four would save \$250 a year by heating its water with solar energy rather than electricity. That savings, determined by computer studies,

is based on 20-year financing of the solar system at 8½ per cent interest.

As a service to potential customers, LOF will determine how big a solar system would be needed either to provide hot water or heat for a home or commercial-industrial building. There would be a charge for the service, which would be undertaken by computer, Mr. Smith said, but the charge would be deducted from the cost of the collector if purchased.

Assembly In North Carolina

Mr. Smith said LOF is in the process of establishing SunPanel, a national distribution network to be based at the firm's Toledo headquarters.

The distribution organization will assist

THE BLADE: TOLEDO, OHIO, T architects and builders in design and installation of solar systems, he added.

The collectors will be assembled at LOF's Thermopane plant in Clinton, N.C. Glass used in the collectors is made at the plant in Laurinburg, N.C. Connectors, couplings, and other parts made by LOF's Aeroquip subsidiary in Jackson, Mich., will be incorporated into the collector's copper-tubing system.

O-I Collector Differs From LOF's In 2 Ways

Another major Toledo company, Owens-Illinois, Inc., introduced a glass solar energy collector in 1975.

The O-I Sunpak collector differs from the LOF collector in that O-I uses glass tubes rather than flat-glass plates and it operates on a vacuum principle.