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EL DORADO PLACER SACRAMENTO YOLO

Improved evaporative coolers promise big energy savings

Local utilities and HVAC companies are experimenting with new systems

MELANIE TURNER | STAFF WRITER

A new generation of high-tech swamp coolers could revolutionize air conditioning in California, experts say. Among the benefits: they use less energy and eliminate refrigerants.

One such product, Climate Wizard, is making its U.S. debut in the Sacramento region. Rocklin contractor L&H Airco is the exclusive representative in California for the product, which is manufactured by Seeley International of Australia.

"This is going to change the future of cooling, period," L&H Airco president Frank Wegener said.

Utilities statewide have their eyes on modern evaporative coolers — which work best in dry climates — as alternatives to power-hungry conventional air conditioners.

"In the West we have a great opportunity to do more climate-appropriate cooling strategies that are highly efficient," said Jonathan Woolley, associate engineer for the Western Cooling Efficiency Center at the University of California Davis.

"Under many scenarios these systems will use 75 to 80 percent less electricity," Woolley said. "It's very impressive."

This summer, the center, which helps bring to market laboratory-proven ideas related to climate control, is evaluating several different types of evaporative air conditioners, including the Climate Wizard.

Wegener of L&H Airco cites a number of benefits, including elimination of expensive and ozone-depleting refrigerants.

Seeley claims the Climate Wizard's cooling performance can rival that of conventional refrigerated air conditioning systems while using as much as 80 percent less energy. And, unlike conventional systems, no matter how hot it gets outside, it uses the same amount of power to deliver cool air.

Seeley has been installing similar coolers in data centers and hospitals for about the past five years in Australia, Wegener said.

L&H is selling 4- and 6-ton units for about



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L&H Airco's Frank Wegener says Climate Wizard is "going to change the future of cooling, period."

\$10,000 and \$13,000. Conventional units cost about \$5,000 and \$7,000, respectively. The return on investment depends on usage but should be less than a year, Wegener said.

Locally, Sacramento Municipal Utility District is planning a test of Climate Wizard in the next few weeks, likely with precision portable machine tool manufacturer Tri Tool Inc. at its plant on Sunrise Boulevard in Rancho Cordova.

And the first U.S. installation of Seeley's Climate Wizard is planned, also in the coming weeks, at a Rocklin restaurant frequented by L&H Airco employees, in collaboration with Pacific Gas and Electric Co.

While UC Davis, SMUD and PG&E are all set to take a closer look at the Climate Wizard's performance this summer, preliminary evaluations have been positive.

"The Climate Wizard seems to be able to provide a lower temperature air," compared to similar products, Woolley said.

When SMUD project manager Bruce Baccei first heard of Climate Wizard a year ago, he said "it almost sounded like it was too good to be true." Now he believes it "highly probable that (Climate Wizard) will work as they have been claiming."

Baccei estimates there are 11 companies with different evaporative technologies either in testing or on the market. There are systems designed to be added to existing rooftop units, such as Flash Cool made by Sacramento's Beutler Corp., DualCool by Integrated Comfort Inc. of Vacaville, and Evaporcool of Memphis, Tenn., a product being tested at the UC Davis Medical Center, Baccei said. The state of California has installed four large evaporative systems by Munters, a German company, in a Sacramento printing office that SMUD plans to observe.

Despite its promise, the new evaporative coolers account for only about 1 percent of the market, Woolley said, adding that the biggest barrier is unfamiliarity with the systems.

Traditional evaporative coolers blow dry air across some wet media. Though efficient, these coolers produce humid air.

While the Climate Wizard uses the same physical process as a swamp cooler, the indirect evaporative system does not add water to the air as it cools. The evaporative process happens inside a heat exchanger so air that's delivered is cool but dry.