

Local homes, businesses turning to solar power

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When the new 18,000-square-foot Shot Spot indoor gun range opens next spring on Cottage Hill Road, Carrollton, it will feature a technological breakthrough that has nothing to do with the shooting activities inside.

High atop the structure will be a 96-panel photovoltaic solar array, which will generate enough electrical power to operate the building's heating and air conditioning system. And often the unit will generate enough power to run other electrical equipment or sell some power back to the electric grid.

"We see it as a really good investment," said Jane Sauls, Shot Spot's director of operations. "As technology has continued to improve and prices have come down, it's made solar power affordable for business owners and consumers. It's bringing it to where it's a no-brainer."

The system Shot Spot will be using is the Lennox SunSource, which ties the solar panels into the heating and air unit, without the need for expensive storage batteries and large inverters that are found on the traditional standalone solar systems. Customers have the option of choosing the number of panels they want, with more panels providing more of the power needs. Each panel has its own inverter, an electrical device that converts the direct current (DC) electricity generated by the solar panels to alternating current (AC), which is required by all household appliances.

Erica and Travis Studdard of Carrollton are installing a 16-panel system in their house. "One of the things we like about it is that it makes solar energy affordable for the masses," said Erica Studdard. "In the past, it was so expensive that we could have never afforded it. With federal and powers all the heating and cooling equipment in the company's office building. state tax credits and the way it's tied to the heating and cooling system, it was an easy choice. It's also a way that we can be doing something green."

Maxwell Heating and Cooling of Carrollton, a Lennox dealer, has been installing the systems locally for the past two years. CEO Shannon Maxwell said the SunSource system was first developed by Lennox about six years ago. Initially, he said, only enough electricity was generated to run the outdoor fan motors.

"However, they began to work with solar panel manufacturers and developed an energy system that could be connected to the grid," he said. He said interest in the system has been fueled by 30 percent federal tax credits on the purchase. There are also state tax credits and incentives through some electric utility companies.

"You can order your package through Lennox," Maxwell said. "It's all pre-engineered by them, so there's no outside engineering costs. It's simply plug-and-play. We embraced the program and installed the system here at our offices."

Greg Powers, comfort adviser and system installer for Maxwell, said the solar panel array is usually mounted on the roof of a home or business, at a 33 degree, southwest angle to catch most of the sun's rays.

"Each panel produces about 270 watts and has its own inverter," Powers said. "You can see how efficiently each panel is operating with a computer program that comes with the system. The home systems are sold in four-panel increments, with options of four, eight, 12 or 16 panels. The panels are USA-made by Solar World in Seattle, Washington."

The incremental options allow a homeowner the flexibility to start small and then add additional modules for greater energy savings. He said for the time being, the solar units are designed only to work with the upper end of the Lennox heating and air conditioning line. The heating and air conditioning units can be purchased alone with the option of later installing the solar panels. The panels add about \$5,000 to \$15,000 to the cost of the system, but the cost can be recouped over a few years through electric energy savings.

He said the modules are weather and impact resistant and are easily maintained and serviced. Powers cited some solar power energy facts from National Geographic.

“Every hour, the sun beams more than enough energy to satisfy the global energy needs for an entire year,” he said. “It’s the most abundant energy source on earth. However, today solar energy produces less than one-tenth of one percent of the global energy demand.” To emphasize the long life of solar cells, Powers noted that the solar cells aboard the Vanguard I, the first U.S. satellite to use solar power, are still working after more than 50 years, despite the satellite logging over 6 billion miles in orbit.

He pointed out that solar energy is both pollution- and noise-free. The downside is that solar cells don’t generate electricity at night or in extremely cloudy weather. With systems such as SunSource, the savings are realized during the day, while the panels are generating electricity. Maxwell prefers the solar system over geothermal systems that use the heating and cooling effect of the earth through pipes buried in the ground.

“Geothermal is limited to only the heating and cooling system,” he said. “With solar, the extra electric power can be used to power other electrical appliances in the home.”

Maxwell sees solar power as the “wave of the future.”

“It’s not only good economic sense, it’s good to see the panels and realize how much energy you’re saving,” he said. “It’s the right thing to do. It’s for the greater good of everybody.”