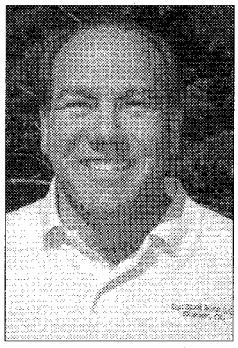
from the

—SUNSPOT SOLAR—

# Some thoughts on lowering your heating bill

by Steve Cross



As natural gas or, more dramatically, propane costs rise as they did last winter, thoughts turn to "How can I stretch my utility dollar?" I will discuss two options: solar thermal and boiler or furnace replacement. Solar thermal can be used in many applications from heating your domestic hot water, space heating for your home or business or industrial applications.

Hot water solar was last popular in the late 1970s when government credits pretty much paid for the systems. When the tax credits stopped, the industry vanished, and some systems quickly fell into disrepair. I assure you the technology and reliability have come a long way since then. The best thing about hot water solar is that, unlike photovoltaics, they make economic sense without a utility rebate.

A basic system consists of several 4-feet by-8-feet flat, non-reflective, heat-absorbing panels on your roof connected through piping to a storage tank in the house. When the glycol in the panels reaches a preselected temperature, a pump turns on automatically to circulate the glycol solution through the heat exchanger in the storage tank, which warms the surrounding water.

I usually suggest that people start with domestic hot water heating since that is a year-round cost and, therefore, has the quickest payback. If you have a gas hot water heater, your gas bill in any summer month would be the approximate amount you spend to heat water each month. Once we have the domestic hot water up to temp, we can use the excess capacity of the solar collectors to do free space heating. In a heating application, solar works best with hot water radiant heat but can be effective with some baseboards and even forced air furnaces. For most space heating applications, solar can interface with the existing boiler or furnace without any major changes.

A basic two-panel hot-water solar system with an 80-gallon storage tank will produce enough hot water for an average family of three and cost about $6,000. The federal government offers a tax credit until the end of this year of 30% off the cost of the system up to $2,000 (some conditions do apply).

Another option to consider that may be the best investment for reducing your gas or propane bills is to replace your boiler or furnace if it is more than 5 to 7 years old and is not condensing or modulating. Most single-speed boilers leave the factory at 70% to 80% efficiency and go downhill from there. I have personally tested many boilers in the foothills that were running in the low 40% range on efficiency. If 50 cents of every utility dollar is going up the flue, it's easy to see a real savings with a change to a high efficiency boiler.

Keep in mind that making your home or business an airtight, well insulated structure is the best way to conserve.

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