

Your *Solar* Home

Produced by The Rahun Institute

Reviewed by Ian Williams

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How do you teach concepts such as solar radiation, southern orientation, and solar heating to those who aren't aware of the free energy benefits of the sun? While there have been many books written on these subjects, they only reach a limited audience. Videos and DVDs, on the other hand, have the potential to reach a far wider audience.

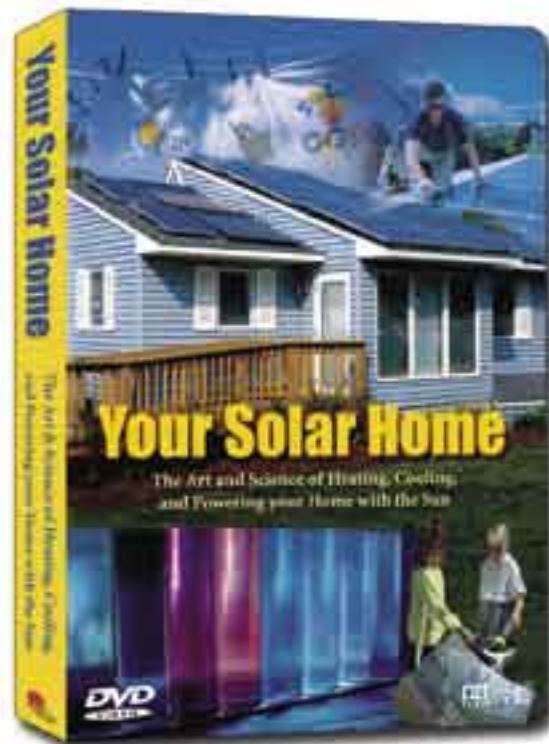
In the five years I've spent in the renewable energy industry, first as an intern with the California Energy Commission and later working for a solar-electric dealer, I have seen my fair share of the good, the bad, and the ugly in educational media. The DVD, *Your Solar Home*, falls decisively into the "good" category.

According to producer Tor Allen of the Rahun Institute, a nonprofit dedicated to promoting the use of renewable energy, the video is an outgrowth of working with schools and is intended for academic use. This short and sweet, 24-minute DVD introduces basic solar energy concepts, and follows a simple format that's easy to follow. While this is the Rahun Institute's first video production, it shares the same easy-to-understand and uncluttered aesthetic of their other educational materials.

Three characters, "Sunny," "Ray," and "Crystal," take the viewer through simple lessons on the historical use of the sun's energy, mechanisms of heat transfer, solar architecture and design, and solar-electric systems. The first segment provides the historical perspective on the applications of solar energy, spanning passive solar architecture in ancient Greece and Rome to the use of greenhouses in 18th century Netherlands. The next segment covers basic energy concepts: heat transfer by conduction, radiation, and convection, and explains the seasonal variations caused by the Earth's tilt.

Where this video really shines is in its excellent presentation of how a solar-heated home works. Using easy-to-follow computer animations, it demonstrates how the thermal mass of a Trombe wall combined with appropriately sized roof overhangs and a series of controllable vents can keep a house at a comfortable temperature.

After this discussion of passive solar design, the program introduces viewers to solar thermal collectors. This segment also touches on the concept of tankless, on-demand water heaters, making the striking analogy that keeping a large



amount of water hot in a conventional water heater is akin to keeping your car idling continuously, just in case you need to drive somewhere.

Following a brief segment on solar cooking, the program moves on to discussing generating electricity with photovoltaics. Sunny introduces the concept of making electricity with sunlight, and a computer animation helps illustrate how a photon in sunlight hits the silicon in a photovoltaic cell, knocking loose an electron and creating voltage. Another simple animation illustrates the concept of net metering.

The DVD ends with a humorous nod to the oldest and most widely used solar energy system—the tensile textile dehydration device, more commonly known as the clothesline. Also included with the DVD is an eight-page booklet that illustrates several key concepts. This serves as a helpful tool for reviewing the concepts covered and as an easy reference guide. *Your Solar Home* will be most useful for those who need a fun introduction to or a refresher course on the fundamental concepts of solar energy.

Access

Your Solar Home: The Art & Science of Heating, Cooling & Powering Your Home with the Sun, written and directed by Clay Atchison, produced by The Rahun Institute, US\$25 from The Rahun Institute, 1535 Center Ave., Martinez, CA 94553 • 925-370-7262 • Fax: 925-889-2322 • info@rahus.org • www.rahus.org

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