

# CONVERTING YOUR HOME TO SOLAR

CRAIG O'HARE

**T**ired of dirty, climate-disrupting coal-fired electricity coming into your home every day? Go solar! Solar is a lot less expensive and a lot more cost-effective than most people realize.

Today there is a “perfect storm” of solar systems costing as much as 50 percent less than they did just five years ago, combined with the continued presence of substantial financial incentives. A 30-percent federal and 10-percent state income-tax credit (both good through 2016), sales tax exemption, and a PNM solar production incentive are all in effect.

Just a few years ago, rooftop solar panels were primarily the domain of the relatively affluent homeowner. But with rising electric rates, high propane bills, and steady declines in the cost of solar systems, solar has moved beyond those “early adopters” and become quite financially viable for the middle class.



According to The Appraisal Journal, the scholarly journal of real estate valuation, a solar system can substantially increase the resale value of your home. This year Santa Fe Community College has been hosting green appraising workshops around the state to educate appraisers, lenders and realtors on the true value solar and other green building attributes (e.g. energy efficiency) add to a home.

There are two types of solar energy systems: 1) a solar photovoltaic (“PV”) system that converts the sun’s light (not heat) into electricity, 2) a solar thermal system that utilizes the sun’s heat for water heating or space heating. This article focuses on solar electric PV, but realize that solar thermal systems are also extremely cost-effective, particularly if you’re using electricity or propane to heat your water or living space.

## WHAT SIZE SOLAR SYSTEM SHOULD YOU HAVE?

There’s no right (or wrong) answer. Choosing the size of a solar PV system depends on the percent of your electricity use you want to generate from solar and/or your ability or desire to pay for the system outright or finance it via a loan. For a single-story home, the area of your roof is likely large enough to satisfy 100 percent of your electricity usage.

## IS YOUR HOUSE GOOD FOR SOLAR?

Absolutely! Our solar resource is “world class” throughout Santa Fe County. Solar systems work best on south-facing roofs, though east or west-oriented roofs may be suitable as well. There should be little or no shading from trees, buildings, or chimneys on or close to your home. PV systems are ideal on our area’s many flat roofs. Also, systems can be ground-mounted away from the house.

## FINANCING YOUR SOLAR SYSTEM

If you can afford to simply pay for your solar system, that is likely your best financial option. If you need to finance your system, there are a number of loan options available with good interest rates and long terms. The longer the loan term, the lower your monthly payments. If your household income is less than \$104,000 per year, look no further than Homewise, (505.983.9473, [www.Homewise.org](http://www.Homewise.org)). Homewise offers 4 percent loans for up to 30 years for solar- and energy-efficiency improvements. With those



terms, the monthly reduction to your PNM electric bill will be about the same amount as your loan payment.

If you don’t qualify for a Home-wise loan, consider an FHA-backed “PowerSaver Loan” with terms as long as 20 years (<http://www.egia.org/swmc/>). If you’re refinancing your existing mortgage or buying an existing home (not a new home), consider a HUD/FHA “203K” mortgage that allows you to make a variety of home improvements (re-roofing, kitchen and bath remodels, adding insulation, new energy efficient windows, solar systems) and roll the costs into the 30-year mortgage. Only certain lenders do 203K loans, so be sure to shop around for one that does.

Also, be aware that some solar energy companies are currently offering a separate one-year interest-free loan for the amount of the 40 percent income tax credits. You just pay it off once you receive your refunds.

## TWO FINANCING EXAMPLES

A 3-kilowatt PV system will cost about \$15,000 and generate about 450 kilowatt-hours per month, enough to meet 100 percent of the electricity needs for many Santa Fe homes.

\$6,000 anticipated tax credit amount covered by a 1-year, interest-free loan offer (no monthly payments), \$9,000 financed at 6.5 percent for 20 years via a PowerSaver loan. Monthly loan payment: \$67. Estimated initial monthly PNM utility bill reduction (including PNM’s 4 ¢/kwh “REC” incentive): \$63. Your additional net monthly outlay is just \$4! Furthermore, PowerSaver loans act as 2<sup>nd</sup> mortgages, making the interest payments tax-deductible.

Finance the entire \$15,000 amount using a 30-year, 4 percent Homewise loan. Monthly loan payment: \$72. Net addi-



Take a solar shower using thermal panels!

tional monthly outlay: just \$9! However, in this example, you’ll receive a \$6,000 refund when you do your taxes. At no cost, Homewise will allow you to pay down your loan with the \$6,000, reducing the payments to \$43, for a net monthly cash-positive benefit of \$20!

Keep in mind that since your monthly loan payments are fixed, your net monthly financial benefit increases as electricity costs increase over time. PNM’s electric rates have increased about 40 percent in the past 5 years. PV systems can be expected to generate electricity for 25 years or more.

## HOW DOES SOLAR HELP THE ENVIRONMENT AND OUR LOCAL ECONOMY?

Most of the electricity we use in New Mexico is generated by power plants that burn fossil fuels, mainly coal, a significant source of human-caused greenhouse gases (carbon dioxide). The emissions from these power plants contribute to air pollution, public health problems, and global climate disruption. The sun is a clean renewable source of energy that can help us protect our local and global environment and reduce our dependence on fossil fuels.

Rooftop solar generation also creates a dual benefit for our local economy: 1) directly creating local jobs using local solar energy companies, 2) keeping our energy dollars in the community, further stimulating our economy via the “multiplier effect.” ☼

*Craig O'Hare is Energy Programs Specialist at Santa Fe County. For more information contact Craig at 505.992.3044, [cohare@santafecountynm.gov](mailto:cohare@santafecountynm.gov) or visit [www.santafecountynm.gov](http://www.santafecountynm.gov)*



**Two Birds**  
THERMOGRAPHY  
Radiation-Free Thermal Imaging  
Breast Health Screening

Kathryn Ater, DOM      Skye Gibbins  
505.247.2127      505.424.4811

Please Visit [www.ThermographyNewMexico.com](http://www.ThermographyNewMexico.com)

**COPY CENTER 20**

CHEAPEST PLACE IN NM FOR COLOR COPIES 8.5"x11" 100 for \$20.00

11" X 17" 55¢ • REG. COPIES 5¢  
ALSO CHECK OUR PRINTING PRICES!  
THEY ARE UNBEATABLE!

DESIGN CENTER - STREET LEVEL  
419 CERRILLOS ROAD  
MONDAY-FRIDAY 10-5 • SATURDAY 10-4  
ALL COPIES + TAX

20¢ EACH FOR 100 COPIES.  
SMALLER QUANTITIES 30¢ COPY

988.3456

**AFFORDABLE ALIGNMENT**  
BRAKES & SUSPENSION

Home of The \$45 Alignment

24 Years Experience!

FULL AUTO REPAIR!  
Oil Changes, Struts/Shocks, Alignments, Brakes, Tune-Ups, U-Joints, Diagnostics, Tire Sales, Flat Repair, CV Axles, Balance & Rotate, Lift Kits, Fuel Pumps, Timing Belts, Front End Repair.

Chris Romero  
Denise Vialpando **983-6650**

1501 6TH STREET SANTA FE, NM

Santa Fe County Offers...

**Free Renewable Energy and Energy Efficiency Advice for Your Home or Business!!**

- Reduce your electric, gas, and propane bills!
- Solar Power: 1/2 the cost it was just a few years ago
- Tax Credits, Incentives, Rebates, Financing

For More Info:  
**992-3044**,  
[cohare@santafecountynm.gov](mailto:cohare@santafecountynm.gov)  
[www.santafecountynm.gov](http://www.santafecountynm.gov)



**DUMPSTER WARRIORS II—TRASH BASH AT IAIA: NOV. 16**

On November 16, the second annual Trash Bash: Recycled Art and Fashion Show, featuring art and clothing created with recycled materials, will take place at the Institute of American Indian Arts (IAIA). Contemporary hunter-gatherers will utilize resources and supplies from waste or secondhand items. The event's keynote speaker is Stacy Neff, director of the NM Experimental Glass Workshop. Neff will talk about creative ways to use recycled glass in functional and artistic design.

IAIA's Student Sustainability Leadership (SSL) group, organizer of Trash Bash, has worked to raise awareness among the student body and the larger community about sustainability issues, including waste reduction and recycling. SSL will conduct a trash audit, where a week's worth of IAIA's trash will be displayed in the campus's center circle. SSL's Sasha LaPointe says, "It represents visibility. It is important that as a community based in creativity, we reach out to our peers and fellow artists in order to inspire them to open their minds to the possibility of using alternative materials, and to think twice before chucking a bit of clay or canvas to waste."



The art show will take place from 5-9 pm. The fashion show will be at 7 pm. Both are in the LSC Auditorium on the IAIA campus. There is a suggested donation of \$3. SSL will also screen a documentary related to these themes on November 15th at 7 pm, and has invited the community to participate a post-film discussion.

**RECYCLE SANTA FE ART FESTIVAL: NOV. 2-4**

The Recycle Santa Fe Art Festival will take place at the SF Community Convention Center on November 2-4. In addition to the Art Market, the event includes a Trash Fashion and Costume Contest, adult and youth juried art displays, and make & take art activities for kids of all ages.

The eco-conscious gift market will showcase art and crafts from more than 40 artists. Collages, picture frames, clocks furniture, rugs and jewelry, made from at least 75 percent recycled materials, are some of the items that will be available.

Friday's fashion/costume contest is at 7 pm. Advance tickets (\$15-\$20), which include art market admission, are available through the Lencic box office: 988.1234 or [www.ticketssantafe.org](http://www.ticketssantafe.org). Admission to the art market on Friday (5-9 pm) is \$5 at the door. Kids under 12 are free. Admission is free to all on Saturday (9am-5 pm) and Sunday (10 am-5 pm). For more information, visit [www.recyclesantafe.org](http://www.recyclesantafe.org)

**SANTA FE VOLKSHOUSE WINS 2012 ECOHOME DESIGN AWARD**

Mojarrab Stanford Architects was honored last month at the Builder's Choice Awards in Washington, D.C. by EcoHome, a magazine of the American Institute of Architects. The Santa Fe firm's VOLKsHouse, the first certified Passive House offered and sold in New Mexico, was awarded a Grand Design Award in the national green-building magazine's annual design competition.

The award highlighted VOLKsHouse for its energy and cost savings and praised it as "a viable example of how production housing might move affordable into the realm of net-zero energy." The home is one of only about 15 Passive Houses in the US. "The award adds to the growing public understanding of the need for energy-saving homes and their affordability," said Jonah Stanford, principal of Mojarrab Stanford Architects.

Based on the Passive House approach to minimize energy loss and maximize energy gain, VOLKsHouse uses one-tenth the energy required to power a typical single-family home—and that's before its active technologies, such as thermal hot-water and solar electricity, are factored in to make the home site energy-neutral. VOLKsHouse relies on extra insulation, airtight construction, high-performance windows and doors and a heat recovery/ventilation system that retains the home's generated energy while constantly exchanging indoor and outdoor air for increased air quality.

For more information, visit [www.Mo-S-A.com](http://www.Mo-S-A.com)



**UNICOPIA GREEN RADIO**

**1260 KTRC**  
SIMULCAST ON SANTAFE.COM

At a time when our culture is requiring a major shift in how we relate to the Earth, and our fossil fuel based economy is poised for transition to a renewable future...awareness, knowledge and synergy are keys to true sustainability.

For inquiries contact: [faren@unicopia.org](mailto:faren@unicopia.org)

**Each Saturday at 4PM**  
Hosted By Faren Dancer  
Designer / Builder / Educator / Activist

UNICOPIA GREEN RADIO is brought to you by [www.unicopia.org](http://www.unicopia.org)

**UNICOPIA**  
Awareness • Knowledge • Sustainability