

Report from Arizona by Carl Rald, Energy Program Coordinator, City of Tucson Energy Office

I am not with the Southwest Energy Efficiency Project (SWEET). The State of Arizona Energy Office sends me here. However, I talked with Howard Geller, the Director for SWEET, a few days ago and got the latest news. New Mexico has adopted the 2000 IECC statewide, and as I understand, Denver has adopted the 2003 IECC. Arizona is working on a state energy code. A commission formed by the Governor has finished its work on the subject and sent their recommendations to the Legislators. What happens hereafter is anybody's guess. In the best case it will begin as a voluntary. However, great progress has been made when Phoenix adopted the I-codes recently.

Before we leave the subject of Sweep's work, I would like to recommend their latest reports: A technical report, "New Evaporative Cooling Systems: An Emerging Solution for Homes in Hot Dry Climates with Modest Cooling Loads," analyses the performance of modern evaporative coolers and demonstrates their potential for achieving substantial energy and demand savings in the Southwest. And, a policy report, "Evaporative Cooling Policy and Program Options: Promising Peak Shaving in a Growing Southwest," makes recommendations on how utilities and governmental organizations can best promote modern evaporative cooling. These reports are very interesting and informative. They are also controversial as evaporative cooling by many is looked upon as an old-fashioned obsolete technology, which is bad for Indoor Air Quality. These publications can be downloaded from SWEETS webpage: swenergy.org

Let me tell you a little about the progress in Arizona despite no statewide energy code: A key part of Arizona's strategy to increase the number of homes built that meet and exceed codes has been to provide training to Arizona building trades that highlights the economic benefits (increased sales and decreased callbacks) of healthy, energy-efficient housing. This strategy is clearly paying off. Arizona has over 61 ENERGY STAR certified builders and has produced more than 20,000 ENERGY STAR homes through July 2003, over 20% of the nation's total. In fact, Tucson's more than 50% market share for ENERGY STAR new homes leads the nation.

A quote from the Southwest Energy Efficiency Project (SWEET) report "INCREASING ENERGY EFFICIENCY IN NEW BUILDINGS IN THE SOUTHWEST, Energy Codes and Best Practices" best describes the success this approach has had in Arizona.

"Several builders explained to SWEET that the motivating factor is that they've figured out how to do the job right, and they want to deliver to their customers better homes with reasonable energy bills. Good homes means satisfied new homeowners and fewer expensive callbacks. The fact that there's usually a third party inspector to verify that ENERGY STAR standards have been met helps, of course, as does good old-fashioned competition.

The success of this approach is also highlighted with this year's winner of the national NRS Diamond Award for customer satisfaction by a production builder, which was won

by Pulte Phoenix. The September issue of *Professional Builder Magazine* headline reads “Pulte Phoenix easily won the NRS Diamond Award for production builders.” NRS regression analysis shows that energy efficiency was the number one reason for Pulte’s high customer satisfaction. Regression analysis is a complex mathematical exercise NRS Corp. uses to isolate the factors in survey data that contribute most to customer satisfaction.

Arizona builds a large number of homes built that exceed codes by 30% to 50%. This has been accomplished by providing training to Arizona building trades that highlights the economic benefits (increased sales and decreased callbacks resulting in increased profits) of healthy, energy-efficient housing through understanding of how homes work as a system. This link between energy efficiency and profits is key. We need to understand that builders are in business to make profits. Asking them to do things that will increase their cost without increasing sales or reducing expenses will not be accepted. Once they see the potential efficiency has in increasing profits, you have their attention and they will want to learn how to realize these increased profits. Now all you need to do is help them build energy efficient homes as effectively as possible by providing training and technical assistance.

The approach, message and methods utilized in the Arizona Energy Efficiency Code Program can be duplicated through out the nation. The key is the spreading the profits/efficiency message, without this you may not have an audience for the message.

Going again to the SWEEP report, “INCREASING ENERGY EFFICIENCY IN NEW BUILDINGS IN THE SOUTHWEST, Energy Codes and Best Practices” the potential for technology transfer can be summed up in the words of Jim Colgan, Vice President for Sales and Engineering for Chas Roberts, one of the largest residential HVAC companies in the US. They complete almost 32,000 new residential installs per year, about 120 per working day. Their crews do about 75% of all new residential jobs in Phoenix and close to half in Tucson. Mr. Colgan and many of Chas Roberts’ designers and field crews have attended training sessions offered by John Tooley of Advanced Energy—fund partially through code grants.

“Why does Chas Roberts undertake these measures since there are no energy codes? “In addition to market forces, it’s the right thing to do--it makes houses work better. We have fewer customer complaints and fewer warrantee calls,” says Colgan. “There’s nothing better than a happy homeowner.” It seems clear that energy-efficient HVAC systems are positively correlated to both happy homeowners and Chas Roberts’ business growth.”

And what better way to spread this message than through the building industry itself. Peer to peer exchange is key. Having members of their industry, such as Jim Colgan, experience the success and let their peers know of this potential will provide the strongest endorsement possible for the industry to build energy efficient homes. For this to occur the profits/efficient link need to become sustainable.

Arizona is one of the first markets where this link is being made. If it fails here it may put this effort at risk in other markets. Today, builders are building on a national scale, what happens in one part of their market, good or bad, makes its way throughout the industry quickly. The key to spreading this effort to other parts of the nation is to ensure that it continues to work here. The positive link between energy efficiency and a builder's bottom line must be shown to be sustainable. Then, let the market work. The support that has been offered through DOE's Codes and Standards Grant over the past few years has played a very important role in moving our market to the point it is at today. Continued support in this area is essential to continue to move this effort forward.

I would like to be able to tell you that Tucson homebuilders throughout the community have improved energy efficiency with 10% or 15% overall. But I cannot. We do not have the data - yet. We will next year. We are working with the University of Arizona on such a study. For now, we only have what in a court of Law would be called anecdotal evidence. So, let me tell the following little story. We believe in recognition of good work. We have a Home Energy Efficiency Awards Program in Tucson/Pima County that has the Mayor's support and participation. This year we gave out a special award to the most improved production builder, US Home.

When we started the Teaching Energy Efficiency program 3 ½ years ago funded by DOE, we did not have any certified Home Energy Raters in Tucson. When we arranged the first training for Raters, we borrowed a subdivision from US Home for training and testing. The models we worked on barely passed the middle Energy Code, The result of these tests got this homebuilder interested in improving energy efficiency. Since that time, we have worked with this particular builder, tested homes, done infrared scans of every new model, and training for the superintendents and staff. We have constantly discussed improvements. The last homes we tested came in at 88.7 using the RemRate software. This is a 40% improvement in energy efficiency over 3 years. US Home built more than 1000 homes in 2003. If we compare these 1000 homes to the 3-year-old standard, this builder has saved this community \$500,000 in imported energy and kept 6,900 tons of CO2 out of the atmosphere.

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