



July 2009

Cost Effective and Low Cost Ways to Make Your Home More Energy Efficient

Why Consider Energy Efficiency?

While most people consider saving energy important, most have not considered what it would take to save energy--especially in their homes. With energy being one of the top priorities for the current administration, and with the extension of Federal, State, and Local utility rebate programs for homeowners, now is the time to consider what energy efficiency upgrades you may want to consider for your home.

As a Home Inspector I am frequently asked, "What would you recommend as the number one energy efficiency upgrade for a home?" The resounding answer is, "It depends!" Mostly it depends on the age of the home. Generally speaking, an older home will be less energy efficient than a newer home and have higher energy use appliances. So you really have to look at each home on a case-by-case basis.

The Most Effective Energy Upgrade

Most buyers are planning to make some changes to the property and want to know where they can get "the biggest bang for the buck." The number one energy usage appliance in Southwest homes is the air conditioner. So anything you can do to reduce the overall load on that air conditioner will go a long way to reducing energy use.

An air conditioner that is 15 years old or older will use *twice as much energy* to cool the home than a newer model, so the consideration to upgrade these older units should be a high priority. Typically you can plan on spending from \$4,000 to \$6,000 per unit, depending on brand, features and your specific installation. Generally, payback for this type of upgrade is five to ten years, and there are rebates available.

The second highest user of energy in the home is the water heater--anything you can do to reduce that load or to utilize alternative energy sources, such as a solar water heater, would be a benefit.

Lower Cost Upgrades

"OK, but I don't have that kind of money," or "I don't plan on living in the home long enough to recover the cost, what would a lower cost alternative be?"

Typically what I see in an older home (built before 1990) is limited attic ventilation and/or a limited amount of insulation in the attic. In a well ventilated attic (usually found in homes built after 1990), the attic temperature in the summer will be about 30 degrees hotter than the outside temperature. So when it is 100 degrees outside, it is 130 degrees in the attic. In a house built before 1990, I typically find these temperatures to be 150 degrees or more!

By simply adding soffit vents (openings at the bottom of the attic and top of the exterior walls), you could drop the attic temperature by 20 degrees or more and significantly lower the load on the air conditioner. This kind of retrofit would only cost a few hundred dollars, providing a payback on your investment within the first summer.

Homes today are built with a minimum of R-30 or even R-38 insulation (approximately 10 to 12 inches of blown cellulose insulation). Homes built before 1990 may have only four to six inches of insulation and, due to various activities in the attic, the insulation may have become displaced.

Anything you can do to insulate the ceiling from that 130+ degree temperature in the attic will reduce the overall load on the air conditioner. The cost to add an additional four to six inches of insulation in the attic of an average 2,000 square foot home should be about \$500 to \$1,500, which most people would save in energy cost during the first summer.

Environmental Changes

When I ask the buyer what changes they are planning when they move into the home, they frequently say they are changing the landscaping or removing a tree that might be overgrowing the roof or impacting the foundation. But, one of the least expensive ways to reduce the

load on the air conditioner is to plant a tree on the East, South and/or West side of the residence to shade exposed windows and doors from the sun. Ideally this would be a deciduous tree that would drop its leaves in the winter and allow the sun to naturally heat the home when it's cold outside.

The Best Energy Upgrade for Your Home

So, as you can see, the best energy efficiency upgrade for your home “depends.” There

are many factors that affect the overall energy efficiency of a home and, without looking at the home in its entirety, it's very difficult to point to a specific upgrade.

Additionally, everyone differs on what is most important to him or her and how much money they are willing to spend. My recommendation is to have the house fully inspected by a certified home energy auditor who is also familiar with the desert Southwest and how

specific changes will affect the overall energy efficiency and livability of that particular home over time.

Rich Schaefer of AccuPro Inspection Services, LLC has over 35 years of experience in Arizona construction, ten years as a certified home inspector and is also a certified energy auditor. If you would like to know more about energy audits, home inspections, commercial property inspections, construction inspections, mold inspections and testing, or to review past issues of AccuPro Insight, please go to www.AccuProINSPECT.com.
